



## JOY AND THE BLUE PLANETS

### the ideal city

This version of the utopian fiction is an American English translation, made by GPT-4 in May 2023, of the original work **Joy et les planètes bleues, la cité idéale**, available on [marvoguee.com](http://marvoguee.com).

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Bing.com / create, prompt: Nietzsche trail, Eze village, French riviera, high resolution.

The utopian fiction **Joy et les planètes bleues** was written in Nice, France, in 2017.  
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do you have to start all over again?

Bing.com / create, prompt: pinball machine, game over, neon style.

Joy, the heroine of the fiction, makes a trip to the past thanks to brain nano implants that induce thoughts. We distinguish a **Ghost mode** in which Joy, immersed in a situation of the past, attends an action without however taking part in it and a **Deep Dive Mode** during which Joy is one of the actors. Then, she enters another personality.

We are in the context of parallel universes.  
Joy's blue planet, twin to that of the reader, is however not the same despite large similarities.

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## PROLOGUE

### **heat wave**

*Northern border of Cameroon and Nigeria, June 1973 AD (Anno Domini, number of years since the birth of Jesus Christ, Western calendar), village of Kabado, I am Theo.*

We parked a short distance on the side of the track just before the large mango tree that marks the entrance to the village. At its base stands a man who appears very old. The accompanying missionary father insisted on introducing me to him. He will provide the translation. The elder is sitting; the foliage filters the scorching sun, but the heat is overwhelming, there is not a breath of air. Time passes so slowly that life seems suspended; with a lost gaze, the old man seems to be waiting. He barely paid attention to our arrival, but now that we are by his side, he recognizes my companion, a father from a neighboring mission, one of those Whites who settled here, in this remote corner of the world. They could have a good life back home, and yet they came to help their own in their humble and poor life. They say that all men are children of God and deserve the same attention. They also say that one day everyone will be reunited, parents of parents of parents... children of children of children; everyone will go to heaven. The elder starts talking about the weather, and the rain that is coming, the amount of grain left before the next harvest, a woman who will soon give birth but complains of very sharp pains, a bad sign. The missionary father advises her to go to the mission dispensary; the old man understood, he will try to persuade his relatives.

When my companion then asks if he has any news of his eldest son, the old man's gaze brightens a little. The year before or one before that, he can't quite remember, his son left for the south of the country. Since then, he has only heard from him once, precisely through the Catholic missions. His two surviving daughters got married in the city, not very far away, but he hasn't heard from them either. One by one, all the young people left the village, finding daily life too hard. The old man still hopes, but maybe they will never come back. Now that his wife is dead, he is being fed by others, neighbors who are not his own family; he is ashamed of it. Where are the ones he brought into the world, what are they doing? He will never have the happiness of seeing his descendants, the smiles of his grandchildren, their first wonders. So, he finds no meaning in his own life anymore. The mission fathers draw their strength from Christ, the God of Christians, just as the

inhabitants of the nearest big city draw theirs from Allah. But this faith in God cannot console him for the abandonment. He remembers that under the same tree, his grandfather used to tell him stories; he was just a child back then. At that time, the wild animals described in the tales were still a reality, a part of real life. His grandfather had taught him wisdom and respect for others, love for the family. Neither he nor the other children who listened thought he was rambling. He too would have liked to perpetuate this tradition of the old Sage under the mango tree, imparting life lessons, the product of his experience, the memory of ancestors, the only treasure he had to pass on to them. He too would have wanted to see his own flesh and blood grow up.

Then came the world of the Whites, their way of thinking, of detaching oneself from parents, of being an individual as they said, a person with their own rights, understanding "without taking into account the rest of the family," one's own people, behaving like a stranger. When they understood in the village, it was too late. With the arrival of the first television, teenagers started dreaming of the city, rejecting the traditional way of life. Some began to despise their parents. They quickly left without thinking they had any debt to them. Others found a good excuse to leave : once in the city, they would have an easier life, a paid job that would allow them to help those who were still in the village. Those promises were not kept. Caught up in the whirlwind of life, that of the new African cities, they all forgot their own. In the lost gaze of the old man, I perceive bitterness, sadness, resignation, the will to forget. What can he hope for, in the immediate future, rain, why not, death?

### **cursed writings**

Rome, Vatican, Sacred College, October of the year 1566. An emissary of Catherine de Medici, regent of the Kingdom of France, has just entered the office of the Camerlengo, Scipione Rebiba, the treasurer of the College of Cardinals.

– Sir Gondi, what a pleasure. Please have a seat. I hope you bring good news regarding our apothecary, or rather, the writings he may have left before departing to hell three months ago.

– Your Excellency, you know how indebted I am to you and dependent on your kindness. The French court is not easy, Catherine is no longer regent,

and the Gondi family must adapt. As for our matter, you shall judge for yourself.

– Your uncle still held much influence at court. At the express request of our Holy Father, I contacted him to learn more about Sir Michel de Nostredame. A rather curious character causing quite a stir in the Kingdom of France! If he hadn't been more or less protected by the king's mother, our dear Catherine, we could have put an end to this charade: an apothecary who believed he could predict the future! Blasphemy! Furthermore, he wrote verses in a poor mix of languages. Why quatrains, do you think, Tiberio? May I call you that?

– Of course, Your Excellency. The answer is obvious: the four elements of the alchemists.

– Water, air, earth, fire ?

– Yes, although he took great care not to engage in alchemy himself ; others have been burned, it was far too dangerous, and he had no need for it to make a living. His potions were highly appreciated; they were reputed to work wonders, especially against the plague.

– What did they contain ?

– Cypress powder, iris flowers, honey, no incongruous or dangerous ingredients such as sulfur or mercury salts.

– Is it true that the young King Charles IX of France is passionate about transmutation ?

– It is true, and in fact, as a gesture of our friendship, we could send him some transcriptions of manuscripts from our library.

– That's a good idea, but getting back to Nostradamus, how could he have remained in favor with the illustrious Catherine until the end ?

– Through the care he provided to his loved ones. My uncle had also benefited from it happily, thanks to his activities as an astrologer. He was intelligent and knew how to do without the court's favors, so Catherine treated him kindly. Moreover, since he was not in Paris, he was not much of a bother.

– However, there was still some mistrust from the king. That's what alerted us at the time.

– I assume, Your Excellency, you are referring to the alchemical project of transmutation. It is said at the French court that he refused to work with Sir de Pézerolles, as the matter seemed far too risky to him. The king and his brother, the Duke of Anjou, had already invested significant sums in vain; all of it could have ended very badly.

– No, it's something else : rumors that reached our ears through indiscretions and that would explain the incomplete form of the edition of the centuries, the missing quatrains in the seventh, specifically from forty-three to one hundred. It would not be a printer's error, as has been claimed, with a bundle of pages escaping the printing process. No, it would be deliberate, self-censorship, predictions about the future of the French court and the Church of Rome that could have been troubling. One of the quatrains would have predicted that Charles IX of France would never have a male heir, while others would have foreseen the arrival of significant disorder in his kingdom related to the reform. It was rather this that would have led the king to ask the governor of Provence to intervene by imprisoning the character.

– From what I know, our prophet was not really bothered.

– That's true, he had done too much good during the plague. Shortly after, the king undertook a tour of the country with Catherine; he met him then. None of the missing quatrains had been published in the meantime. Personally, I don't believe in any of these predictions, all of this is just the ramblings of a tormented mind. However, the dissemination of the missing quatrains could cause a lot of harm insofar as many people pay attention to them.

The Holy Father is concerned about this situation, as is the sacred College. You know how important it is for Pope Pius V to uphold the dogma. Since joining the Dominican order, Brother Antonio Ghislieri has always been concerned about heretical deviations. That is why he early on joined the service of the Holy Inquisition, climbing the ranks one after the other. The kingdom of France must not fall to the Protestant side. Given the character's notoriety, the publication of quatrains announcing tragic events could influence the situation. It could hinder our fight against heresy by pushing the King of France to show too much compassion or weakness towards the Huguenots; their faction in France is already strong enough, not to mention England.

The recent disappearance of Michel de Nostredame has renewed the Holy Father's concern. Indeed, the last published edition of the prophecies contained a preface in which he addressed his eldest son. From reading it, one could understand that this son, named César, would find the key to deciphering all the scriptures. It is only a step away to think that he also holds the missing part of the centuries, and the worry seems legitimate. Some cardinals also believe that Michel de Nostredame may have been inspired by the devil. According to them, the fact that the child was born with



extraordinary gifts for healing and curing would be nothing more than a trick by the beast to deceive us. But enough talk, tell me what you have been able to learn on this subject.

– In fact, Your Excellency, I have more than just information. Tiberio Gondi pulls a small flat sealed box out of his marten coat. The Camerlengo opens it. It contains a short manuscript signed by Nostradamus. These are the missing quatrains. He can't believe his eyes.

– Your uncle praised your skill. I must admit I am surprised and pleasantly impressed. But how did you obtain this document ?

– Michel de Nostredame's servant, his widow had fired him. He was the one entrusted by his master to deliver the manuscript to his son César. Even though he couldn't read, he recognized the handwriting and understood that it was important, so he tried to sell it. I was in France at the time, in the city of Salon, and I acquired it.

– Did he give you any trouble ?

– Yes, a lot ! He was very greedy, and at the last moment, he thought he could negotiate a better price in Paris. He mentioned it in a tavern. Eventually, I was able to retrieve the original, which is here, not without difficulty.

– Did he have it on him ?

– No, the document was hidden in a small village named Rochagule, located east of the city of Avenio in Provence. Michel de Nostredame's second wife owns a house with a vineyard there. We had to go there. The document was found under a stone slab.

– And the servant ?

– Initially, he didn't want to say anything. Is it worth mentioning that he met his fate with God? A death in terrible torment.

– May he rest in peace. Let's get back to the essential. Could there be any copies?

– Mrs. Nostredame, now a widow, and the young César confessed to the Archbishop of Arles. Neither of them seems to know anything.

– Very well! For now, know that the Pontiff's protection is now guaranteed to you. Rome, Vatican, October of the year 1566, Holy Father's office, two days later. The Pope is sitting at the large marquetry marble table where he works every morning. The Camerlengo faces him. A purple silk purse, fastened with a golden braid at the level of the drawstring, is placed in front of him on the table. It contains the rescripts, the executive order letters signed by the Pontiff himself, containing the transcription of the resolutions taken in the secret consistories. Among these, one concerns Michel de

Nostredame, a way for the Camerlengo to make the Holy Father forget the collateral damage: the torture of Nostradamus's servant by the executioners of the Holy Inquisition, and, no later than yesterday, the mysterious death of Tiberio Gondi, drowned after a bad fall into the Tiber.

– Holy Father, everything necessary has been done. Here are the cursed writings, the original version of the missing quatrains. The Pope examines the manuscript. He tries to remain impassive, but the Camerlengo clearly senses his intense satisfaction.

### **Century VII (excerpts)**

7:63 In the fourth decade of the third millennium to the east, the dragon of amber will awaken First, from the air, pestilence will come Sleep suffocation and vomiting

7:64 Universal conflagration Soon followed by a great clamor and slaughter Celestial fires, sea and air ablaze, messengers of death None will be safe outside the four western cities

7:65 Plagues, deformities, demons, and monsters Plagues, famine, and fires shaking the earth No arable land will know famine Dark water, nothing will be as before

7:66 Jews and Muslims will perish by blood Soon the sky of Sixtus will collapse Darkness will cover the wounded tiara of light From the deepest abyss, a new heretical law

7:77 Charles of uncoronated lineage Chases pleasant entertainment. Sweat of blood, the hours of the day will not reach Thistles, endless quarrels, no agreement...

7:83 Three days after the heretic virgin's wedding Two times three days, again, a tocsin Nocturnal turmoil, bodies in the Seine, flaying Great tearing and murderous madness

7:89 The dragon's child still lurking in the shadow Time rift, a young girl will warn through a mirror Four salamanders saved from the fire by the ocean's edge, they will drink rejuvenation

7:90 From the East, Toa will want to cover the sky with gold Chasing azure  
sky with a yellow sky When cinnabar makes one immortal The new order  
will be devoid of God's spirit

7:91 An angel of lightning will emerge from the moon Piercing the yellow  
eye of the jade mountain Then, at the end of time, the last one from the  
sepulcher will come Neither Christ nor Antichrist, the Phoenix will arise

7:92 The Church of the new order will be bound by ropes and chains  
Transcended consciousness, elevated intelligence Truth will emerge from  
gold and numbers Body and spirit, small and great, will be understood as  
one

7:93 End of times, infinite darkness Lightness, minute strands, total  
communion of ether Whispering wings, sarabande,  
a burst Time will restart, a new universe

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The pontiff rested the document.

– Sir Your Holiness, don't you want to read any further ?

– I know enough. No one should ever see these lines. These writings are  
surely the work of the devil, and they must be destroyed. Let them return to  
hell where they should have never come from. Do we at least know if Michel  
de Nostredame said anything before his death?

– It doesn't seem so, at least nothing about his supposed power of  
divination. Pope V hands the pages to Scipione Rebiba; he understands. He  
takes them, stands up, and walks towards the fireplace. One by one, he places  
them on the embers, positioning himself in such a way that the pope can see.  
The flames, fueled by the dry paper, grow, the pages twist and roll in the  
flames, which quickly spread from the charred corners to the center. Soon  
everything is over, and the camerlengo reduces the remaining ashes to dust.

– And what about those who were aware ?

– Like Tiberio? After serving God, Your Holiness, they are no more. May  
their souls rest in peace!

– But speaking of which, have you already notified his family ?

– It's done, Your Holiness, and there is another nephew Gondi here who is talented. We could further his career and make it known to Catherine de Medici. That would alleviate the family's grief.

– Excellent idea. You will also ask the Archbishop of Arles to keep a close watch on any suspicious publications for some time. Whether apocryphal or genuine, they could pose a threat.



– The servant was an ignorant man, a boor who couldn't read.

– One never knows where the evil spirit may hide. Let us be vigilant, for the stakes are too high. We must halt the reform, preserve the very Catholic France with the staunchly Catholic Spain, and keep its Church in the tradition of Rome. You must ensure it. See for yourself, my son, the measures to be taken, and report back to me.

Bing.com / create, prompt : in a chaotic scene, the ceiling of the Sistine Chapel collapses, crushing the pope and the cardinals, stormy sky.

## signs

*I am Joye, I'm ten years old. In the Western calendar, it's the month of August, more precisely Saturday the twentieth of the year 2022; USA, East Coast, near Boston, Revlands Amusement Park.*

This weekend, Mom and Dad are not here. Uncle Luc and Aunt Jill came to pick me up. We came to the theme park with my cousin Justin, who is three years older than me. After going through the large tropical greenhouse, we enter the dinosaur alley where a vast collection of animals reconstructed in artificial resin is displayed. There are already a lot of people. Justin put on the helmet and special glasses distributed to the public at the entrance of the park. With this equipment, just looking at a dinosaur allows you to know more about it; you are immersed in an action revealing flora, fauna, life habits, and battles between monsters. Even better, the helmet is capable of capturing brain waves, anticipating questions and providing answers. Depending on where you look, the animation changes, and there are levels of dramatization suitable for all ages and personalities. I know this game well because we came with the school in a group last week. I'm not too interested

in it anymore.

On the ground, a sign shows Pangaea. During the Triassic period, it was the only continent on Earth; it was surrounded by the Thetis Ocean. That was a very long time ago, between -250 and -200 million years ago, long before humans appeared. Next to each representation of dinosaurs, there is an indication. Among the reconstructed specimens: at -230 million years ago, a group of coelophysis, carnivores about ten feet tall with a dome on their heads like an inverted bowl; at -215 million years ago, a plant-eating plateosaurus as big as three cars, surrounded by araucarias, cycad shrubs, and small rodent-like creatures hidden in ferns. Right across the alley, we find ourselves in the Jurassic period, which extends from -201 to -145 million years ago.

The land is now divided into two continents, Laurasia and Gondwana. Some representatives from the end of this period are presented: a giant diplodocus with a long neck and a small head dominates the landscape with its sixteen tons, even though its brain is very small; it's a gentle herbivore. Next to it, there are a stegosaurus and a solar dinosaur, the latter easily recognizable by the reddish-brown vertical plates embedded in its back and its tail bristling with spikes like a weapon. At -145 million years ago, an archaopteryx with a wingspan of nearly two feet announces the birds. Although it has feathers and wings, it is not yet capable of flying. It can only glide from tree to tree. On the ground, other dinosaurs run around, as small as ordinary chickens.

I quickly move on and return to the second part of the alley: on one side, the visitor is immersed in the Cretaceous period with a carnivorous tyrannosaurus and an herbivorous triceratops, labeled -145 million years ago, hidden among a set of tall conifers, giant ferns, and ginkgo biloba trees; the characteristic skull of the latter is equipped with three horns. Further on, I see an Edmontonia ankylosaurus, another herbivore; it is protected by a bony shell from carnivorous dinosaurs. To complete this ensemble, there is also a Jeholornis, a feathered dinosaur resembling a bird, and a pack of velociraptors attacking a Protoceratops the size of a large pig. Although they are only five feet long and barely one and a half feet tall, they are very fierce. Still in the main alley but on the opposite side, we reach the last section. It gathers creatures that appeared starting from -65 million years ago after the impact of a large meteorite in the Gulf of Mexico. Many bird-like dinosaurs are seen, some resembling large ostriches. They are Oviraptors with a bony

crest on their heads, somewhat like cassowaries from Indonesia. On the ground, their eggs are arranged in circles.

I have now left Justin far behind. Equipped with his glasses and helmet, he must be trying to escape from the velociraptors. Uncle Luc knows perfectly well where I want to go, to the Palace of Mirrors. Ever since the park opened two years ago, I never forget to come here. Justin doesn't like it at all, and when I suggest he accompany me, he starts grumbling. According to him, it's an outdated attraction only meant for old people who want to relive their childhood, or for girls, he adds! He claims that his virtual reality glasses can do the same thing, but I disagree. It's much better in real life. The park is safe. There are no risks, and besides, Justin is already thirteen years old, no longer a child. Uncle Luc still gives him some instructions before accompanying me to my favorite attraction. He can go to the big shark tunnel alone, and then we'll all meet at the cafeteria with Aunt Jill.

After crossing the bridge that separates us from the island where the Palace is located, we arrive at its entrance. It's still early, and I find myself alone, perfect! That way, I can stay in the cube longer. Uncle Luc sits on a bench and taps on his smartphone. I enter. The corridor is covered in distorting mirrors reflecting more grotesque images one after another. Here, I transform into a sort of elongated, segmented earthworm; at its end, my head, but reduced in size. There, I am a toad with a huge mouth; further on, I find myself cut into pieces, then alternately rejuvenated and aged. Around a corner, I become a man, and further on, I have a monkey's head. As always, I take some photos. To reach the center, where the main attraction, the cube, is located, I have to grope in semi-darkness. I'm there.

I settle into the transparent capsule. A haunting science-fiction melody begins to play as the mechanism starts, slowly bringing me to the center of the cube. Six faces, six interior mirrors where I see myself with the impression of being suspended in space. The light diminishes until complete darkness, a distant roll of drums followed by triumphant music that builds up. The cube expands, forming multiple facets, a polyhedron. Now I see the celestial vault with its stars and constellations, just like in a planetarium. They come and go, drawing closer or moving away as if they want to inexorably pull me to the farthest reaches of the universe, to reduce me and make me understand my infinite insignificance. Zooming in and out, growing, shrinking, growing. Uncle Luc explained to me that if I see the stars as small dots on a black background, it's because I live in an ever-expanding universe. They all move away from each other relentlessly.

The spectacle continues. I navigate through space, entering something that resembles our Milky Way, but strangely, it has not four but five arms, and it is more pearly or iridescent than milky. During my last visit, about a month and a half ago, I'm sure it wasn't like this. I reach the end of one of the arms, where the stars become more numerous until they blend into one another. There is only a continuous pink background, like the morning dawn at certain points on Earth.

The bubble in the center where I am located decomposes in turn; reversing its path, it transforms into multiple polygonal faces, somewhat like an inverted fly's eye. Their number decreases, and I start to distinguish details, a mosaic of small, juxtaposed reflections, light green or dark green, and elsewhere varying shades of brown, like amber. They come together, fall into place. Concentric circles, an eye, or rather the same eye repeated several times. It's a gaze I know well, my own! The polyhedron has once again reduced to its original cube form. I see myself in the six mirrors. I have a surprised look in which I detect something strange, something peculiar. I know all my freckles perfectly. I could almost count them, the rare ones that seem lost on the wings of my nose, and even the numerous, closely spaced smaller ones that adorn my cheeks. Among them, precisely, one is missing—the darkest one—and even another one, several others. Oh yes, the eyes too: the tiny specks of yellow, amber, brown, and honey green. It's subtle, but there is a difference, a new effect from the Palace of Mirrors? No, an intuition tells me it's not really me, well, not exactly, even though the images are surprisingly similar. It's more like I have a twin sister with tiny differences.

Dad always tells me that I'm pretty, very pretty. Even as a child, I'm already a woman, a child-woman, but that's because he knows Justin makes fun of me; he calls me a "wild little redhead"! In the evolution gallery, there are wax mannequins representing men and women from the Stone Age. Among them, there's a Neanderthal woman with red-brown hair. For Justin, it's obvious, I must have genes from cave women! Mom tells me that it's even better to be pretty than to be beautiful. There are many beautiful women, all those famous women who are models, mannequins, or actresses; being pretty is something else entirely, it's having a charm that disturbs others. It's true that sometimes people seem uncomfortable when I look at them. It's as if they're afraid I'll try to read them. Dad and Mom are right, Justin is just jealous.

Here, in the cube, on the largest image, I find myself truly pretty: a small face with a triangular chin, a small mouth, and lips with a rosy color that

matches my milk-toned cheeks; the fact that they're sprinkled with a multitude of freckles doesn't change that. And in contrast, there are my curly hair, more red than brown. Overall, in front of me and behind me, from top to bottom, left to right, it's still me. I turn around, raise my arms, fix my hair, make funny faces. The multiplied images immediately comply.

While I'm sticking out my tongue, suddenly the sound becomes strange. It seems to fade away after a few seconds, only to come back and then sink again into a creaking noise. It reminds me a little of the noise some toys make when the battery starts to run out. Something weird is happening. Suddenly, I feel cold, and I hug my arms against my chest. In the hall of mirrors, the images distort. Justin has a game where you can see what you'll look like when you grow up, and it's the same thing here. Yes, it's still me, but I'm no longer ten years old. It looks like I'm thirteen, then sixteen, and it continues. Now I'm an adult, maybe the age of Mom, a little over thirty years old. The freckles have become more pronounced, and I'm wearing lipstick. My eyelids are accentuated with sheer light green eyeshadow, and on each side of my face, my finely curled hair cascades down. A familiar voice is heard, of course, it's my own! It's the voice that Justin's game predicts for me when I grow up. It's as if I'm hearing it directly in my head.

– Hello Joye! I can't take my eyes off the gaze facing me, my own eyes with their overlapping transparencies. It's as if I'm looking into myself. The music has stopped, but the image continues to speak.

– My name is Joy, almost like yours, Joye. I'm somewhat who you'll become when you grow up, but this is not a game. I wonder if it's a special effect, an attraction for those older than me, but there are no controls, and I'm not wearing any mask. However, she understood, smiles at me, and continues.

– You need to keep looking at me, it's important, and it won't take long, just a few minutes. Immediately after, you can join Uncle Luc.

– I'm so cold!

– You know, I've wanted to meet you for a long time.

– Are you part of the game?

– No, it's not that!

I can't detach my gaze anymore; I know it, they call it hypnosis.

– It's not that either. She understands every one of my thoughts. I think



about the book in my room, the one that tells the story of two twin sisters; one of them left Earth at only 12 years old. After traveling at high speed through the depths of the universe, she returns to Earth and reunites with her sister. The sister is much older then, already with a family and children. Maybe that's what this is about.

– Don't ask too many questions; time is running out, yours and mine. You just need to know that until your age, I lived in a world that strangely resembled yours but wasn't the same.



Bing .com, images, create, prompts : an amusement park with a magic maze of mirrors in the center of an island, dinosaurs in the background, high quality realistic style / a ten-year-old girl, red-haired, freckled, in a palace of mirrors (attraction, maze of mirrors).

Suddenly, it's like a torrent of images, like so many dreams, a cascade of images and animated sequences, a fireworks display. I see colorful domes by the ocean, a large bird-shaped building, Mom is there. There are jellyfish too, with water flowing over them, and then a lovely village like so many in New England, with its neat little houses. School, I'm sitting on a bench, listening to the teacher named Paula. Then I see laboratories; they resemble the ones at Ydutech, Dad's company; that's where Mom works too. Strange: chimpanzees with helmets on their heads. A great void... Too much information blends confusingly, then everything becomes clear again. I see a large forest, robots, drones, I hear explosions. The pace accelerates, I have flashes: Uncle Luc is next to an older man whose head resembles the marble busts in the Museum's gallery of Greco-Roman antiquities. Finally, as abruptly as it began, nothing, my head empties, I feel very tired. It's no longer

fun at all; I'm starting to get scared. I'd really like to leave, but Joy is there, and her gaze reassures me.

Joye, it's over, everything is fine. You're going to join Uncle Luc, Aunt Jill, and Justin. But first, listen to me carefully because it's very important: when you go back home later, you'll write everything that's in your head in notebooks, everything you remember directly but also anything that comes to your mind. When it's finished, you'll go and leave it somewhere in the city, at the public library, for example, or simply on a bench in a park. It will be like a message in a bottle. Now, I must go. Know that I wish you a lot of happiness, I love you. I hope you'll understand the meaning of all this one day. The show is over. I feel like I'm waking up right after a dream that we can only remember.

~

## **ANIMAL AGE**

ECCE HOMO

### **origins**

Thirteen years later

*I am Joy. April, nineteenth of the year 2035. Northeast of the USA, Underground, Ocean Dome, Nemo Project.*

Blue planet, one of the countless occurrences of planet Earth in the multiple universes, blue because it is the color that human beings perceive it from space. I am Joy, a twenty-three-year-old human, born on this planet in the year 2012. It all started for me when my mother Claire and my father Ray merged their genetic materials by copulating like many other animals using a sex mechanism invented by evolution. Before emerging between my mother's legs covered in a mixture of viscous and bloody fluids, I remained well protected for nine months in her belly. Today is the anniversary of my birth, the day I came out of her body. The moment the midwife cut the lifeline that connected us, I became Joy. Since that moment, my blue planet has already completed twenty-three orbits around its star named Sun. So I am twenty-three years old. By comparison, ninety years was the average life expectancy in my grandmother Emilie's time; it has now risen to one hundred and ten. Soon we will be able to consider immortality, when exactly, I cannot say precisely, it will depend largely on me. I am also a survivor, a survivor of a conflict in which all the evil that humans had accumulated unleashed itself, the evil of thought, the evil of weapons created solely for the purpose of killing each other.

I am one of the women and men who have created the new world. Where I live, on the east coast of the great North American continent, between the forty-fourth and forty-fifth parallels, a large protective veil is being deployed above the ideal city of Ydunea. It consists of three distinct areas: Cipawat, the district where the headquarters of Ydutech are located, Cipeia, the residential area, and finally the peninsula of Asinika. For the past two days, the winds have been unfavorable, just like the year when Sarah arrived; indeed, highly radioactive clouds are heading towards us. Moreover, they could very well

carry the microorganisms that were spread abundantly on the planet during the conflict. They pose a danger to all forms of DNA-based life.

On the peninsula, there are the Amipi clinic, NewGreyHouse, the house where I live with my parents, and Aunt Jill's house. The three buildings face the Atlantic Ocean. Finally, there are also the four domes that emerge from the underground structure called 'Underground' between the clinic and the two houses; they bring natural light to the gigantic underground complex that houses the most secret installations of the city. Only a few accredited individuals can access them. The emerald-colored dome marks the territory of Ben and Conrad, where all the computing power of the city is concentrated; the Nemo Project dome is easily recognizable as it mimics the color of the ocean like a chameleon, and that's where Uncle Luc, Aunt Jill, Chang, and Krawn work. Then there is the ruby dome of the Sustain project led by Kim; it has a disturbing appearance with its dark red glow that sometimes turns to a vivid orange; it looks like an almost extinguished fire that constantly tries to reignite. In these laboratories, they study how to stabilize DNA, extend life, and prepare for immortality.



Finally, there is the fourth and last dome. What happens below is a mystery to all of us inhabitants of the ideal city; it reminds me of one of those Australian opals made up of a juxtaposition of very small iridescent crystals and all sorts of colors. Depending on the day, its dominant color matches one or the other of the three other domes.

Bing.com / create, prompt a futuristic view of the new city of Ydunea under a dome, geometric shaped buildings and luxurious vegetation.

From NewGreyHouse, I observe the powerful reinforced carbon ribs soaring into the sky. They will meet, join, and unite to create a mesh on which the double-layered membrane will develop to purify the air. Once in place, completely sealed, the shell is airtight and windproof. In case of impact and tearing, it is also capable of self-repairing very quickly. At the peninsula level, it extends into the Atlantic Ocean, reaching a mile off the coast to the ocean floor; there, the seawater itself is constantly filtered. After the disaster, we all

learned to live sheltered by sails, to breathe filtered air, and sometimes even to live underground. We have become accustomed to it.

I'm waiting for Uncle Luc to call me. I have just completed the advanced research training program that was set up at Ydunea before the Apocalypse. Uncle Luc and Aunt Jill, united in life and work, are part of the supervisory council as researchers; both specialize in neuroscience and artificial intelligence. Uncle Luc had promised that I could visit Underground on my twenty-third birthday once I obtained my research certification. In fact, I haven't been back to those places since the autumn of 2028; I was eleven years old then, and it was for the inauguration of the new underground facilities of Project Nemo. In the meantime, after high school and the first years of higher education, I conducted research at the Amipi laboratories on the topic of brain implants, but only in the old laboratories on the ground floor and basement of the south wing of the clinic. They conduct studies on artificially reconstructed three-dimensional brain matter, as well as experiments on chimpanzees, including Charlie and Priscilla.

I tried several times since that single visit to convince Uncle Luc to let me come back to Underground. Each time, the answer was the same, a refusal. The rule applied to everyone, even to Ray's daughter, my father, the powerful CEO of Ydutech and founder of the ideal city of Ydunea, and to Claire's daughter, my mother, the highly respected Director of the Amipi clinic and wife of the founder. To enter Underground, the minimum qualification is a doctorate in science. Furthermore, certain specific conditions had to be met related to the fact that they worked on subjects of national security interest to the powerful USA federation. No special privileges were granted.

So, I had to be patient while suspecting that extraordinary things must be happening there. The ring on my left hand starts flashing. I activate it, and it projects the long-awaited message to me. I am expected. I take the elevator that leads to my mother's office at the top of the central rotunda of Amipi, but this time heading underground. The entrance to the complex is directly below the reception desk of the clinic. I have nothing to do because the elevator seems to know where I'm going. The last level indicator, the one signaling the clinic's basement, lights up, but the cabin doesn't stop; it continues its descent. Stop, the door opens, then an airlock, and in front of me, a long corridor that curves. The former concrete tunnel has been replaced by a smooth conduit with no roughness, details, or signage. It is uniformly illuminated, and a luminous ring invites me to move forward. I must

have already passed the computer complex in the first position, as well as Kim's genetic engineering laboratory, but I let myself be guided by the luminous ring sliding in the tube. It finally slows down its progress and comes to a stop. I have arrived.

A door opens on the left. The room I enter has nothing to do with the laboratory I visited two years ago. I remember it as a cluttered space with all sorts of physical equipment, computer terminals, and flashing control lights everywhere. Today, the ovoid-shaped room is stripped of everything except for two large seats placed in the center. Behind me, it would be hard to guess where the access door closed. Like the corridors, there is nothing visible on the walls, floor, or ceiling. Everything is a seamless continuity, giving the impression of being inside a cocoon. The coating, in shades of white and light blue, undergoes subtle and slight changes in appearance, transparent waves, iridescent ripples of pale mother-of-pearl that move subtly. It reminds me a little of the Northern Lights.

In terms of dimensions, the room must be about thirty feet high at its maximum height and three times larger in its main axis. I am alone. I approach the seats, about twelve feet apart. These are not seats for simple chimpanzees; their design is clearly intended for a human form. Yes, that's right, I suspected it. Uncle Luc extended the brain implantation work to the human level, and that's undoubtedly the reason for the installation in Underground. Enveloping and placed in inclined positions, they are extended by a sort of slender tentacle that ends in a bulb. There are no longer any bars, joints, gears, or motors. Everything consists of curved volumes covered in a material that resembles artificial skin, like the "livoids", those "real humans" who assist us every day in Ydunea with our daily tasks. I imagine their carbon skeleton and the memory polymer muscles beneath, contracting according to electrical control signals, techniques that ensure flexibility and precision. The same logo, a nautilus, is stylized on both helmets. I can see a few controls on the armrests.

One of the stations has just lit up. It is an invitation to sit there, which I do without hesitation. I barely feel the contact when the helmet's casing gently applies itself to my head. An image takes shape from the floor. It becomes increasingly clear, a hologram, that of Uncle Luc.

- Hello, Joy.
- Hello Uncle Luc.
- I made you wait, but I'm sure you have already forgiven me. I was very

busy with our friends from the arks, but I hadn't forgotten my promise to show you the new Nemo project facilities as soon as you obtained your doctorate and for your birthday.

– The place has changed a lot.

– You mean it seems very stripped down, minimalist, but you can well imagine that it only hides cutting-edge technology. The logo you see on the helmets is that of the Nemo project, and you have undoubtedly guessed what it is about.

– Have you moved from chimpanzees to humans ?

– Yes, quite some time ago. Numerous experiments have already taken place since then, thousands of experiences.

In front of me, in the central space, all sorts of display panels that were previously concealed are unfolding from the floor; screens light up one after the other. On one of them, a clock shows the current time, April, the twelfth of the year 2035. Another measures the diving time (immersion time). I also recognize displays for vital parameters. Luc continues:

– In addition to its ability to inject static images directly into the brain, the system can now also handle dynamic experiences. It can directly send animated sequences into the brain, bypassing the sense of sight. You realize that it's much more complex because the upper cortex is involved.

– And the implants, are those the ones being studied at the clinic ?

– A derived form, yes, nano implants guided by the blood vessels that attach to the myelin sheath of neurons. There are thousands of them, far more than what you commonly use in your research work, and soon there will be ten times more, just for the visual cortex areas.

– Is it dangerous ?

– The method is well-developed. The extraction of implants and their elimination occurs through the bloodstream without any harmful consequences. The resorption is natural after a period that we have managed to accelerate thanks to a molecule that facilitates the detachment of nano implants. In practice, it is this question of reversibility that has caused us the most trouble; the research has been arduous. When a subject is exposed to a visual experience, whether naturally through the retina or by stimulating the implants, the same mental processes develop. All kinds of nerve connections are activated, calling forth similar images, rekindling memories, words, images, sensations. It's a whole chain of links that is established,

invoking memory, the storage of what is felt as good or bad, useful or useless, pleasant or unpleasant... All of this gives rise to reactions, gestures, decisions, words that must remain perfectly controlled by the subject. The subject reacts based on their own consciousness, and of course, it is necessary to ensure that all this natural circuitry is not disturbed. We have adopted the same approach as the one you use with chimpanzees when you ensure not to alter their personality. In practice, to ensure that we don't irreversibly change each of their natural reactions and to be able to restore them if needed, we scan them entirely. We do the same thing for humans. Paradoxically, conducting experiments on humans can provide advantages. We can exchange information about the experience and progress faster. Humans have an exceptional ability to develop a second personality. They spend most of their time projecting themselves onto others; theater actors or double agents are good examples. They do it in a perfectly controlled and reversible manner; they naturally know how not to exceed certain thresholds. That has helped us greatly because some have agreed to participate in a few experiments. They were not brought here, of course, but to large hospitals with simple brain helmets and external sensors. It's obviously much less precise, but we have learned enough to understand how to avoid irreversible identity dissociation.

- In practice, how does it work ?

- It's simple, at least in concept. As soon as the subject enters the new mental state, we control the limit not to be crossed. If no reaction from the original personality appears naturally, then we immediately solicit it. In the case of a theater actor, it happens naturally. They ask themselves questions: are their fellow actors playing their respective roles correctly, are they showcasing themselves enough, is the audience reacting well? They also occasionally glance at the audience. It's the same for a double agent; they periodically return to their main personality. So, we drew inspiration from all these self-control mechanisms to create a whole set of reversibility tests. Once this difficulty was overcome, we started building typical personalities inspired by real contemporary or historical figures.

- Are there many of these personalities or fragments of characters that one can mentally enter without risks ?

- At the moment, there are a very limited number. If you asked me today to immerse you in the mind of an astronaut, I would tell you that it is not yet possible; that profile has not been created yet. To answer your question more precisely, let's say that there are currently about thirty personalities in an



advanced stage of construction. You could share at least a part of their life, but before any experience, before stepping into the shoes of another person, to use the old-fashioned language, there is an essential prerequisite. Any candidate for a mental dive must agree to be probed, to accept that all their knowledge, their memories, their emotions, their past, their life, be recorded, even to the deepest recesses of their privacy. I assure you; everything is encrypted in such a way that no human being can access this data. The quantum encryption used by Ben makes the data inviolable. The person who accepts the adventure will have their personality updated to the day of the experience and then buried in the granite vaults of the computer complex, beneath the Emerald Dome.

– Do you think that one day I could lend myself to the experience ?

– I know that the subject has always fascinated you ; we discussed it with Aunt Jill.

– Is she here ?

– Yes, you will see her later. For now, she is making some adjustments on Nautilus.

– Nautilus ?

– That's the name given to the complex interface that allows for immersions, the one that controls all the experiences, constantly scrutinizing and monitoring. Aunt Jill supervises its functioning with the help of Chang, whom you have already met, and Krawn, who joined us when we received these new premises. I will introduce you to him in a few moments.

– But on my part, I suppose I will have to wait for your return ?

– I hope to be back in a few days, but it is not necessarily necessary for me to be there in person. It would be good for you to give it a try soon to confirm your intention to join our team. After that, we can discuss everything again. Aunt Jill, Krawn, and Chang could perfectly control a first trial. However, there is an essential prerequisite. We must store in memory.

– Would that take long ?

– It could take between one and three days depending on your reactions. First, the implantation would need to be done. There are normalization adjustments to be made, compensations to be carried out because the fine assignment of the areas can vary from one brain to another. This procedure normally takes a day, and only after that, your personality could be analyzed. Nautilus would then probe your memory down to the deepest levels. During this phase, memories that you may have forgotten, sometimes for a long time, could resurface, but it would be too long to explain now the technique

in detail. However, know that if you decide, you will be subjected to a whole range of sensations, visual, auditory, tactile, olfactory, and confronted with various situations. You will even have discussions with Nautilus, and throughout the process, your reactions and thoughts will be stored. In the end, the system will know you entirely, and you will have no secrets from it - your emotions, feelings, beliefs, way of seeing life, what can generate rejection or disgust in you, what you judge as good or bad. Your deep personality will be laid bare, and your behavior, reactions, empathy, or antipathy can be predicted, but you already know all of this.

– And in case of an incident ?

– That would be highly unlikely, but of course, zero risk does not exist ...

– It would be highly improbable, but of course, there is no such thing as zero risk. You yourself have encountered this in your experiences with Priscilla. Rest assured; Nautilus is capable of restoring connections. It's just a matter of neural circuitry. By stimulating the right sensors, repeatedly, if necessary, we can modify the pathways. For example, we can induce a specific feeling in response to a particular situation and implant it permanently. The brain matter has enough plasticity for that. But I realize I'm mostly talking about Nautilus when, in fact, this interface pilot would be nothing without the Machine that is upstream, and its presence should reassure you.

– The Machine ?

– Yes, with a capital M. That's how we fondly call it Quintessence. It's the quantum supercomputer that controls the upstream interface and amplifies its intelligence. I'll tell you more when I return because I see that time is passing. I'll have to leave you, but before that, I'll introduce you to Krawn. If you decide to give it a try, then, as I explained, he can oversee the operations with the help of Chang and your aunt. As for her, she will be in control of Nautilus.

## **Bang**

*I am Joy, Dome Ocean, Nemo Lab, month of April, the nineteenth of the year 2035, experiment time: 0 hours, 0 minutes.*

Why would I have waited? I have made up my mind without telling Justin. I think he wouldn't have hesitated either. I'll have a head start on him! It's already been a week since I've been spending time with Krawn, or rather his avatar, simple, kind, and reassuring. Everything went as Uncle Luc told me,

first the implantation, then all sorts of tests that allowed Nautilus to extract everything from me. It's a strange feeling to know that now there's a copy of me in the Machine, that it explored me to the depths of my soul, completely exposed on a mental level, that it now knows my psychology, how I react, even what I feel for Justin. It could replace me without anyone noticing in a situation where I wouldn't have to be physically present, animate a perfect avatar. I am now ready for the grand voyage. Krawn is by my side. I can barely feel the soft structure of the helmet settling on my head. I only feel a slight pressure as it compresses my short blond-red hair. I can imagine Justin's reaction if he could see me; he would surely be jealous. He wouldn't understand why his own parents didn't prioritize him.



Bing.com / create, prompt: creation of the universe and the solar system.

– Joy, are you ready ?

– I am ready.

– You are about to embark on a great journey into the past, encountering a synthetic vision of history, entering some decisive epochs of humanity. Mentally, you will inhabit the minds of women and men from those times, experience their feelings, live with them, share some of their trials, moments of happiness as well as sorrow. With them, you will face good and evil, but throughout the journey, you will still be Joy, Joy from this blue planet, and all your reactions will be followed, your surprises, remarks, critical opinions, perspectives, and feelings. If at any moment you wish to interrupt the dive, it will be very easy for you. By mere thought or by pressing the red button on the right armrest, you can stop everything.

– I well understood.

–OK, have a good trip, in my company.

In front of me, the image of my brain starts to come alive. A multitude of tiny, luminous dots indicate the neural implants. A very slight tingling sensation quickly passes, and the dive counter already shows ten seconds. I am still Joy, but the projection shows that my thoughts are already being monitored, analyzed, and controlled. There are enlargements, tomographic sections, three-dimensional zooms specifying the circuits of activated areas,

all sorts of other detailed information on the wall screens, including the data transfer rates passing through Nautilus, the extraction rate of various forms of memory, the mental impression rate of injected information, the neuron relaxation rates, the emotional rates, and all sorts of other parameters whose meaning I don't quite understand. The clock of time races backward at full speed, -1,000, -10,000, -100,000, -1 million years (MY), -1 billion years, 1000 MY. It slows down until it stops at -13,800 MY.

*I am Joy, time of experience: 0 hours, 1 minute, -13.8 billion years.*

We find ourselves at the very beginning of the Universe in which I was born, the same one where I live in the present. A theatrical spectacle unfolds before my eyes. First, I see an incredibly dense quantum bath, composed of tiny native elements. Later, human scientists will refer to them as tiny strings or elementary vibrations. During the Big Bang, at time zero, the moment of the initial explosion imagined in some Genesis, this dense matter literally bursts. Time has just been born in my universe. In the rush, the 'first' ejected elements contort, gesture, and unfold in new dimensions, especially those of the Cartesian space that humans will most often use x, y, and z. Matter is born from this great commotion, consciousness appears. The disturbed elements try to come together; often, the attempts are ephemeral. Other connections are more lasting. Not all constructions or morphologies, not all respective arrangements are possible because certain mathematical rules govern them; thus, the creation of matter is accompanied by the creation of antimatter. Interactions differentiate as perceived time progresses for humans, more precisely as the process of the Grand Return to the All progresses. Gravitational forces, electromagnetic forces, weak and strong nuclear forces replace the initial force that reigned at time zero in the initially concentrated bath. Elementary particles appear. These groupings of energy-matter, those that I am capable of perceiving in my world, by my nature, on my blue planet, leave a lot of 'empty space' between them. This phenomenon will intensify later as galaxies move farther and farther away during the expansion of my Universe.

*Back in the past:*

380,000 years after the Big Bang, there is a flash of light; certain particles recombine. In the confined framework, which is now less dense, some of them merge to form groups of simple atoms such as hydrogen (H), helium (He), and lithium (Li). Light begins to propagate in all directions at a

phenomenal speed, reaching 186,000 miles per second. 550 million years later, as the universe continues to cool down, its density decreases. Nautilus offers me a glimpse of a vast array of galaxies; I am aware that there are hundreds of billions of them, each containing tens of billions of stars. The spectacle is impressive. What an extraordinary acceleration in human understanding of all these events! Not so long ago, just ten thousand years before my birth, the human species emerged from nature, from the first age, the age of animals. Only a few hundred years before my birth, astonishingly, everything had accelerated in the West with an avalanche of new knowledge. Western civilization had rapidly applied this knowledge and developed all kinds of technologies. It had transitioned from theory or abstraction to practice, demonstrating great ingenuity. Glass had been known for a long time, and humans could have invented lenses long before. They could have assembled them into telescopes, microscopes, or binocular magnifiers and discovered the infinitely small and the infinitely large much earlier. So distant are the stars, so small are the microbes. The Machine now shows me an astronomer scanning the night sky through his telescope. I see with him the clusters and filaments of galaxies. He is particularly interested in their spatial distribution, and soon the reality of the expansion of the universe becomes apparent to him, since the Big Bang. How far and how long? Another mystery that researchers were still striving to unravel when the great cataclysm occurred, in that fateful year 2034, marking the end of Western civilization on my blue planet. I reflect on all these theories about our universe. Today, deep within Underground, powerful computers continue to churn out data to solve the enigma. The human eye perceives barely five percent of space, the matter of which I am made, and light. The rest belongs to the realm of speculation.

## **blue ocean**

fireball

*Immersion : I'm Joy, experience time 0h06mn. I'm observing.*

9,200 million years ago, interstellar space: within the local group of galaxies in gravitational equilibrium, I catch a glimpse of a spiral galaxy, the Beaded Way. It is flattened and wide in its largest dimension of 100,000 light-years (a light-year, AL, is the distance light travels in 365.25 days; it

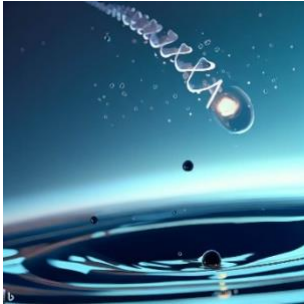
propagates at the speed of light,  $c$ , in a vacuum, 186,000 miles per second). If I were attached to a beam of light, then I could reach the Moon in just over a second and the Sun in a little over eight minutes. All these distances are enormous relative to the spaces where humans are confined. I now move through a chaos of stars. From the galaxy's disk, I take one of the five arms that extend from the center to the edges. I reach the end. I am now within a nebula whose border contains many younger stars. It is a nursery. Time accelerates dizzyingly. Gases and particles clump together due to gravity, nuclear fusion begins, and the center becomes a new star. A little further away, another one is dying. In its final stages, it collapses upon itself; the energy created triggers the fusion of carbon, oxygen, and nitrogen atoms. From this catastrophe, a new star is born, this time with an interstellar disk. Celestial debris, asteroids, and dust become primitive rings of matter that will soon create planets through accretion.

5000 million years ago: a new milestone. The solar system is born. Planets revolve like in a gigantic carousel around the Sun star. Its rays reach the planet Mercury in three minutes, Venus in six, Mars in twelve, Jupiter in forty-three, Saturn and Neptune in respectively one hour twenty minutes and four hours ten minutes.

4500 million years ago: what is called planet Earth is actually still a protoplanet composed of a vast ocean of lava, a furnace, molten rocks, an infernal blaze where the temperature exceeds 1200 degrees Celsius. In this magma, one encounters atoms of iron Fe, silicon Si, carbon C, and also gases, oxygen O<sub>2</sub>, hydrogen H<sub>2</sub>, nitrogen N<sub>2</sub>, and carbon dioxide CO<sub>2</sub>.

Between -4500 and -4000 million years ago: a significant part of the Earth's crust will soon be covered with liquid water H<sub>2</sub>O. At the moment, the thin film of gas surrounding the planet contains methane CH<sub>4</sub>, ammonia NH<sub>3</sub>, and water H<sub>2</sub>O. After transformation, it will later become the atmosphere of life. Another upheaval occurs in this period: a young planet called Theia, the size of Mars, strikes the Earth at nine miles per second. Upon impact, the two liquefied bodies eject billions of tons of debris into space. Some assemble through accretion and form the Moon. Initially relatively close, I know that it will gradually move away. It will govern the tides of future oceans.

## water



Bing .com, images, create, prompts : à gauche : a meteorite falls into the ocean, oil drops floating under the surface contain DNA molecules / à droite : archaea living near a hydrothermal vent at the bottom of the ocean, watercolor.

3800 million years ago: already 700 million years since the planet formed. The Machine shows me this time a sphere almost covered with water. It comes in part from the condensation of gases from the crust and mantle of the Earth. They escaped and transformed in the atmosphere. Another part was brought by meteorites that collided with the Earth. Temperature, ambient pressure, and force fields have allowed the liquid to be retained, preventing it from being expelled into the void of space. Lava erupting from the ocean floor begins to form islands. We are again in accelerated mode on the clock of time. Some emerged lands join together to form continents, but the atmosphere is still toxic and prevents the emergence of life on Earth. There is no ozone layer yet capable of attenuating ultraviolet rays, nor is there enough oxygen. The atmosphere is still rich in methane  $\text{CH}_4$ , ammonia  $\text{NH}_3$ , and water vapor  $\text{H}_2\text{O}$ . It also contains sulfur compounds and carbon dioxide. The heat is also intense; strong winds, storms, and hurricanes prevail. The gigantic tides generated by the still-close Moon surge onto the lands. Life will have to wait a little longer to settle there, until the satellite moves away, until the waves calm down, until the rotation of the Earth slows down, until the atmosphere becomes enriched with oxygen.

Within the primordial ocean, however, the situation is different. It is the seat of great molecular agitation. A whole prebiotic chemistry develops in

this aqueous matrix of life. Certain chemical reactions are favored by the conditions and the environment. Certain types of molecules multiply, especially the amino acids that are precursors of life. They are the determinants of the future genetic code, capable of perpetuating the transmission of characteristics from one living being to another, enriching them, and making them evolve. These amino acids all have the same generic structure of type  $\text{H}_2\text{N}-\text{CH}(\text{R})-\text{COOH}$ , where the R radical denotes a complementary set of atoms. These building blocks will associate into long chains deployed in three-dimensional space. They will constitute macromolecules called polypeptides, similar to the polymerization of hydrocarbons. The chemical bond between two successive links will be formed by affinity between the CO group of the first link and the NH group of the next one, but all of this I already know perfectly well.

Excerpt from Buffon's work, "Les époques de la Nature" (1778):

As the temperature of the Earth had sufficiently cooled to allow the formation of liquid water droplets, torrents of boiling water must have poured onto the surface of the Earth, flooding and forming the primordial boiling oceans. Oxygen and nitrogen derived from hydrocarbons already present in the atmosphere were carried by these torrential rains, so the oceans and seas, at the time of their first formation, already contained, in solution, the simplest organic compounds.

Excerpt from Charles Darwin's work, much later:

Life appeared in a small warm pond, in which there was a rich broth of organic chemicals, from which the first primitive organism formed after a long period of incubation during geological times.

The Machine reminds me of some reactions preparing for life (prebiotic chemistry):  $\text{C}_1\text{H}_4 + \text{N}_1\text{H}_3 \rightarrow$  hydrogen cyanide  $\text{H}_1\text{C}_1\text{N}_1$  (hydrocyanic acid)  $\times 5 \rightarrow$  adenine  $\text{C}_5\text{H}_5$ ;  $\text{H}_2\text{O}_1 + \text{C}_1\text{H}_4 \rightarrow$  formaldehyde  $\text{C}_1\text{H}_2\text{O}_1$ ;  $(\text{C}_1\text{H}_2\text{O}_1) \times 5 \rightarrow$  ribose  $\text{C}_5\text{H}_{10}\text{O}_5$ , sugar, a component of RNA; formaldehyde  $\text{C}_1\text{H}_2\text{O}_1 +$  hydrogen cyanide  $\text{H}_1\text{C}_1\text{N}_1 +$  water  $\rightarrow$   $\text{C}_2\text{H}_5\text{N}_1\text{O}_2$ , glycine G, an amino acid.

## **evolution**

What is life?



*Time of experience: 0h 10mn.*

Same era. In my mind, everything is happening very quickly. I receive a cascade of small but essential pieces of information, without too much scientific detail, still some raw formulas, just what is necessary to question the meaning of life. The structure of RNA is a chain of nucleotides. Nucleotide = Pentose P composed of one to three phosphate groups PO<sub>4</sub> + Ribose R id C<sub>5</sub>H<sub>10</sub>O<sub>5</sub> + nitrogenous nucleobase of the purine type G Guanine C<sub>5</sub>H<sub>5</sub>N<sub>5</sub>O<sub>1</sub> or A Adenine C<sub>5</sub>H<sub>5</sub>N<sub>5</sub> or of the pyrimidine type C Cytosine C<sub>4</sub>H<sub>5</sub>N<sub>3</sub>O or T Thymine C<sub>5</sub>H<sub>6</sub>N<sub>2</sub>O<sub>2</sub> or U Uracil C<sub>4</sub>H<sub>4</sub>N<sub>2</sub>O<sub>2</sub>. An RNA strand can have around 10 to 10<sup>3</sup> nucleotides. The first world of life consisted of RNA molecules, preceding a more elaborate one with DNA molecules and proteins. Primitive RNAs then performed the two main functions of life, namely the transmission of genetic information and the management of metabolism, exchanges with the environment (such as the absorption or rejection of substances).

Suddenly, Krawn takes over. I have the vague impression of being back in front of my teachers at Ydunea, in high school.

– the chemistry of life uses a great number of atoms, but almost always the same ones, with highly complex spatial arrangements (like the double helix of DNA). It doesn't matter whether the molecules of life appeared spontaneously on our blue Planet, synthesized by storms and lightning, from the light atoms of life N, C, O present in the atmosphere, catalyzed in clays or imported by celestial objects such as meteorites, or in some other way. The result is there. Without a doubt, Joy, in many other corners of our universe or in the infinity of others, similar or different chemical structures may offer a cradle for life, an opportunity, a potential in which consciousness could emerge. All of this can make sense without invoking the hand of God, without questioning the theory of evolution. The latter may appear to humans as a long process, given their scale of time, that of their own lives. We speak of the boring billion years, so named because nothing noteworthy seemed to have happened until - 600 million years ago. Would God have waited so long, would God have procrastinated? If a God had created life, it would have been perfect right away. Why would there have been so many attempts and errors, so many dead ends? There would have been no need for selection. The human genome would have been immediately ideal, no

need for all these redundant sequences in the genome, this accumulation of dormant genes.

– Ignorance, the refusal to question oneself that characterizes most men? Perhaps also the weight of culture? Of course! There are other famous



examples, such as the supposed intervention of gods to explain the construction of the pyramids of Egypt. In general, there is a widespread lack of understanding of true sciences, of the initially surprising effects that can occur with large numbers, how with a simple rule we can explain the development of magnificent fractal shapes in nature, ferns, blooming flowers, how even a tiny cause can trigger a catastrophe. Plants and animals engage in a real struggle for life, they want to survive at all costs.

Bing.com / create, prompt: RNA and virus.

Some plants manage to germinate and grow in the most unlikely places, crevices in rocks without a real nutrient base, cracks in recently solidified lava flows. The fact that life never gives up, the bush of species that are born and die, tenacity, perseverance, flexibility, resistance, the capacity for adaptation and imagination common to all living species, from the humblest forms of life like viruses, bacteria, archaea to the most complex, all of this has always impressed humans. Convinced that they would never succeed in reaching the truth, they have imagined Gods as a consolation. But we can discuss human beliefs in more detail later. For now, the Machine must move forward, the path to man is still long. Krawn fell silent.

The Machine now resumes its presentation of the evolution of life. I see amino acids RNA duplicating, reproducing identically. After multiple contortions, macromolecular chains form a lipid sac, a protective protein shell that houses the RNA. One of them has a regular polyhedral shape, an icosahedron with twenty identical triangular faces. It is a precursor virus. Subsequently, life will create many types of viruses, ranging from tiny ones with only a few genes to larger ones with a thousand genes, as is the case for some present on my blue planet in the early third millennium. How big are they? Very small, ranging from ten to a few hundred nanometers (nanometer, one billionth of a meter, the order of magnitude of interatomic distances). Viruses constitute a tremendous reservoir of genetic diversity with promising

but also formidable potential. Some are made up of single-stranded RNA, while others have double-stranded DNA adopting linear or circular forms. After viruses, the experiments of evolution continue to unfold.

I see a prototype of a cell membrane; it opens and closes to allow water to enter and trap it. It is a proto mouth that captures, filters, and utilizes the nutrients present in the ocean. It expels the remaining liquid that has become useless at another point on the membrane, a proto chiasm. We are witnessing a protocell, the germ of unicellular life. The conquest or colonization of the oceans by life has begun. These membranes are like fortification walls where the organization of life can take place, safely sheltered from the outside. -3800 to -3500 million years ago: this period marks the appearance of the first non-mobile living cells (without flagella or cilia), the first stromatolites, oxygen-free photosynthesis, and the emergence of oxygen (O<sub>2</sub>).

By -3800 million years ago, anaerobic bacteria already existed. They cannot tolerate the presence of oxygen; they are prokaryotes, cells without a nucleus. The Machine sends me near an underwater chimney that has pierced the ocean floor, a result of volcanic activity. Small unicellular beings, bacteria, live in this location and use geothermal energy to break down molecules of sulfuric acid H<sub>2</sub>SO<sub>4</sub>. The nucleic acid carrying the genetic heritage is simply separated from the external environment by the cell membrane. I see a multitude of living cells. Their reproduction always occurs through the direct separation of a mother cell into two daughter cells with identical genomes. Without flagella or cilia, they do not move voluntarily but are carried along by the movements of the nourishing ocean. However, in some places, they have accumulated without true functional collaboration (it will take until -600 million years ago for multicellular beings to appear). These numerous cells, algae or bacteria, form layers that trap mineral particles; calcium carbonate CaCO<sub>3</sub> precipitates within the living matter itself. A shell is formed, it hardens. These are the first stromatolites, a form of life that still existed on my blue planet before the Apocalypse.

-2400 million years ago: this marks the beginning of the Great Oxidation, a period during which photosynthesis with oxygen is invented. Tiny cyanobacteria succeed in breaking down water molecules H<sub>2</sub>O just below the ocean surface using only solar radiation energy, according to the reaction: carbon C + water H<sub>2</sub>O + solar radiation → glucose + gaseous oxygen O<sub>2</sub>. The released oxygen oxidizes iron atoms. Rust particles accumulate in large numbers on the ocean floor. Another consequence is

that oxygen emerges and mixes with the atmosphere at the surface, although not significantly enriching it yet, enough for life on land to develop. It is only from 850 million years ago that the situation will change. Between -550 million years ago and today, the oxygen level in the air fluctuates between 15% and 35% (reaching a maximum of 35% around -300 million years ago with the appearance of insects, amphibians, and large ferns). At the beginning of the third millennium, it will be 21%.

Krawn continues:

– Because all contemporary living beings have thirty-four proteins and some RNA in common, a concept of Last Universal Common Ancestor (LUCA) has been imagined. LUCA is believed to have emerged between -3800 and -3500 million years ago within populations of individualized protocells, possessing a genome of a few hundred to over a thousand genes enclosed within a protein membrane; this was before the Great Oxidation. By comparing the genes shared among current living beings, geneticists have been able to determine which genes must have already been present in LUCA. Among these genes are those involved in the construction of cell membranes in contemporary living beings. This observation has led to the belief that LUCA had a type of membrane. In addition to RNA, LUCA is also composed of DNA molecules. After a long process of trial and error, Nature invented and retained the configuration of double-stranded DNA as particularly promising. This balance between stability (better than RNA) and evolutionary potential will now become the norm.

How did the combination of so many genes occur to give rise to LUCA? It probably happened through the direct combination of genetic material from one cell with others, in a horizontal manner as biologists say, most likely with the involvement of viruses that have an extraordinary capacity for mutation and adaptation. LUCA is an evolution's winning bet; it possesses enormous diversification potential. After that, it will be a matter of complexity, exploiting previous functionalities in an adaptive and naturally selective context. In this sense, LUCA is a very important step, an essential milestone. For all its descendants, the rule will be the same: growth, multiplication, reproduction utilizing the specific properties of nucleic acid strands, such as duplication, the ability to copy, transport genome information, command the synthesis of life's proteins, and consequently regulate the entire cellular machinery.

The struggle for life will continue as it has since the very beginning: devouring the weaker, acquiring their potential if possible, combining in a single being the best that life has created in the predator's immediate environment. The absorption of efficient bacteria in transforming glucose into ATP (Adenosine Triphosphate nucleotide used, among other things, for RNA synthesis) will result in the formation of mitochondria, a type of ovoid intracellular organelles that act as powerhouses, providing the necessary energy for cell function. Similarly, bacteria specialized in photosynthesis, after being absorbed by other cells, will become the chloroplasts of plants. The intelligent association of various functionalities developed initially by distinct beings will create increasingly complex forms of life, all within an adaptive context punctuated by mutations and selection.

In general, genomes will expand over time: 500 to 3,000 genes in archaea, 700 to 4,000 genes for amoebas and bacteria, 2 to 6,000 genes for eukaryotes, including humans.

*I am only Joy.*

Long before the apocalypse occurred, scientists had convinced themselves that eventually, they would come to know what had really happened by establishing phylogenetic trees. It was nothing more than a grand police investigation. While some found it an exciting reconstruction, it was actually a systematic process, involving the provision of numerous materials and doctoral students. Unraveling the complexity with a few key rules: the genetic code, numbers. The successes of physics, supported by mathematics, had taught humans that it was now within their reach. Progress accelerated with the advent of artificial intelligence, which began to autonomously test the infinite hypotheses leading to the synthesis of a molecule of life, a membrane, a virus, a bacterium, a multicellular organism.

These sensational advancements achieved on the eve of the apocalyptic downfall of Western civilization did not, however, settle the question of the very origin of life. To assign the label of "living being" to LUCA, yes, for fear of going further back in time, into that precursor world where the first RNA molecules began inventing life. From that distant time, living fossils remain, what are called viroids; they have neither envelope nor capsid; they are aggressive enough as free RNA molecules to be pathogenic. How can we deny them the qualification of life on the pretext that they must use external molecular structures to produce proteins? Viroids could very well have been the beginning of life.

*The procession of images and animations continues.*

Around -2000 million years ago: the period of the appearance of eukaryotes, still debated, could well date back more than 2000 million years. In contrast to prokaryotes, the genetic material in eukaryotes, instead of being directly immersed in the cytoplasm, concentrates and is safeguarded within a cell nucleus delimited by a membrane. Soon, the separation between fauna and flora will occur among them. Attempts at multicellular organisms are also noted. Flourishing biological activity then develops within the Precambrian oceans. Around -1500 million years ago: primitive cells with nuclei ingest cyanobacteria. Chloroplasts, which have already been mentioned, appear within their bodies, organelles or vesicles on the micron scale capable of carrying out photosynthesis.

Another innovation will occur with the emergence of genetic mixing within the same species, combining the genomes of two different parents. This will result in an increased rate of evolution. From now on, a slightly different offspring will be possible with each generation. Diversity will therefore accelerate. A species will be considered new when it can no longer reproduce with the parent strain.

Around -1200 million years ago: I see multicellular red algae. Cells that were more or less unaware of each other now start using a protein, collagen, to agglutinate. They form colonies within which they can cooperate, organize, and specialize. Multicellular organisms will begin to appear. Evolution will provide them with specific organs serving all the constituent cells, as well as an increasingly efficient communication system between them.

**so many attempts.**

*I am Joy, attending the continuation of the presentation.*

From -650 million years ago: I see the first proto animals with soft bodies. They still need to directly feed through cell membranes in contact with the external environment. Around -650 million years ago, life is still exclusively aquatic. At the bottom of the waters, primitive animals are simply placed or attached. They have little ability to move. As invertebrates, they lack internal organs and vascular, digestive, or nervous systems; they are simple cell clusters that filter water to extract nutrients. The sponge is probably one of the first living animals. In it, information circulates from one end to the other

through chemical means, from cell to cell, even if these cells are not yet differentiated; neurons do not exist yet.

Succeeding sponges are radial symmetrical jellyfish. They have already developed a diffuse nervous system, but there is still no particularly privileged area for information exchange and processing. The specialization of certain cells into neurons aims to improve and facilitate information transmission and communication from one end of the organism to another. This results in increased responsiveness, providing an obvious evolutionary advantage. The predator will seize its prey more quickly.

The cell body of a neuron contains the nucleus but is also extended by thin and numerous branches called dendrites (D), as well as a much longer branching called the axon (A). The diameter of the axon can vary from one to fifteen microns ( $10^{-6}$  m). Its length can sometimes reach a few tens of centimeters. At its end, there is a cluster of synaptic buttons (S). The signal or nerve impulse transmitted along the axons is of an electrical nature, but at the level of synapses, a chemical process comes into play to pass the information from the end of the buttons (S) of a given neuron to the dendrites (D) of the next neuron. The transmission is therefore predominantly electrochemical. More precisely, when a neuron is at rest, the membrane of the axon (A) is positively charged on the outside and negatively charged on the inside. The sudden entry of  $\text{Na}^+$  ions to the inside leads to a brief disturbance of charges. Other ions are also involved, those present in the initial aqueous bath in which life originated. The electrical disturbance then propagates along the axon (A). Upon reaching the end, it triggers the release of a neurotransmitter, a chemical substance contained in vesicles, at the synapse (S). This substance, in turn, propagates the disturbance to the opposing dendrite (D). Once the crossing is complete, the electrical disturbance resumes to propagate along the new neuron. Since only synapses contain vesicles, the signal can only propagate in one direction.

The Machine also reminds me that even in humble sponges, the genome already contained some of the genes involved in synaptic function. Jellyfish, hydras, and sea anemones took advantage of this. Their nervous system is a uniform network of neurons without specific preferential areas. I see that of the starfish: it is very simple, organized radially with converging axes towards the center occupied by a ring. From each axis, branches extend, mostly directed towards the epidermis. Neurons are distributed fairly evenly along this network, without any particular clusters as observed later in more evolved animals, which will be called ganglia.

These ganglia will appear particularly in elongated animals with bilateral symmetry, in the form of specialized clusters distributed along the main axis. In insects, there is a cerebral ganglion, as well as ganglia dedicated to the thorax and abdomen. A new theme emerges with the appearance of specialized organs in multicellular organisms; it occurs in connection with the development of the nervous system. Optimal development of a species or even simply survival requires a deeper understanding of the natural environment in which it lives. The ability to identify and predict the behavior of other life forms within its own biotope is essential for survival. It is imperative to know who is interesting, prey, or, conversely, dangerous, a predator.

The species must be able to identify other living beings that may enter competition and those that may cooperate, as well as recognize sources of useful energy for metabolism in the inanimate environment. This will lead to the development of sensory organs. They will be specialized, among other things, in receiving and emitting physical signals such as sound or light vibrations. Clusters of neurons in ganglia will facilitate the processing of received information and subsequently the selection of an appropriate reaction.

In the case of the simplest nervous systems, the type of coordination and reactions is direct, without intermediaries: when a sensory neuron located in the epidermis receives stimulation, it immediately reacts through its terminals, which act on cells responsible for motor functions (extension, folding, opening, closing). In other words, the sensory neuron is also motor. At a slightly more advanced stage, this is already the case for jellyfish, where several sensory neurons can associate their responses and act together on motor neurons; the action is coordinated. Later on, evolution will involve other qualified neurons, known as intermediaries. A response to a global excitation of the dermis, the outer envelope of the animal, can then be developed. Information processing will be more efficient. The success of this evolutionary strategy will lead to the increasingly significant development of specialized ganglia until the appearance of a true brain in the anterior part.

650 million years ago: sponges.

600 million years ago: cnidarians (still exist).

*I am Joy.*

542 million years ago : Nautilus sends me to the aftermath of an ice age. The southern hemisphere is a large, continuous, arid continent with a hot



climate called Proto-Gondwana. In the northern hemisphere, there is a very large archipelago divided into three main blocks: Laurentia (future North America, Greenland, and Scotland), Baltica, and Siberia. These entities are separated by oceans in which life explodes because the temperature is around twenty-five degrees Celsius, and the oxygen gas content (O<sub>2</sub>) is similar to that of our world today. Life takes a new turn, diversification advances by leaps and bounds. Many specialized organs appear. All the complexity accumulated in the genetic material through crossbreeding and reactions to the environment is expressed, initiating the lineages of future major groups of living beings. In addition to the soft forms of the largest organisms, other more complex ones must now be added. Bilateral symmetry appears, and evolution invents shells, a kind of exoskeleton that reinforces an organism with an external armor.

In this evolutionary burst, over a hundred genera emerge: ammonites, trilobites, sponges, cnidarians, anomalocaris. In the case of arthropods, these are organisms with an exoskeleton, but other animals have retained a soft body. Among them, a small marine worm just over an inch long will develop an internal cord to reinforce itself, the ancestor of vertebral columns; it is called Pikaia. Later, a band of neural tissue along the back of the embryo will thicken, and at the end, a protrusion will appear, marking the beginning of cephalization. In the privileged anterior zone, a high concentration of neurons will appear, as in leeches; it is a proto brain.

520 million years ago: the journey continues. A nautilus rises from the depths to the surface. It is cream beige and reddish-brown, and its compartmentalized shell spirals following the golden ratio of 1.618. With each lunar month, the animal adds a new compartment to its shell.

510 million years ago : priapulid, a marine worm with an extendable proboscis (still exists).

500 million years ago: Nautilus injects me with an aquatic scene: I see a swarm of plankton, worms, sponges, mollusks, trilobites, arthropods. In beings with cephalization, the primitive brain is still a cluster of cells that facilitate immediate survival by regulating functions such as respiration, heart rate, or mobility; the latter increases the chances of capturing food. From the bestiary of that time, the Machine chooses to show me Tokumnia Katalapsis. It is an ancestor of lobsters, with a four-inch-long segmented central body. It moves on the ocean floor using robust legs; its body is entirely protected by a blue-pink chitin shell, a compound made up of a molecule from the carbohydrate family, with carbon, nitrogen, and oxygen atoms in the

proportion C8H13N1O5. In insects, this will later become the main constituent of the integument that protects the animal from the outside. Further on, I also see a kind of shrimp, seven to eight centimeters long, which, through its semi-transparent body, reveals a heart and blood vessels. Feeding on plankton, it is itself coveted by a brown cephalopod that will soon swallow it.

500 million years ago: the appearance of chordates.

Around 500 to 440 million years ago: it is the time of the GOBE or Great Ordovician Biodiversification Event. It is an explosive diversification of species. The oceans will soon teem with life: plankton, corals, cephalopods, ammonites, fish, arthropods.

At 467 million years ago, some creatures have grown considerably, like this five-and-a-half-foot sea scorpion that roams in search of food. It is one of the most ferocious predators of that time. It is also protected by an exoskeleton.

At 450 million years ago, Nautilus shows me many fish, including placoderms with powerful jaws; they are protected by a suit of articulated plates. Life is still exclusively marine, with nothing on land, neither plants nor animals...

In the ocean, trilobites, ranging from a few inches in size, are one of the dominant species. They have been living for about a hundred million years. They are accompanied by orthocerids, nautiloid-like creatures that can reach up to a dozen feet long. In order to strengthen the growing structure of these creatures, in addition to the external armor adopted by some species, life continues to explore internal reinforcement with cartilaginous structures. Progress has been made in this regard, particularly among the Astrapis, which are the size of a human hand. Various solutions for locomotion have already been attempted and transformed. The initial method used by soft-bodied animals, which involved the repeated inflation and deflation of the entire body for propulsion, has been supplemented by other solutions: legs used by arthropods to move on the ocean floor, tails and fins used by fish to swim through water more quickly and maneuver.

Function develops the proto-organ, encouraged by a positive conscious experience. The more it is used, the more it develops, and if natural selection retains it, then it is a success. A simple protrusion, initially due to mere chance, finds utility in mobility, allowing the animal to feed better, and that is enough to select the anomaly that gradually becomes the norm. The protrusion grows until it becomes a leg or fin.

At 480 MYA: emergence of terrestrial plants. The period from -440 to -360 MYA begins with a tragedy. For the profusion of marine animal forms evolving in the oceans, death suddenly arrives from space. Around -440 MYA, intense gamma radiation bombards the blue planet; it is caused by the explosion of a dying star as a supernova. The ozone layer of the atmosphere, which had been blocking ultraviolet rays, is partially destroyed. The gases N<sub>2</sub> and O<sub>2</sub> transform into a brownish gas N<sub>1</sub>O<sub>2</sub> that envelops the planet, obstructing the sunlight. This phenomenon leads to a drop in temperature, causing glaciation. As a result, the sea level drops by several tens of meters. Species adapted to the shallow depths that are drying up disappear, especially some plankton and larvae that form the base of the food chain. Approximately fifty to sixty percent of marine species perish, including many trilobites. Only a few species survive in the deep sea. On land, there are a few exceptions. For instance, around -410 MYA, an insect like a modern grasshopper evolves on the coast, which is beginning to be colonized by mosses derived from green algae and lichens. The consciousness continues to grow.

At 470 MYA: crinoids (still exist).

At 410 MYA: lungfish (still exist). Around -400 MYA, insects, seeds, and sarcopterygians (with lungs) appear.

At 380 MYA: sharks.

At 365 MYA: favored by the return of a warm and humid climate, life has already resumed for several tens of millions of years. It timidly emerges from the water in the form of small terrestrial arthropods, which are descendants of marine arthropods, millipedes, spiders, and insects. In crawling populations, some individuals make jumps. They leap to escape their predators, move faster, reach higher, or catch prey more quickly. Lighter and more agile, with increasingly larger jumps leading to the first flights, wings appear. Just as life ventured out of water to conquer the land, it now launches itself to conquer the sky. Much later, with humans, life will depart for space, and intelligence will adapt to the void.

For now, at shallow depths, corals and mollusks proliferate. Fish continue to evolve, especially in coastal marshes. There are protopterus fish that have been practicing walking on the seafloor like tetrapods for some time now. The accumulated plant debris along the seashore, such as wood, fallen leaves, decaying vegetation, provide a favorable ecosystem for this new adventure. These descendants of lobe-finned fish have two pairs of proto-

limb fins that allow them to paddle through the marshes. They are vertebrates and already have pulmonary respiration. Half-immersed, they move through the shallow, warm, and oxygen-poor saltwater of coastal marshes. To overcome this challenge, life has endowed them with lungs that allow them to extract oxygen from the air at the surface since the water's oxygen is no longer sufficient. It is a semi-aquatic life that precedes terrestrial



life. Sometimes measuring over a meter long, they raise their broad, flattened heads out of the water to breathe. They would like to make it onto the shore, but their front limbs do not allow it; a little more effort is needed! Stronger limbs and a reinforced thoracic cage with a rudimentary sternum begin to appear. Thanks to such innovations, some will finally succeed in overcoming the handicap of body weight that

water does not compensate for.

Bing.com / create, prompt: 360 million years ago, Carboniferous age, a lizard like tetrapod sticks its head out of the water in a swamp, very tall trees and ferns in the background, wide view, realistic.

Around 360 million years ago, Ichthyostega and Tiktaalik achieved this feat. Once on land, tetrapods diversified into amphibians, reptiles, dinosaurs, birds, and mammals. All of them have well-formed vertebrae and fingers at the ends of their limbs.

365 million years ago: appearance of tetrapods.

360 million years ago: appearance of amphibians.

350 million years ago: horseshoe crabs (still exist).

330 million years ago: appearance of amniotes.

320 million years ago: the drifting continents merged into a single supercontinent, Pangaea. The Machine presents to me a vast equatorial forest. The climate there is hot and humid, of a tropical type. There are numerous swamps and lakes, and the flora is diverse. Near the water, you can find giant horsetails from the family of horsetails, large lycophytes like lepidodendrons and sigillarias, cordaites with broad leaves, large conifer-like trees with tree ferns at their feet. Flowering plants are not yet present, but the accumulated plant debris is favorable for seed germination. They will transform into coal, which will fuel the industrial revolution of the nineteenth

century in the West.

The large fauna consists of half arthropods and the rest are vertebrate tetrapods that still depend on water for reproduction. They cannot venture too far on land; some are amphibians. In the water, there are also cartilaginous fishes and numerous bivalve mollusks settled on the seabed. The air is frequented by numerous flying insects, including giant dragonflies. Around 315 million years ago, a new development is noted: Hylonomus Lyelli, a reptile that lays amniotic eggs. This decisive feature allows it to free itself from aquatic life. The shell keeps the embryo in a liquid environment that replaces water, eliminating the risk of drying out! It is a success, and numerous species appear as a result. Amniotes will later differentiate into synapsids, which will give rise to mammals, and sauropsids, which in turn will give birth to reptiles and birds.

310 million years ago: appearance of synapsids and sauropsids.

300 million years ago: dragonflies.

270 million years ago: ginkgo biloba (still exists).

## **Sapiens**

*I am Joy, immersion time: 0h 17min.*

The Machine continues to feed me its torrent of images, embedding them in me. Krawn is still by my side, Aunt Jill and Chang are supervising my journey through time. Around 250 million years ago: in future Siberia, massive volcanic eruptions have just occurred. As a result, about ninety percent of marine species and seventy percent of terrestrial species will be permanently eliminated. On land, a few reptiles survive by hiding underground. Among these species, it is noticeable that the so-called paleo-mammalian brain already has specialized areas responsible for processing emotional behaviors, combativeness, sexuality, memory, and sense of smell. From 240 to 150 million years ago: the climatic conditions become favorable again. Vegetation is abundant; there are conifers with needle-shaped leaves grouped in tufts, araucarias, ferns, and ginkgoes at middle latitudes. Dinosaurs and mammals appear, with the latter feeding on seeds and small insects. Dinosaurs are either herbivores or carnivores; for the latter, the much smaller mammals become prey.

The gallery of species appearances continues:

240 million years ago: squamates (species that shed their skin).

225 million years ago: appearance of dinosaurs and mammals.

220 million years ago: turtles.

205 million years ago: crocodiles.

200 million years ago: in certain species, the appearance of a neocortex capable of supporting higher cognitive functions is observed. Later, it will become the seat of language and structured thought. In contemporary humans, it represents almost eighty percent of the brain.

165 million years ago: appearance of lizards and snakes (derived from squamates).

160 million years ago: appearance of eutherians (small placental and arboreal mammals with improved grasping abilities).

150 million years ago: archaeopteryx, pterodactyl, sun dinosaur, stegosaurus, diplodocus... appearance of birds.

140 million years ago: marsupials begin to appear.

135 million years ago: flowering plants.

Around 127 million years ago, Pangaea began to break apart. Dinosaurs were still the dominant predators, and mammals were their prey. In the future Iberian Peninsula, specifically in the province of Cuenca, a tropical climate prevailed. A small creature, covered in fur and only a few inches long at most, was on alert. It was hiding under a large fern leaf. Predators lurked nearby, but it needed to eat. It briefly emerged from its hiding place, moving its head from side to side. Fearful, with an anxious look in its eyes, it stopped and then continued, when suddenly a flying reptile appeared. It swooped down on it. The terrified little creature tucked its head into its neck, its fur standing on end, but it was already too late. The pterosaur grabbed it with its claws and flew off into the sky. The life of the small mammal ended there, along with the lives of its offspring.

Not far away, a cousin had better luck. It was Spinolestes, another ancestor of large mammals. For now, with a length of about ten inches and weighing fifty to seventy grams, it resembled a shrew or a rat. The spines scattered across its fur made it a rather indigestible prey for birds and reptiles. Its elongated snout also indicated well-developed olfactory abilities. From its lineage would come marsupials with abdominal pouches like kangaroos and monotremes that lay eggs and nurse their young.

110 million years ago: Bees appeared on the China-Kazakhstan border,

and in the Tian Shan mountains, there were forests of wild apple trees over thirty feet tall.

66 million years ago: A large asteroid, with a diameter of about six miles, crashed into the Gulf of Mexico. The resulting shockwave was massive, causing a rain of debris to fall on the surrounding regions. The released energy raised temperatures to hundreds of degrees, creating a scorching blast and displacing water from the crater, which returned as huge waves and a tsunami. As a long-term consequence, ash clouds obscured the sun and significantly lowered the temperature. Other catastrophic factors combined, including significant volcanic activity in other parts of the world.



Bing.com / create, prompt: a dinosaur looks at a meteorite crossing the sky. Prehistoric birds are flying, high details, dramatic.

With the disappearance of a large portion of vegetation, the largest animals could no longer find sufficient food. In particular, the dinosaur food chain was destroyed, and their low reproduction rate worked against them, with only one generation every ten years. For them, it was the end. While they struggled desperately to survive, smaller and less demanding species fared better. This was the case for mammals, which reproduced more rapidly. Not yet highly specialized and more adaptable to the abruptly changing conditions, they knew how to feed on insects, larvae, dead plants, carrion, and seeds. Moreover, they would soon be rid of the dinosaurs, an opportunity to seize!

A new group of mammals called placental mammals would take advantage of this. They would give rise to thousands of contemporary species in my world, Joy, ranging from whales, giraffes, lions, and wolves to rats, bats, and of course, primates. Unlike monotremes (such as the platypus) that lay eggs or marsupials (opossum, kangaroo) that give birth to larvae, female placental mammals develop an almost viable individual inside a uterus. Soon, it will be the rise of humans...

## **primates**

*I am Joy, continuing the story.*

This rapid overview of evolution should make my head spin. One hundred thousand years still mean something to humans. A civilization can last thousands of years, and the life expectancy of Western peoples was around seventy-five to eighty-five years before the great catastrophe. However, we are still far from genetic time, the time required for natural mutations to induce observable changes in the tree of life. The time interval between two significant modifications marking a notable evolutionary leap is on the order of a few million years.

55 million years ago: It was hot, and a large portion of the Earth's land was covered in tropical forests. Insects multiplied, providing abundant food for all kinds of primitive primates, in addition to seeds. They spread all over the Earth, especially in what would later become North Africa or even Germany. Some, like tarsiers, lived at night because it was safer to escape predators. I see small primates, about half a foot long excluding the tail. Adapting to the nocturnal life, their heads became almost as large as their bodies. Their enormous eyes shone in the night but remained fixed in their sockets. In compensation, their heads could rotate 180 degrees, and they could emit and perceive ultrasounds, just like nocturnal bats would do later. Insectivores, they also occasionally fed on eggs.

Quintessence sends me to central China this time, where I catch a glimpse of *Archicebus Achilles*. It lives in trees, and its body is truly tiny: barely three inches long, with a tail twice as long, and weighing only about twenty grams. Its long legs are equipped with a large opposable toe that allows it to cling to branches, jump from tree to tree, and agilely climb and move quickly on a trunk when a predator threatens it. It is busy feasting on insects. This animal could very well be a common ancestor of tarsiers (with a similar diet) and humans.

*47 million years ago*

The planet is peaceful. Africa and America have now separated, paving the way for distinct evolutions by continents. I am transported to Messen near Darmstadt in what will become future Germany. It is located ten degrees of latitude further south than at the beginning of the third millennium. The



climate there is hot, subtropical, with an oxygen level in the atmosphere that has dropped to around twenty-six percent. In the very humid local environment, crocodilians and quantities of fish live. Insects are also present in large numbers and, along with seeds, they constitute the main food source for the diversifying and growing mammals. Their size is about one foot, two for a leptictidium, one and a half for an anteater, a little over three for lemurs that feed on fruits and leaves.

The Machine also shows me Ilda, one of these lemurs with big eyes. With them, monkeys and humans are on the right track because selection has operated at the gene level that defines the relative arrangement of the eyes. The gradual forward movement gives them a clear advantage over animals that still have lateral eyes. The perception of two images from two different angles creates a kind of stereoscopic effect that enhances the precision of real-time tracking of manual work performed by the front paws. Vision and grasping, soon it will become even more decisive when the arms are extended with tools. Gain and loss, the correlative flattening of the snout leads to a decrease in olfactory capabilities compared to mammalian cousins that have retained an elongated snout. These gradually forgotten capabilities in terms of applicability could be awakened, but, it is not necessary because vision compensates for them to a large extent. With it, the front limbs become more and more efficient, to the point where it will be a waste to use them only for movement. The hind legs alone could well suffice for this function; that's what will happen with the invention of bipedalism. Too bad for the intelligent dolphins too, but they preferred to return to the marine environment!

## **species Homo**

*I am Joy, from Dome Ocean, Nemo Lab, time of experience: 0h 22mn. It's April, the nineteenth of the year 2035. Immersion at - 40 million years ago, the presentation continues. Primates, driven out of the northern hemisphere due to cooling, continue their evolution in areas still under a tropical climate.*

34 million years ago: in Fayoum, a region in Egypt, we encounter monkeys.

20 million years ago: cercopithecoid primates are already numerous and diverse on Earth, settled in southern Europe, China, and the eastern coast of Africa. They are the ancestors of tail monkeys, future baboons, and

macaques. Quadrupeds on the ground, they also know how to jump from branch to branch. It is then that a six thousand four-hundred-kilometer-long fault opens near the eastern coast of Africa, the Great Rift. One consequence of this geological event is that the humid air coming from the Indian Ocean has increasing difficulty crossing this obstacle; it remains blocked by the mountain barrier. New environments appear, arid savannas where trees are less common. Tree-dwelling monkeys must increasingly descend to the ground. They will pave the way for proto humans.

12 to - 14 million years ago: this period is marked by the separation of the Asian orangutan lineage. They have only three percent difference in genetic material from the human lineage.

10 to - 11 million years ago: this time, it is the gorillas that separate into a particular branch; they too have only two to three percent gene difference from humans.

7 million years ago: chimpanzees and bonobos also leave the lineage that will lead to humans. While gorillas and chimpanzees are still more often quadrupedal than bipedal, chimpanzees now



know how to use pieces of wood or stones to crack nuts. They are also capable of imitation, allowing for some transmission of know-how. Each individual shows increasing interest in its fellow beings, attempting to understand what the other feels; at the same time, they learn to lie and conceal their intentions. They argue and reconcile, typical monkey squabbles! The brain progresses, consuming more and more energy; it no longer functions solely based on external stimuli (reptilian brain) but begins to do so autonomously. Its structure becomes more complex, and a hierarchy in tasks is observed. At the lower levels, it is simply a direct processing of information from the senses, while at the higher levels, abstraction already exists.

Bing.com / create, prompt: African savannah, at the edge of a river, an australopithecus africanus beats pebbles against each other, in the distance a herd of antelopes

7 to - 4.2 million years ago: this is the time of the proto-humans. We are in Africa, and evolution continues its path, heralding the arrival of humans. Among the bipeds, the Machine presents me with Toumai at - 6.7 million

years ago, Ororin at - 6 million years ago, Ardipithecus between - 5.1 and - 4.4 million years ago, as well as many other beings, all noticeably smaller in size and cranial volume than modern humans.

4.1 million years ago: Australopithecines appear in Africa, such as Anamensis, Afarensis, and others. They will live there until around - 2.5 million years ago. Their habitat is a wooded environment near scattered water sources in the savanna. Their cranial capacity is 400 cm<sup>3</sup>, quite close to that of chimpanzees. Standing 3.5 to 4.3 feet tall and weighing thirty to forty-five kilograms, they do not yet have articulated language. Herbivores, they seem to be the first hominids to show pronounced bipedalism; they move on the ground using only their hind limbs, although their ability to move in trees is still excellent. This is necessary for protection against predators and gathering fruits. They live in communities of a few dozen individuals. With their front limbs, they use sticks to dig out insects or tubers; occasionally, they also use tools to cut up carrion, not tools shaped through a repeated process, just naturally fractured river pebbles, what we call choppers.

3 to 1 million years ago: still in East Africa, two species coexist, the Paranthropus and the genus called Homo. Both have acquired a more stable bipedalism and abandoned arboreal life. They live in grassy savanna areas that have gradually expanded at the expense of forests due to climate change. Grasses grow there.

2.6 to 2.3 million years ago: tools are already found. Homo habilis feeds on fruits, small animals, but also carrion of larger species. It has a height of four to five feet and weighs thirty to forty kilograms; its hairiness has considerably diminished. The brain has enlarged to reach a volume of about 600 cm<sup>3</sup>. The presence of a specific area called Broca's area confirms the ability for primitive articulate language. It walks almost perfectly upright. Although its tools made of flaked stone are still simple and coarse, they are deliberately and systematically shaped to improve their sharpness. The encephalization quotient (brain weight/body weight ratio 2/3) continues to increase.

1.5 million years ago: Homo ergaster and Homo erectus live in East Africa, whose footprints already resemble ours. They are long-bodied men, typically five and a half feet tall, seventy kilograms in weight, and 800 cm<sup>3</sup> brain volume. They can run. The simple chopper made of flaked pebble has evolved well. Now, the main tool for these men is the biface in the form of an arrowhead or a knife. Not only does the new symmetrical tool allow slicing, but it can now penetrate flesh. The stone used to shape it is no longer

random but chosen for its hardness and aptitude for shaping. It should be noted that this tool will only appear in Europe later; for now, in East Africa, man can compete with predators. If he can't run as fast as them, he can shoot arrows. No longer satisfied with scavenging, he can hunt live prey. He establishes ground camps, no longer just relying on natural shelters. With their tools and weapons, men become more confident and dare to go further and even leave Africa, some heading to the Near East and Europe, where they will be found settled permanently from around 750,000 years ago. Other humans will choose to go even further, towards Asia.

*I am Joy, Dome Ocean, Nemo Lab, April, nineteenth day of the year 2035, immersion in the last ice age.*

Krawn takes over from Nautilus. He talks to me, or at least that's the impression I have. - We are entering the time of the men with whom you will soon share some moments of life. At the onset of the last glaciation, Homo sapiens neanderthalensis, also known as ancient Homo sapiens, had already been living in Europe for tens and tens of thousands of years, perhaps since around 250,000 or even 300,000 years ago. Other men had preceded them on the continent; some had already settled on both sides of the mountain massif of the Pyrenees, near Burgos in Spain or Tautavel in France, elsewhere in Germany or Italy. Their presence on European soil is attested to as early as 400,000 years ago. At the Mediterranean coast, on the border of France and Italy, at that time, pre-Neanderthal Homo erectus already mastered fire. However, the expansion of these men to the north was limited by the five major glaciation episodes that occurred regularly from 500,000 years BP (Before Present time). Therefore, it was long after them that Neanderthal man occupied Europe. Like others, after reaching high altitudes and facing the cold, they had to retreat southward. They followed other animals, such as mammoths, reindeer, and bison. The migration routes of these animals were disrupted or sometimes blocked by the ice. These routes were a prime hunting ground where abundant food could be found. Around 43,000 years BP, the most northern part of Western Europe was covered with an ice cap that extended to the south of England. Below that was the tundra, arid and icy landscapes in winter, populated by a few rare animals and humans; further south, there were steppes. In southeastern France, the glaciers of the Alpine massif extended to the vicinity of the two future Roman cities of Lyon and Vienne. They fed the great Rhône River, which bordered them to the west and flowed southward to the Mediterranean Sea two hundred kilometers

further south. South of Lyon, the Rhône Valley becomes relatively narrow until the forty-fifth parallel, then widens significantly into what will become Provence. To the east, the Alpine foothills limited human settlement, but between them and the left bank of the Rhône, there were areas conducive to the life of mammals.

The south of France is a kind of mosaic of microclimates. In the sheltered valleys of Luberon, southern Ardèche, or Gard, people live. They can take shelter from the winds and severe cold in numerous natural caves. The fauna is abundant, with a few mammoths and woolly rhinoceros, herds of reindeer, deer, aurochs, horses, and a variety of small animals. The Rhône Valley is a steppe zone where people have settled. The landscapes are not heavily wooded, but there are large meadows where herds of herbivores graze, serving as prey for humans and for lions, leopards, and other carnivores. In some places, there are groves of Scots pines, birches, willows, and all kinds of bushes, especially around water sources (this vegetation disappears and reappears with climatic oscillations). The average temperature is around eight to nine degrees during the day, and at the height of winter nights, it can reach minus twenty.

Currently, ancient and modern humans still coexist (Mandrin cave, Montélimar, France). For tens of thousands of years, waves of humans from Africa have been crossing the Middle East and heading westward to Europe. They arrive from the north, from the Black Sea and the Caspian Sea, and from the south, following the shores of the Mediterranean Sea. During these migrations, some rare interbreeding occurred between the ancient humans and the modern ones. Traces of this can still be found among Europeans and their descendants in America before the great cataclysm that marked the end of the West. A few percent of their genetic heritage appeared to be inherited from Neanderthals (between 1.5 and 2.9 depending on the individuals). Overall, about one-third of the genome of these ancient Neanderthal humans was represented when considering all Europeans. Around 43,000 years BP (Before Present), in the southern part of future France, ancient humans, namely *Homo sapiens Neanderthalensis*, and the new ones, *Homo Sapiens Sapiens* (the modern humans), still coexist. They all live in clans of a few dozen individuals, often near slopes or natural rock shelters, near a watercourse. They establish camps, one main camp when a site is particularly suitable for their way of life, and other secondary camps related to hunting activities. The more recently emerged modern humans from Africa, who

continue to arrive, have a slightly different way of life because the regions they passed through have less game and different animal species. They have adapted hunting techniques and favored projectile weapons. Highly mobile, they pose a serious threat to the ancient humans when they compete with them for hunting territories.

In open conflicts, the ancient humans, being pursued and targeted from a distance, have little chance of prevailing. For Neanderthals, it is a grave threat. Moreover, the mastodons, mammoths, woolly rhinoceros, and the large, hump-backed deer known as *Megaloceros* that they used to hunt are becoming increasingly rare. There is too little time to adapt! The *Homo Sapiens Sapiens*, on the other hand, do not wait and increasingly invade territories. Another decisive factor will emerge: their birth rate is much higher than that of the ancient humans. The ancient Neanderthals will resist for another ten thousand years, but around 35,000 to 30,000 years BP, their last representatives in southwestern France will leave for Spain, definitively making room for the newcomers.

Soon, there will be only one type of human on Earth, one species, the modern human, descended from a common African Eve, who will settle down, take advantage of the forthcoming climate warming to introduce culture and animal husbandry. Everything is about to accelerate. With writing, *Homo* will be able to write its own history. The human species, by excessively modifying the environment, will also become a decisive factor in evolution; it will be responsible for a new extinction of species, known as the Anthropocene.

After the LUCA milestone, with the *Homo* genus, evolution has reached a new important stage in the elevation of consciousness. Successive species have rapidly progressed in self-awareness and their relationship with the natural environment. Neanderthals were already pondering questions of suffering and death. 100,000 years ago, they were already practicing funerary rites; they would bury their dead with offerings. At this stage of *Homo*'s species development, they still lived day by day like their animal cousins; they did not yet consider themselves superior to them.

This will not last because *Homo* has acquired an advantage that will soon make all the difference and ensure its superiority: a much higher mental capacity, with enhanced abilities of observation, memorization, comparison of the effects of its actions or reactions, and an ability to project into the future. Faced with a difficulty or obstacle, *Homo* knows how to weigh the risks associated with each contemplated solution and thus choose the best

survival strategy. Man has become aware that he is conscious, capable of abstraction. He can think about things that are not necessarily directly connected to reality, that is, not directly derived from his senses. The human brain consumes relatively more energy than that of other species, even the great apes. Man is capable of thinking about new situations he has never encountered in his own experience.

He can imagine that white could be black, that something that is could not be. The adoption of upright posture has freed his upper limbs, encouraging grasping and manipulation of all kinds of objects; he has acquired the ability to communicate through speech. He can engage in precise exchanges with his fellow beings far beyond the few modulated sounds specific to other species. All these characteristics allow him to measure himself against other animal species, becoming less of a prey and increasingly a pure predator.

This age of humanity also sees the beginnings of the scientific approach, trial and error, the replication of selected gestures for their effectiveness, mastery of fire, the shaping of stones, flint, obsidian, and other rocks with sharp edges, the selection of plants such as willow buds that can heal some of the ailments they frequently suffer from. The downside is that these new abilities will give rise to new concerns in man. Simple immediate animal fear will conceptualize into fear and even anxiety about what might happen when the forces of nature unleash themselves, storms, earthquakes, volcanic eruptions, river floods, and extreme cold. Now, Homo will think about all of this even in the absence of warning signs.

In the face of Evil, he will find no explanation and will have to settle for a fatalistic approach. This will be all the crueller because he has become capable of dreaming of an environment where there would always be sunshine, where game and wild berries would always be abundant, a life where a hunter would never be injured, where women could become pregnant and give birth without fearing a fatal outcome, where death would not be inevitable. He can now imagine an ideal world or at least a better one, thinking about the best moments of his life as well as the worst.

*Experience time: 0h 29min; the presentation was interrupted. The time clock is frozen at 38000 BP. Krawn is talking to me about the next part of the experiment:*

These reminders, of course, were tedious but necessary for you to fully immerse yourself in the context. Now, it's time for you to enter this first age

of humanity, to share some moments of the lives of women and men from this animal age, to enter wild and untouched nature not yet transformed by man. You will inhabit their minds as they are in the process of shifting from the duality of good and evil to the duality of right and wrong. You will see that they do not yet consider themselves completely different from the rest of the surrounding nature, from the other animals that have four legs, a mouth with a tongue, and two eyes. Their essential concern is above all to survive, to be able to shelter, feed, clothe, and reproduce, all on a day-to-day basis.

~



## **ANIMAL AGE**

### CLAN DE L'AIGLE

#### **Kers**

##### Manhunt

*I am Joy, from Dome Ocean, Project Nemo, April, the nineteenth of the year 2035, experiment time: 0h 29min. Immersion: I am Ogh, the chief of the Great Deer clan. Around 38000 BP, in the Paleolithic age, Western Europe, the middle Rhône valley, slightly above the 44th parallel, on the tenth day of November in the Western calendar.*

Like many other Sapiens Sapiens, or modern humans, the Great Deer clan lives in the great valley, near the great river, specifically on its right bank. It consists of around thirty men, women, and children. Our main camp is set up on the bank of one of the river's branches, slightly elevated, at a spot where the currents are less turbulent, and the waters split into two branches. There, we are protected from the floods caused by melting snow and ice, as well as from the cold northern winds. Our main camp consists of about ten huts made of branches covered with thick hides, set up against the hill, facing south. Not far away, there is also a shelter under a rock where we can take refuge during the coldest winters. Fishing and hunting provide us with an abundance of food. Our territory extends for about ten miles upstream and downstream from the river, from the shore to the foothills of the great mountains of the rising sun, where the ice never completely melts. The great valley where the river flows is populated by all kinds of animals, particularly mastodons, mammoths, woolly rhinoceroses, and even giant deer (Megaloceros).

It is from this last animal that the clan's name comes from, with its great full and continuous antlers that adorn the entrance of the hut where I live, our totem. In fact, I have only seen the great deer once in my life, from afar and in the mist; it was when my father was teaching me how to hunt. We observed it until it disappeared in the distance. The antlers in the camp were found on the ground; they had been naturally shed by an animal at the end of winter, as is the case with reindeer and other deer living in the valley. Flat and serrated, they are very different from the branched antlers of reindeer,

some of which curve forward, or those of deer that all curve backward; they are also much wider and more imposing.

We also hunt aurochs and other wild oxen. In the thick bushes and thickets of the ravines, we flush out wild boars, and in the groves, foxes and all kinds of other small game with fur or feathers. It is more than enough to meet our needs. Many other animals also live near us, especially small horses; they run in the plains as soon as they sense the slightest danger, and there are dangers indeed. The most dangerous beast for humans is undoubtedly the lion, the most fearsome of beasts. It does not hesitate to attack humans, woe to the hunter who ventures alone.

Further north is the land of the ancients, colder and windier than here, closer to the great glacier, the land of wolves as well. During the harshest cold spells, their packs do not hesitate to venture here, near our camp. They are driven away only by fire. The ancients, on the other hand, do not show hostility. What they prefer to hunt are mammoths. To attack a mastodon, they do not hesitate to get as close to the huge animal as possible; they then try to injure it at the level of its legs. Once they succeed, they follow it and wait for the exhausted beast to collapse. This can take days and days. On the other side, to the south of our territory, another clan of humans like us is settled. We sometimes encounter them, although it is quite rare, and then we share the meat around the fire; we exchange fox skins, deer antlers, flint, bark, and plants for the healers.

This year has been good, with an early spring followed by a hotter than usual summer. In the herds, females have given birth abundantly, and in our clan, there have been five births. Three of the infants are still alive. However, Nohr has warned me. Our healer can predict the weather, and according to him, in one or two full moons, it could be the beginning of the bad season with early snowfall. No one really knows how he can know that, but often what he says comes true. He needs plants and mushrooms. Moreover, even if the women have not asked yet, we will need a few more fox or wild rabbit furs, deer antlers, flint, and if possible, some large skins to double the tents. Tendons and sinews used to sew clothes and attach arrowheads are never too many, work for the long days of cold. Finally, the meat reserves will have to be larger than last winter.

For all these reasons, I need to plan one last major hunting campaign. I will go far from our main camp to the edge of our territory upstream, where deer and reindeer gather in large numbers during the rutting season.

*First day.*

I set out with nine hunters; four others stayed at the camp with the women and children. It is enough to protect them from possible predators. If necessary, one of them can also accompany them for gathering and collecting wood. After an exhausting day of walking, we have just reached the clan's territory boundary, halfway between the mountains of the rising sun and the river. Higher up on the left, the river is passable when its level is at its lowest point of the year. That's where the ancients wait for the great pachyderms. Evening falls, and it is time to rest. We set up a temporary camp, set a few traps, and prepare a fire to warm ourselves and keep wild animals away.

*Second day at dawn.*

The day is dawning. The hearth has only embers and smoke remaining. The others are still sleeping. Lying down, I keep an eye open; I have a feeling that we are being observed. I see shadows a few hundred meters away, two massive and stocky figures. They are the other men, the ancients, the ones Nohr claims to know. I don't move. They approach a little, evidently with caution; they are probably a foot shorter than us. Now I can make them out. They have large heads with a protrusion above their eyes. Their skin is lighter, almost white, almost lifeless, and their straight hair has a reddish ochre color. Their chests seem much more powerful than ours. No doubt, it's the description given by Nohr. They must live on the mountainside, where the ice licks the steppe plain. Perhaps we have encroached on their territory? In that case, they are simply trying to ascertain our intentions. Nohr says they are excellent hunters, able to smell and see game from far better than us. They have stopped and do not appear hostile.

That's when a blanket of mist descends from the hilltops; it quickly envelops and hides them from my sight. I didn't say anything to the others. Everyone is ready for the hunt. I'll just avoid going further north. Besides, it's not necessary because soon luck smiles upon us in the form of a small herd of reindeer. I spot a dead-end valley where we should be able to easily drive the animals towards. We approach. The wind is favorable, I give the signal. Startled by our shouts, the animals scatter, and some of them head towards the trap, just as I hoped. It's a success! We let two large aggressive males go. Behind them, two females and three young ones born last hot season are trapped. They all try in vain to free themselves by climbing the steep slopes, but they are unable to; soon, the females give up to not abandon their young.

Panicked, the fawns jerk their heads from side to side, ears raised. It's the right moment. I aim, hurl my spear, and three other hunters do the same. One of the adult females is hit in the shoulder, and the other in the belly, two young ones in the base of the neck, and a third one in the thigh. We approach, a few blows from the club finish them off. We get to work immediately because we need to skin our three catches before the scavengers come to dispute them with us; knives and scrapers come into action. With a quick flick of the wrist, I bleed one of the animals; the others meet the same fate.

Once the carcasses are opened longitudinally, we remove the entrails and viscera; livers, hearts, and other choice offal like tongues are set aside. Tonight, we will savor them around the fire. The hides are slashed at the base of the legs and neck; we cut the haunches, shoulders, and fillets and form bundled packages tied with vines; we fasten them to branches. It was just in time. Characteristic grunts can already be heard from behind the bushes, they are hyenas. We leave the carcasses to them; soon they will have to fight the eagles for them. I give the signal to depart. We will follow the sun and head back towards the river. It will be tough with the loads, but we should be able to reach the bank before nightfall; we will camp by the river. On the way, we examine the traps set the day before. In one of them, there's a fox with a beautiful fur already half whitened. It will be for Leor, my companion.

As for Nohr, he frequently stops along the way to gather plants or barks; he slows us down, but it's useful. We also collect some antler wood. Second evening. I haven't seen the elders again. We are all gathered around the fire, about a day's journey from our main camp. The wind has picked up, stoking the fire, and the flames lick the meat, hearts, kidneys, and livers skewered on branches; a delicious smell of roasted flesh fills the air. There's plenty to feast on and regain strength before the return. Nohr is delighted because he has found almost everything he was looking for, fresh plants and tubers, leaves, and barks; he has also gathered seeds and mushrooms. All of this will allow him to prepare potions that soothe pain and ointments that heal wounds.

### *Middle of the night.*

I can't sleep. The fire is almost extinguished, but the embers still glow. The satisfied men have been sleeping for several hours, their bellies heavy. The hunt was successful, and tomorrow they will reunite with the women. I tighten the thick fur that protects me from the northern wind. The smell of the fire masks the scent of blood seeping from the meat bundles; cries of

nocturnal birds can be heard, followed by the characteristic growl of a leopard. Suddenly, I realize that we haven't heard the wolves. Perhaps Nohr was mistaken about the arrival of winter? Fatigue takes over, and I start to drift off. My brother Thor is keeping watch, so I don't have to worry. He revives the fire by placing a few forgotten large branches, and now it's my turn to dream. The hunt, a beautiful day, animal faces, two eyes, a mouth, two ears. They resemble us. Just like us, when it's cold, mist comes out of their nostrils. A fatally wounded doe looks at me, and others and others still. Water flows from their eyes, like from women's eyes when a tragedy occurs. One of them is losing her blood, a red and warm liquid like that of hunters. It seems like she knows she's going to die. Then, another gaze captivates me, that of a great lion. He watches me, I have disturbed him. Now, all the animals are looking at me, and all of them are questioning me. In the eyes of the beast, there is only cold determination and cruelty.

He's about to pounce. I suddenly wake up. It's just Thor tapping on my shoulder. The fire is still burning. He signals me to be silent and points in a direction. All my senses are on high alert. A noise is heard, coming from a dense thicket about a hundred feet away. In the flickering light of the flames, I see leaves moving. One by one, we shake our neighbors, waking them up. We grab our spears ; the branches part. All the weapons are ready to fly, aimed at the front of the thicket, but I calm my companions with a hand gesture.

A man emerges, groaning, alone and covered in blood. He has a nasty chest wound and staggers. Oh no, it's Yrix! He should be at the camp, and I suddenly have a bad feeling. After approaching, he collapses. We lay him down, and Nohr tries in vain to stop the bleeding. With each heartbeat, the bright red liquid escapes a little more, he's at his limit. I lean over and speak loudly in his ear, asking him to stay with us, but it's already too late. I can see from Nohr's gaze that there is no hope left. 'Kers, wolves, wolf men, all dead,' those are his last words.

We look at each other, we all understand; something very serious has happened at the camp. We should reach it as soon as possible, but the pitch-black night prevents us; with the clouds, we can't even see the stars. Soon, the first light of dawn will appear, we must wait. Then we will move quickly, leaving everything behind. None of us can sleep anymore. We need to bury Yrix; I take his knife and his necklace, we dig a hole near the fire, gather branches and stones that are abundant there, it will do.

*Third day.*

Normally, we would be a day's walk away, but that's much too long. I decide to pick up the pace. Nohr struggles to keep up, and we must stop frequently. Finally, I decide to leave him behind with two men. We run until we're almost out of breath, taking the most direct route along the river. A final descent, another ascent, and there it is, the campsite in sight. No smoke, which is worrisome because normally from where we are, we should see wisps rising to the sky, remnants of the night's fires. As we get closer, we see overturned huts. We rush in a straight line, and then it becomes unbearable. In our harsh life, we're used to the daily struggles of injured men from hunting, sometimes having to end their suffering, the sorrow of a mother dying in childbirth, we know and accept all of that.

When misfortune befalls the clan, we try to quickly forget; after all, we don't have a choice. Every new day, we must think about survival. However, we've never faced a situation like this: amidst the fallen huts, we see disemboweled, dismembered, and amputated bodies, an unspeakable horror. Some have only their trunks and heads, as if their thighs were taken and carried away. My heart sinks: a stake is driven into the rounded belly of a woman, Yrix's partner, who was soon to give life. Time stands still. It's hard to believe what I'm seeing. Then comes the anguish, as I search for Leor, the one who shares my bed.

I feel like my heart will stop; she lies there with her skull shattered at the entrance of what used to be my chief's hut, in the middle of a large pool of dark brown, frozen blood. My two sons, four and five winters old, have suffered the same fate, and I can no longer even recognize their faces; their bodies are also dismembered and partly devoured. None of them will ever succeed me; everything that gave meaning to my life is destroyed, erased, there's nothing left to do. The Great Stag clan is no more; further proof lies ahead – the great antlers are on the ground, broken in two. Beyond the pain, we absolutely must pull ourselves together, cover the tortured bodies. Everyone gets to work.

Amidst the desolation, a few exclamations emerge: four women and eight children are missing. They may have been taken by the attackers, the Kers, those wolf-like men Yrix spoke of, the ones who perpetrated the massacre, or, as a last hope, they may be hiding nearby. It's not impossible; they might have gone for wild fruit gathering, collecting wood, or to retrieve fish baskets from the riverbank. In such a case, they could have easily escaped the massacre. I need to make sure, and I cling to this idea. Judging by the state

of the ashes, the Kers came yesterday, but not before noon. I set out to search for them with Thor; his partner is among the missing, and there are no traces of Nera, their just-pubescent daughter, a promising young female.

Forgetting all caution, I dash with him towards the hill. We pass the rocky shelter. Below, there's a hidden kind of cabin where hides are stored, fish baskets, vines woven into ropes, and even a raft. The women are there, crouched at the entrance, terrified, with the children; they are all huddled together. I count them, six little ones and four women, including Thor's. None of them can speak.

It's Nera who tells the story: yesterday, when the sun was almost halfway through its daily course, she had gone to gather firewood for the night with her mother and a young boy. It was quite far, well beyond the spring. That's when they heard screams. She climbed a tree and saw everything from there. Three of the men, including Yryx, were pierced by javelins; none of them even had time to grab a weapon because the surprise was total. Yryx, wounded, managed to escape while the Kers began looting and massacring.

How many were there? Several dozen, accompanied by wolf-like creatures that seemed to obey them. Men and animals wreaked havoc on the elderly, women, and children. The screams of terror were unbearable. Nera saw them cut off the thighs of the two guards who were killed first. They also captured alive a nearly adult male and female; once tied up, they were suspended from branches and taken away like game.

Everything happened very quickly; the Kers left as abruptly as they arrived. Then they waited for the return of the other two women from the clan who had gone into the forest with the young ones, and afterward, they all hid in the cabin. Nohr finally arrives. He says nothing, trying to control his emotion, astonishment, pain, and despair. I give the order to gather the remains of the bodies. We must prepare for their burial, at the bottom of the shelter; there are many rocks there.

*A little later.*

I looked at Leor one last time. We laid her on her side so she could see the setting sun, the children curled up against her. I placed my chief's necklace with the bear's teeth, ivory beads, and the large translucent orange stone found in the river on them. I couldn't hold back my tears. For the first time, the clan saw their chief weep. We covered the bodies with hides, leaves, branches, stone blocks, sand taken from the riverbank, and then even larger stones. Then we buried the others in a large pit, where I placed what

remained of the great stag's antlers. At that moment, I thought it was the end of the clan. When the sun set, we gathered in the shelter. The men wanted to make a fire, but Nohr dissuaded them. We huddled together, feeling cold, waiting for the new day.

## **right bank**

*Immersion: I am Ogh, the fourth day.*

Dawn, morning frost, veils of mist extend along the river, white mist envelops and hides what remains of our old camp. Upon waking up in the shelter, everyone wanted to believe in those thoughts of evil that sometimes come during the long nights of the ice season. But no, if we are in the shelter, it is because misfortune has befallen us. The urgency now is to understand who perpetrated these atrocities, how many attackers there are; Nera may have been mistaken, and we also need to know where they come from. For that, we must search for traces around the camp: broken twigs, torn leaves, earth torn up by footprints, deduce the size of the strides, and find the tracks taken by the assailants both on the way in and on the way out. Thor is coming with me. The other hunters will remain vigilant, weapons within reach, to protect the rest of the clan.

The signs are alarming; it's not just evidence from the previous morning, the day of the attack; some tracks, although fewer in number, are clearly fresher, especially animal droppings resembling those of wolves. This means that the attackers are not far away, perhaps even watching us with the intention of returning. They waited for us to go hunting before attacking; they know we are here, and there are still things to plunder, skins, tools, stones. On our side, we are only nine hunters now, since I cannot count Nohr; they number a few dozen, not counting their animals. In a direct confrontation, despite all our courage, we would have no chance; they would exterminate us quickly.

A solution is necessary, to leave and quickly! If they attack, it will be like the first time, in the middle of the day, especially since they must have feasted during the night. We must not succumb to hatred and the desire for revenge; later, one day, when we are strong. After talking to Nohr, I gather the men. They understand and still trust me. We hastily prepare for departure. Three men will take care of retrieving everything they can from the remains of the camp: the essentials, stones for making fire, flints, clubs, axes, arrows, some



of the lighter skins, the water bags, containers, pre-cut reindeer wood, dried meat, leather straps, basically anything that is not too heavy or cumbersome. My escape plan requires speed. Nohr insists that we take the plants and potions as well. Additionally, everyone should cover themselves with the warmest and lightest furs, no overloading.

The sun is only one-third of its way up when we are finally ready; we abandon the shelter. Our small group skirts the riverbank to reach the main channel downstream. There, the bank becomes sandy; it is just covered with a few thickets interspersed with clusters of trees. It is exposed, but we can progress quickly. I urge the group to pick up the pace, but the women and children struggle to keep up. The sun is already at its highest when we arrive at a place I know well. At this point, the river is very wide, but there is a narrow strip of land that juts out into the water and is well-wooded at its tip. It is an ideal spot for crossing the river, even though we must always be wary of whirlpools; reindeer sometimes pass through here to reach the other bank. Another advantage of this place is that it can only be accessed through a narrow and single passage, easy to defend. It is likely that the Kers have noticed our escape, and they must already be pursuing us. I have only been to the other side once in my life, with my father. I remember mountains very close to the river; ravines cut into them but quickly end in dead ends, narrow gorges lead somewhere unknown. It is also a territory where fewer animals are encountered.



Bing.com / create, prompt: fierce armed prehistoric men accompanied by wolves, along a river.

We are here. I ask two men to position themselves at the entrance to prevent any passage. It is time for Thor and me to explain our plan to the men. I know that most of them usually hesitate to cross the great river; they fear the currents and whirlpools that can drag rafts to the bottom. I reassure them and explain that I have done it successfully before.

While exploring the surroundings, we find a hut; inside, there are still some food remnants, leftovers from small rodents. The men quickly bring back two very young, frightened, women accompanied by three male infants.

They are protected from the cold only by thin and very dirty furs. All five of them were part of the clan of men who resemble us, the one that was settled further south. They too were attacked, during the full moon before the attack on our own camp. The women believe there are no other survivors. One of them asks us for food; they are obviously hungry. Since their escape, the small group has had to make do with some roots, leaves, and small wild animals. We distribute slices of dried meat to them, which they quickly devour.

The decision is quickly made; the group will come with us. It will require an additional raft, but they will assist us. In total, we are nine men, not counting Nohr, six women, and nine young children plus Nera. Survival may be possible, but only if we manage to cross the river. Women and children begin to gather and assemble long, flexible willow branches while the men cut slender birch trees with gray bark marked with white spots. I have planned for six rafts; that should be enough, but we absolutely must finish before nightfall, successfully assemble the wood with vines and leather straps, secure the skins, and shape six broad, flat branches that will serve as oars.

The work has already progressed well when suddenly one of the two sentries left behind alerts us. The Kers are in sight! I send two more men to the edge of our wooded refuge. Well sheltered by the trees, the four of them will be able to block the passage. Luck is on our side as clouds hasten the onset of night. They will probably wait until the next morning to attack.

*Fifth day.*

The very first light of dawn. Women and children board the rafts that have already been put into the water. We've loaded everything. I explain the maneuver to the men. The most skilled will steer the small boats with the instruction not to try to fight against the current too much; they will simply direct the rafts towards the opposite bank by starting obliquely and using the oars. It doesn't matter if we drift, we will regroup on the other shore. It is precisely when everything is ready to depart that the Kers decide to launch their attack. A group of seven or eight of them converge toward the narrow passage. They are certain of their superiority; they didn't even bring their beasts. I stand my ground with my four men. Calm and composed, waiting as long as possible until they are within range. It's good, we can throw, the javelins are released simultaneously, and three hit their mark.

The Kers watch in disbelief as their companions fall to the ground and they retreat, dragging one of their own. They underestimated us but they will come back stronger, probably this time running ahead of their wolves. We need to leave as quickly as possible, abandon the position, join the others who are waiting for us, and quickly move away from the shore. They are already ready to depart; each raft is held by a man with water up to his chest. We climb cautiously to avoid tipping the small boats. Quickly, the current carries us away. It was time; just behind us, on the bank, the Kers are already there, massed by the dozens and accompanied by their wild beasts. They brandish their weapons, shouting with anger, hatred, and frustration ; some stomp their feet. The sight of escaping human prey is so unbearable to them that they start throwing javelins in haste. Most of the projectiles fall into the water. Only one lands on the last raft, but without causing any harm.

We are quickly out of their reach. A final glance at the shore we left behind a final image of our territory. Saved from the wolf-men for now, but not rejoicing just yet! I am on the leading raft and the current proves to be much stronger than expected. Near a rock emerging from the river, a young reindeer has become trapped; stuck in a tangle of tree trunks and branches, it is desperately trying to free itself. I focus on navigation, signaling the danger to the others. We must avoid areas where the water dangerously whirls around, like near the rock. Fortunately, everything goes well, the men maneuver skillfully. The crossing seems long, but the right bank is already there.

My raft docks first, soon followed by the others. Three have landed almost in the same spot as mine, lucky break. The other three drifted further downstream, and I set off to meet them. Before abandoning the rafts, we need to retrieve the straps, laces, skins, anything that can be useful to us since we don't know what we will find. The sun is only a quarter of its way across the sky, and we are all gathered. The landscape is like the other shore. We could stop here, but we are not necessarily safe. The Kers could very well decide to cross. The best course of action for now is to put some distance between us, to venture into the lands or rather into the mountains that appear to be nearby.

We choose to follow a narrow, steep valley, but soon it becomes a dead end. We must climb a very steep slope; at the top, we find only a desolate plateau. No living soul, nothing on the horizon except the grassy and low steppe, few trees that are stunted and withered, a cold wind whipping our faces. I have no choice but to keep moving forward. Evening is approaching,

and the women and children are exhausted; their feet are bruised, and sometimes already bleeding. Farther on, the landscape becomes less monotonous. A valley with a nearly dry river descends towards a transverse valley flanked by cliffs. Unfortunately for us, the place is already occupied; I see huts down below, good or bad men, who knows? As a precaution, I prefer to avoid encountering them. There is little chance they have seen us from below, and we will stay here in the valley for the night, rest, and recover. I will stand guard with Thor. We cover ourselves with the few skins we retrieved from the rafts; the fire will have to wait. I let Nera distribute the little food we have left. Women and children eat and then fall asleep, huddled together, hoping for a peaceful night.

## **Great Cirque**

### Installation

*Experience time: 0h 39m. Immersion: I am Ogh, the sixth day, November fifteenth.*

I wake up sheltered by the large rock at the foot of which we slept, almost surprised to still be alive. It's cool, but luckily the wind has calmed down. A baby is searching for its mother's breast, but she has nothing left to give. Everyone falls silent. We devour the little food we have left before heading towards unknown lands. The danger of the Kers seems distant, but at what cost! Stones, bushes, a desolate landscape, just a few ibex droppings.

### *Midday.*

In the sky, two eagles have appeared from the northwest; they circle around. If they're there, it means there's death and therefore animals. We take that direction, and gradually the landscape changes. The plateau becomes less dry. There are meadows and even a few trees in the distance with some animals that I can't identify. In ravines overgrown with bushes, we find clear traces of wild boar presence at the bottom. We've arrived. It's a goat carcass; the eagles are busy devouring what's left of it. One of them has stuck its head into what used to be the animal's abdomen, but most of the flesh has been consumed long ago. Disturbed by our arrival, the two birds measure us and cautiously move aside. Near the body, there are wolf hairs; we need to be careful. Finally, the birds decide to take off; they head west

and disappear. I decide to go in that direction. We quickly reach the edge of a precipice. Below, a deep-cut river carves through the limestone plateau with its twists and turns; it curves towards the east or the west around a north-south axis. The valley widens or narrows depending on the resistance of the limestone rock. From where we are, we can see far, both upstream and downstream.

The further north we look, the higher the cliffs become. The eagles have reappeared; their wings fully extended, they now draw large circles above the valley; they are probably nesting in the cliffs. I don't have much choice; our few provisions are exhausted, and we must find a proper shelter for the coming night. I will try to descend. We must not lose hope, not think about the great valley and all those who are no longer there, not imagine that perhaps, down below, the places are already inhabited. By following the cliff, we reach a place where it is slightly lower, a little less steep; the valley widens. At the bottom, the river flows into a large natural cirque in the shape of a half-circle oriented towards the rising sun, thus towards us. On the side facing the setting sun, the high and steep cliff forbids any descent. At its feet, I catch a glimpse of a rock shelter, easily two hundred and fifty feet long; it seems to be hollowed out in places with sufficient depth to accommodate two men side by side. As for its height, from where we are, I estimate that a man could almost stand up inside it.

Below us, the cliff is covered with rocky scree from halfway down to the river. By following the edge of the precipice, we eventually find a narrow path that seems to gently descend through the bushes. It's like a trail, as if produced by the repeated passage of animals. We take it; there are thistles and various excrements. The path leads us to the vestibule of a cave overlooking the valley; it seems quite deep, and numerous bones cover the ground at the entrance. The men have already brandished their weapons, but nothing happens, and there are no human traces either. I try to calm my companions; in any case, we won't linger here. We urgently need to find a passage to continue the descent. We can now clearly distinguish the bottom of the cirque; the semi-circular platform bordered by the river gradually rises towards the rock shelter. Just after the white rocky rim that borders the entrance of the cave where we stand, the cliff has partially collapsed; there may be a way to descend. Indeed, there is a passage, and we venture into it cautiously. Obviously, the wild beasts that frequent the cave do not descend any further.

We slide one after another along the scree that joins the river. After

crossing the river, we reach the shelter. It will be perfect for spending the night. The cliff is still warm, heated by the morning sun. I arrange a few branches as support and cover them with the skins saved from the disaster. It has been several days since we've been deprived of the protective fire; we must quickly regain those yellow-orange flames that symbolize life. The women gather small branches. Nohr has already taken out the fire stones, flint, and marcasite, as well as the tinder, dried lichens and mosses always ready to ignite at the first spark. Here we go! Brah strikes the stones and sparks fly, the tinder catches and glows red. A timid flame ignites on a small branch, and soon another follows.

The fire has returned, the beneficent fire that warms, keeps predators at bay, hardens spearheads, dries the blood of wounds, and cooks the meat. Everyone rejoices and gathers around the meager hearth. The freshly cut, still green wood smokes and hisses as it burns like wind passing through a crack, but it's already good; the flames restore confidence. Everyone is now thinking about food, but what shall we eat? It looks like a lost valley, yes, we're safe, but without food. I absolutely need to go back up there to hunt, bring back meat and skins, and, also, sturdy branches for the shelter frames. Meanwhile, Brah will keep watch over the fire. Tonight, I want the women and children to be warm, for hearts to find comfort. My brother Thor will come with me, as well as two other hunters.

*Back on the plateau.*

We climb the unstable pile of rocks just below the large cave. The narrow path we took on the way allows us to reach the plateau. Once we reach the top, opposite to the flat grassy area we came from, a more contrasting landscape unfolds before us. Narrow and shallow ravines surround white stone ledges covered in lichen. Down below, there are thick and bushy shrubs, junipers, and various other small bushes scattered here and there. We soon come across traces of wild boars. Thor signals me, and I join him. He shows me the disturbed ground; the animals have tried to unearth tubers, bulbs, and rhizomes. There are also a few almost dry mud puddles where I recognize the trail left by a sow and her litter. It's recent, probably from this morning. At this time, the animal must be hiding in the dense thorny thickets at the end of the ravine.

It would be better to wait until evening, but there's urgency, we need to bring back food. I approach cautiously. She's right there. Sensing the presence of humans, she starts squealing, huffing, snorting, and then

growling threateningly. It's dangerous to force her into the thickets, but we must take our chances. Thor and the other two hunters aim randomly, and we succeed! The beast emerges. She is particularly big, and indeed a sow, the one that left her footprints on the ground. She rushes furiously towards me, but I stand my ground. The stake penetrates her neck. I don't persist and dodge to avoid being unbalanced.

The beast continues, whimpering in pain, then suddenly stops and turns around as if to counter-attack, but it's difficult for her because the stake is lodged in her throat; the sow waits while blood flows from her wound. I would like to kill her quickly, but it would still be imprudent to approach. Meanwhile, Thor has gone back into the thicket. I shout at him to be careful. He retrieves the spears as six striped piglets come out in a panic, one after the other. He easily knocks them out as they pass by. The sow becomes enraged. We try our luck again with the spears. It's in vain; the hide on the animal's back is so thick that the spears bounce off, and ultimately Thor must finish her off with a violent blow from a club. This time it's over for her.

An eagle has seen everything and begins circling in the sky. What it doesn't know yet is that this time it won't be joining the feast; we won't leave anything behind. We drag the sow's carcass to the edge of the cliff and then to the cave entrance. From there, we throw it down below before descending with the piglets. It's evening, our first night in the great cirque, with fire, meat, but no real huts. Tomorrow, we'll have to set out again in search of large animals, to see if there are any and if we can survive here, if there are reindeer like in our old great valley, or only deer, stags, and ibex. I will keep watch with one of the men.

*Middle of the night.*

Everyone sleeps in the shelter, satiated and leaning against the cliff. Nothing happens in the cirque. The only notable sounds seem to come from the plateau, unsettling and even chilling roars of beasts, short and sharp yelps characteristic of hyenas, howls of wolves calling out. It confirms that there is indeed life up there, even if it is well hidden.

*Immersed: I am Ogh, two weeks later, November twenty-ninth.*

According to Nohr, we probably have little time left before the cold sets in, so I have been going to the plateau several times. I'm starting to know it well; to the north, as I had hoped, I found a greener and wooded landscape with a few groves like in the old territory of the great Deer clan near the big

river. I haven't seen any reindeer or horses like in the great valley, only a few large bulls and deer, as well as abundant ibex and wild goats. For hunting, it's enough to know the water sources and be patient. It's not always easy because sometimes the water mysteriously disappears into the ground. Nohr says it goes into underground streams that resurface down in the valley. Today is my fifth expedition. I've already been gone for two days. Luck is with me; indeed, deer are approaching the water source we've been watching since the beginning of the day.

The group includes a big male and three spotted females. Since we placed feces nearby, the animals haven't detected our human scent. I wait for the animals to feel safe while hoping no predators will disturb the situation. After drinking, the deer start tearing and chewing the leaves and twigs of the bushes bordering the pond. I approach stealthily, aim for the shoulder joint of the male, and throw my spear. It's successful. On their part, my companions have wounded two females. They are already down. We approach to finish them off. I see life leaving the eyes of the big male. I sense resignation before the gaze becomes clouded and lost forever.



After skinning, we keep the hides, antlers, meat quarters, livers, and hearts for the evening, then we leave the rest behind to set up camp a little further away. Tomorrow morning, we will head back to the great cirque.

Bing .com, images, create prompt : prehistoric men devouring meat around the fire in a cave, bones on the ground.

*Ten days later, December ninth.*

We haven't taken any rest, but the reward is here at the camp. There are now plenty of rolled-up furs, still to be cleaned, dried, and softened, meat, fat, deer antlers, and tendons that will provide the threads for sewing clothes. Our supply of dried meat strips would already last for two full moons. Today is a great day. With the furs that the women have prepared at the river, we will carefully cover five sturdy habitats leaning against the cliff side by side. Tonight, everyone will be sheltered from the wind and rain. We will also set up bedding with dry herbs and cover them with fine and warm fox, goat, or hare fur. The only thing left is to stock up on firewood. We'll need a lot for



the winter, and it's scarce. I anticipate making one or two additional forays onto the plateau.

We have become interesting again, at least for the two large eagles we saw on the first day of our arrival at the grand circus. Attracted by the remains we leave downstream by the riverbank; they have grown accustomed to us. Nohr suggested that we become the Eagle clan since they brought us good luck. We all agreed on this name. The Great Deer clan and its bad memories are forgotten. The life of the clan can now resume, although it will be less easy and beautiful than in the great valley because there is less game. It is also more difficult for Nohr: the trees and plants are different from those that grew in the great valley near the great river. When I take him to the plateau, he collects plants and tries to understand what they can bring us, whether we can consume them or not. Fortunately, there are a few mushrooms and pine nuts. As for the cave, we can no longer wait to explore it; the men have spotted bears lurking. They will soon settle in.

*December eleventh.*

I went in to explore the place: the cave consists of three low rooms in a row, adorned with stone columns, stalactites falling from the ceiling to meet the stalagmites rising from the ground. In the second room, we found traces of bear occupation from the previous winter; they disturbed the columns while preparing their dens, those large holes where they will hibernate as soon as the deep cold comes. That's where they will come back as soon as they have eaten enough to wait for the end of the ice season. Thor thinks they are cave bears. Much larger and more impressive than us, these bears usually do not attack humans unless they feel threatened. If that's the case, we just need to be careful not to disturb them when we take refuge in the cave. It's the third room that interests me more. We access it on the right, a little after the main entrance, and the passage is too narrow for a bear to squeeze through.

Very quickly, we reach a spacious room that could accommodate the entire clan if needed. However, be careful, others before us found the place welcoming! The floor is littered with bones bearing bite marks, so predators frequent the area. We'll need to block the passage with a sturdy branch grille without delay. Once that's done, we'll start arranging the interior, setting up storage, storing bladders to collect water or melted ice, placing furs and bedding, installing lamps and reserves of fat for torches, and stocking firewood. The air drawn upwards against one of the walls will ensure the draft

and the smoke's evacuation. Finally, at the very back, I spot another very narrow passage, a sort of tunnel three-quarters blocked by rock piles, with some air circulation as well. I'll come back with Brah's son; perhaps he'll manage to squeeze through and see what lies ahead.

## **survivors**

*Immersion: I am Ogh, first season of the buds at the great cirque, thirteenth of March.*

Nohr was not mistaken, the first winter was very cold with a lot of wind on the plateau, ice, and abundant snow. Two lunar cycles during which we all had to take refuge in the cave. The bears had settled in before us for their long winter sleep, and they didn't bother us. Beasts came prowling before our arrival, but the gate blocked them; once we were settled, the sight of the fire permanently scared them away. After sneaking through the narrow passage at the back of the room, Brah's son managed to reach the balcony of another chamber, which, according to him, seemed even bigger than the one we live in. We enlarged the passage enough for a stooped man to pass through, and our torches then revealed a splendid sight: below us, a large formation of white and yellow, folded stone descends to a body of water occupying most of the place.

The room is so large that from the entrance, you can't see the end of it; unfortunately, it's too damp for us to consider settling there. A bit later, we ventured further into the underground network to the end of the lake, where the overflow feeds a small underground river. We followed it to its exit, a resurgence located quite low in the valley, downstream from the grand circus. There, we had to clear the large rocks blocking the passage, remnants of the collapsed vault. Before the next winter season, we will try to create an additional passage to our refuge; this could prevent us from entering right next to the room where the bears sleep. We could even consider sealing off the current entrance to the room where we live. We also hoped to find a passage that would lead directly to the plateau, but we only found narrow chimneys. However, we discovered a secondary network abandoned by the water, which includes three rooms not too far from the cliff. It opens opposite the bears' cave, downstream from the river loop and slightly lower.

Nohr wants to permanently settle in the first room. We had very few provisions left when the days started getting longer. As soon as light and

warmth returned, we joined the camp against the cliff. The bears woke up along with the rest of nature; they left the cave to go back to living on the plateau. The deciduous bushes are turning green again, although in the morning the grass and small bushes still crack under our steps. Today, a few more buds have appeared. Soon, the earliest ones will sprout tender green leaves.

*I am Ogh, same season, month of April, Eagle's balcony.*

About sixty feet separate the entrance of Nohr's new shelter from the nest of one of the eagles that nested in the great cirque. Too close to humans! It went to settle somewhere else. I cleaned the rocky table after removing the abandoned nest. From this stone balcony, which can only accommodate one person, I can see the entire valley, the entrance to the bears' cave, and, also, the one to the new cave being prepared for Nohr. I have a complete view of the camp and the meandering river that leads to the large stone arch. When we're not hunting, I often climb up to the old nest; that's what I'm doing today. I think back to the journey we've taken; even though we are no longer as numerous and strong as before in the prosperous Great Deer clan, we are alive. The new Eagle clan is very small, but it has reasons to hope. Nera has found a mate, and two females are pregnant. If the Kers had attacked us two to three weeks later, we would not have survived. I think of Leor, of my sons, of the great valley. Survivors, we are only survivors. And the other clans, those who were like us, have they all suffered the same fate? Where do these wolf-men come from? They have even darker skin than us and hair with small curls. Their weapons are also different from ours. Brah examined the front part of the spear that got stuck in one of the rafts during our escape; he had never seen this size or fastening on the shaft before. The weapon is easily held in hand, well-balanced in weight, allowing for precise and longer-range throws than ours. Woe to the old men if they cross their path. With their axes, clubs, and spears, they won't stand a chance; in a fight, they will all be massacred from a distance.

The sun is shining. Down below, the water is flowing again after freezing in winter. It is so clear that I can see the pebbles from here. As the snow on the plateau melts, it seeps into the ground, trickles underground to feed the river of the great cirque. All this water then flows south, perhaps all the way to the great river downstream from our former territory. It's so calm! Apart from the eagles, the bears in the bad season, the few birds nesting in the cliff holes, the snakes, lizards, and shrews from the bottom of the valley, there is

nothing, nothing to hunt. Who would want this place? It's unlikely that anyone would venture here; we can sleep peacefully.

At the southern end of the great cirque, by the river, I see the pebble beach where hides and strips of meat are drying. Children play there while the adults are resting. In the camp, my dwelling is the largest because I am the chief. Next to mine are those of Nohr and Brah, the stone man; he spends all his time breaking pebbles or flint blocks, making tools and weapons. He tries to imitate the spearheads of the wolf-men, but so far, he hasn't had much success; maybe their stones are different. Brah's wife knows how to assist women in childbirth, but she also helps Nohr prepare ointments and balms that heal wounds and protect against small creatures hiding in the hair. At the entrance of the huts, we have placed deer antlers, heads of small felines, and ibex horns, evidence of our first hunts on the plateau. However, I cannot forget the great trophy that adorned my chief's hut in the great valley. It is hot, there is no wind, the heat is reflected by the white rock. I open my fox fur coat, the sun warms my skin, it feels good. In the distance, a raptor observes the edge of the cliff, it's only a hawk.

I think of Nohr. He is eager to settle down, it's not easy to say no to him, to remind him that the access is difficult. Now that the entrance to the cave is prepared, we will have to widen the path, break some rocks. On the other hand, once Nohr is settled, Nera can reclaim her hut. Women, children, rebuilding the clan is the most important thing. For now, we have six women of childbearing age, and soon two more will be ready. All is not lost if the births go well. One day, perhaps, we will regain our former strength and return to the land of our ancestors.

*Immersion: I am Nya, the daughter of Thul, chief of the Bear clan, Ponant plateau, first season of the longest days at the great cirque for Ogh and his clan, mid-August.*

Around the fire, I observe Thul, my father. He is worried, and I feel sorry for him. More broadly, we are all worried, I can read it clearly on the faces, only my brother Maan brings some cheerfulness. He is now old enough to be with a woman, but there is none available in the clan; my father suffers because of it, I know it, I feel it. I fear for my people. We are so few, so vulnerable, threatened at any moment. Game is becoming scarcer. Sometimes we are reduced to eating small rodents, hares, wild rats, and even snakes. In this desolate plateau where we settled after the harsh cold,

gathering is also disappointing. Since we came here, misfortune has been relentless, hunting accidents, miscarriages. We are now only a dozen, settled below a rocky ridge in a deep valley. I think of those other creatures who, at the end of their lives, go hide in a secret place, in the great cemetery of mammoths my father used to evoke. He doesn't talk about it anymore, probably too ashamed to see what the clan has become. He feels guilty towards all of us.

Maan is the only one who hasn't given up. He says that to the east, where the sun rises, he saw an enclosed valley with a prosperous camp at the bottom, and that there would be more animals there. As for us, we only have three huts made of clumsily arranged thick branches and covered with malodorous hides because they were poorly prepared. Life unfolds as if everyone is desperate, no longer believing, as if they are waiting for the end with one final misfortune that would finish off the clan, injuries or an attack by wild animals. However, long before, according to my father's accounts, the Bear clan was a powerful and prosperous clan. It was established much further north; in those regions, the great pachyderms moved in whole herds from season to season. One had to hunt up close with strength and power, approach a weakened or less wary animal, go underneath it and drive a stake into its belly, taking care not to be crushed. Food was then ensured for several moons.

On other occasions, they could also injure an animal in one leg and then follow it until it died. There was also the hunting of reindeer, easy during the seasons when the large herds moved. But with the advancement of the ice mantle, the Bear clan had to move south following the animals' migration. The hunters settled for a while near the great river that bordered Ogh's territory, but much further north. There they encountered the new men for the first time. It was near the confluence with another great river. But these men, faster and more agile than them, coming from the rising sun, also hunted in these territories and more efficiently. They knew how to do it from a distance with throwing weapons, without taking any risks. Some showed aggression, and the elders' clan lost quite a few hunters, trapped like animals in dead ends and shot from a distance. So, they tried to go even further south, but it was worse, the new men were even more numerous.

Finally, the clan had to turn towards the setting sun. In just a few generations, the men went from hunting mammoths and reindeer to hunting bears and deer and had to settle for simple ibexes or boars. It is on this path of misfortune that my father met my mother. A few days before moving away

from the great river, the survivors of the Bear clan passed near a plundered camp, a camp of new men. It must be said that those men fought amongst themselves! My father welcomed a few survivors, including two hunters and a young woman who became my mother. That's why Maan and I are different. My mother was physically very different from the others, slimmer, darker complexion, with a forehead that rose more quickly towards the sky. The men of the Bear clan were convinced that her pelvis was not wide enough to bear hunters, and a woman who doesn't bear children is a useless burden for the clan. However, my father was alone, the clan no longer had enough females. When he chose my mother, opinions were divided, some did not approve. Later they changed their minds when they realized that this outsider knew the plants of the new regions well, knew how to treat them when they were injured or sick. They eventually adopted her. Maan was born, but except for this happy event, fate continued to plague the clan. Our healer died, and my mother had to take his place. The following year, while giving me life, she lost hers.

*Late August.*

Today my life has already seen fifteen beautiful seasons pass. I am ready to become a woman, and my father knows it. He would have wanted me to take a husband, but I fell ill. I don't really have pain, but I feel weaker and weaker, I can't even get up anymore. I am withering away, and my father doesn't know what to do anymore. So yesterday, Maan suggested going to find the men from the valley. The clan hesitated at first, it's dangerous, they could choose to kill us all, but in the end, they agreed to take the risk. My father will go with them.

**encounter**

Trust

*I am Ogh, the great cirque, a few days later, on the balcony of the Eagle.*

A raptor is circling in large circles just above a point on the western cliff. It's quite unusual. Generally, when eagles soar in the air, it's more on the eastern side, where we hunt. Even more intriguing, a thin thread of gray smoke appears. Whirls rise to the sky. A campfire, people? None of us have yet been to the plateau of the setting sun, you see. It's decided, tomorrow at

sunrise, I will set out on a reconnaissance mission. I will take two men with me, my brother Thor and Yul.

*Next day.*

We had to paddle up the river for five bends before finding a climbable ramp. We just arrived at the top. One of the semi-wild dogs sleeping near the campsite follows us, maintaining a cautious distance. The landscape is approximately the same as on the eastern side of the canyon: vast monotonous expanses of steppe, grass and white stones, rocky tables, ravines, all as far as the eye can see. However, trees are rarer and stunted, and the vegetation is sparser than on the other side. I head south, where yesterday I saw the smoke near the Great Cirque. We're here. Yul is searching for tracks and finds them: trampled grass, small broken branches, not far away a carcass with only a few bones and shreds of skin left, probably what attracted the eagle. A little further, near a large white rock, we find the campfire. The ashes are still warm. No doubt, there are men here, and according to Yul, there are three of them. They must have slept here before leaving not long ago towards the setting sun. At this stage, it's difficult to know more and understand their intentions.

Three against three, it's not too risky, and we decide to follow their trail. Since they don't even have half a day's head start, and the sun is still high in the sky, we can hope to catch up with them. The trail is fresh. We pick up the pace to get closer to the group of strangers. A rocky bar suddenly hides the landscape on the west side. We climb up to the top; from there, a slightly greener landscape appears, contrasting with the dried-up, stony bed of the winding stream below. We still don't see the mysterious men. There are many flints on the ground with stone fragments and, also, an unfinished arrowhead, probably abandoned because it was too imperfect. It is not shaped like ours or like the Kers' arrows. Just as we wonder who could have carved these stones, Yul signals us to stop moving. Someone is watching us. We don't have to wait long.

A few hundred strides to our right, three men appear; two of them, bearded and unkempt, have a sturdy appearance. They are armed with heavy stone clubs and thick spears with fire-hardened tips. They also have broad chests and powerful legs; the thick furs they are wearing make them even more impressive. I recognize them, they are the elders, the ones I saw during my last hunt in the great valley. The third one is more slender and taller. He resembles us a bit and is armed with a single spear. The three hunters

probably also have knives, but they are concealed in their furs and cannot be seen. In any case, the group shows no sign of wanting to attack. On the contrary, one of them makes a gesture. We must approach.

*We make contact.*

One of the elders starts speaking a few words in a hoarse voice. I don't understand them except for 'Thul,' which seems to be his name. Clearly, he is the leader. Then the one who resembles us introduces himself. His name is Maan. To my surprise, this time I recognize some of the words he uses. I understand suffering, illness, female, and decide to follow them.

*Elders' camp, same day.*

Night has not yet fallen when we arrive. A woman with a worried look spies on us from the entrance of a hut, next to her two frail children. Apart from them, near the water's edge, two men are busy disarticulating and skinning what looks like the carcass of a small deer. The stone blades cut through the flesh and tendons with surprising ease, and the work is already well advanced. A woman scrapes the skin near the water, while other carries pieces towards the campfire. Everyone seems tired. I see only three huts.

Maan signals me to follow him. In the largest one, a young woman is lying down. He utters a few words: Nya, sister, Thul's daughter. I understand. Maan and Nya are Thul's children, their leader. Apparently, he no longer has a wife. Under the fox skin cover, one can tell that Nya is tall, at least as tall as Maan. Her face is not like that of the elders, but not exactly like ours either, youthful, delicate, fair complexion with small dark spots on her cheeks, like those that adorn some animals. She inherited her reddish-brown hair from her father; it is stuck to her temples by the sweat running down. I know, it's fever. On her damp neck, a simple necklace of white limestone beads accentuates the whiteness of her skin; in its center, wolf teeth frame a small stone that shines like the sun, the ones sometimes found in the river.

We sit on the ground, and Maan begins to speak. There are words like ours that I can understand and others that are completely incomprehensible, too different. With a few gestures, everything becomes clear. A severe fever, for several weeks now. Having neither herbal potions nor healers, they didn't know what else to do. Desperate, they thought of us, the men from the valley. Eagle, campfire, that's right. They did everything to attract us here in the hope that we could heal Nya. Maan takes his sister's arm and calls her softly. He shakes her, and she opens her eyes. He speaks to her; she turns her face



towards me and stares at me incredulously. A new man who resembles her mother! Her gaze is so clear, so deep and penetrating that it's hard to sustain it. I have only known her for a few moments, and yet she becomes very important to me. Her eyes have translucent green and light brown glimmers like I've never seen before. They remind me of the small pebbles with shattered faces found in the river. It's as if she's trying to read me, to verify what I'm thinking; yes, I absolutely must help her. Nohr will know better than anyone how to treat her, cure her, but we must not wait because she is very weak; the food placed next to her hasn't even been touched.

*Evening.*

All that remains of the Bear clan is gathered around the fire, except for Nya who is lying down. The grilled meat is ready, almost charred, and we share it. The elders eat by cutting big chunks of meat with their teeth using a knife; they also offer us pre-cracked bones that release succulent marrow. One of the women is busy throwing stones from the hearth into a skin bag. It's a broth made with the best pieces of the last game, probably for Nya. Maan explains; he crushes grass between two stones, pretends to bring it to his mouth, mimics a healer, points his hand towards us. Thul looks at me, and I give a nod of approval. He understands and speaks to the men; I can guess what he's proposing. They quickly agree. We will sleep here, and the next day we will bring Nya back to the valley for treatment. Maan will come with us.

*Next morning.*

The daylight drives away the night, gradually invading the sky from the east. The men have prepared a kind of stretcher with two large splints on which they have stretched a thick hide. Above it, they have placed a bed of dried grass, moss mixed with lichen. Maan and Thul go to fetch Nya. They place her on the stretcher and cover her with a thick fur. She is almost unconscious when we set off.

*Immersed: I am Nya, Great Cirque, the Eagle clan's camp, one week later.*

I must have slept for a long time. I dreamt that I was being carried, shaken. Later, I was forced to swallow a bitter and strong drink. I wanted to refuse, but I ended up taking it, and then I drank more, this time water, a lot of water. I open my eyes slightly; this is not my home. From the bed where I am lying, I see the ceiling, half pale rock, half deer skins. A fresh resinous scent fills the room; it comes from a small hollow stone container placed on the ground.

Small fragments resembling bits of bark slowly burn inside, releasing thin light gray curls of smoke. Another change, this time in my attire. I am dressed in a fine silver fox fur, soft, supple, and odorless, a sign that it has been well prepared. Inside it, I neither feel hot nor cold, at least no more fever. My necklace? I reach for my neck, it's still there.

At that moment, the large skin covering the entrance opens slightly, it's Maan. He is surprised to see me in good health. After propping me up slightly and sliding a rolled-up fur under the upper part of my back, he goes out and calls. He quickly returns with a new man. When he leans over me and places his hand on my forehead, his face seems familiar, I remember, I have seen him before in my dreams. He's the one who made me drink; he must be their healer. He looks pleased, tries to speak to Maan, to explain that the fever is gone, that I have returned from the spirit realm. His name is Nohr. From his expression and gestures, I understand that he is trying to reassure me. He also wants to convey that I need to drink and eat to regain strength. As soon as he leaves, Maan explains the situation to me; the Bear clan has accepted his idea of going to find the new men in the valley. Ogh, their leader, has offered to welcome me into their camp. My brother pulls back the skin covering the entrance of the shelter. Dazzling light floods the interior, and I catch sight of the river, then just behind it, a tall cliff with a large cave entrance two-thirds of the way up.

### **together stronger**

*I am Nya, in the Eagle clan settlement, first season of falling leaves for Ogh and his people, fifteenth of September in the Western calendar.*

I have been at the Eagle clan settlement for half a moon. Day by day, I have regained a taste for life and started eating again. Now my strength has returned, and I'm eating almost normally again. I am still in the large shelter. Maan explained to me that it's where Ogh lives; he went to his brother Thor's place to make room for me. As for Nohr, he assigned Kena to watch over me and ensure that I don't go outside and continue to drink all the potions he prepares. She sleeps beside me and must stay here until I'm completely healed. Her husband, Brah, is the stonemason, preparing knife tips and scrapers. Now I go out into the settlement every day. At first, everyone looked at me curiously, especially the women because of my hair. Their own hair is dark brown, almost black, with lots of small tangled and curly strands going

in all directions. They try to pull on them, twist them, gather them into braids tied with small bands, but nothing works, and most of the time, their hair remains disheveled. To fight off the little creatures that scratch, they use a mixture of ochre, white ash, and another substance. Kena still provides it to them after preparing it according to Nohr's instructions. Others coat their hair with a mixture of grease and wild honey to make it shine. At first, they refused to believe that the reddish-orange color was my natural hue; they tried to figure out how I managed to straighten their hair. It was only when I went with them to the river for the first time that they understood I was telling the truth. Another topic of astonishment was why they cut it at the base of the neck.

On his side, Maan quickly adapted to the hunter's way of life in the Eagle clan, and he communicates well with them. The men were amazed by our story, the blood of our mother mixed with that of the elders; they thought it was impossible. Since my brother went hunting with them, he has been accepted by all. They have witnessed his special gift for sensing, tracking, or driving game, his skill in handling the club, like our father Thul. I owe my life to Maan, Nohr, and Ogh.

I see Ogh very little. He is often out hunting or sitting alone on a stone table perched on the cliff. In the settlement, they call it the Eagle's Balcony. It is the former nest of one of the birds of prey that guided them here. Brah explained to Maan as best he could their entire history, the Kers, the escape, the death of Leor and the children, Ogh's despair and solitude, the Great Stag clan becoming the Eagle clan. He also spoke of Ogh's courage in hunting. I would like to talk to Ogh, but whenever I try, he evades me. When he passes by me, he looks at me in a strange way, as if he's afraid to talk to me. It's as if everything stops within him for a moment. He doesn't move anymore, as if he's lost, like a deer that, feeling trapped, pauses before resuming its frantic run. Shortly after, he composes himself, regains the appearance of what he is for the clan, their leader.

Maan and I have found a warm welcome at the great cirque. The women and children of the settlement have helped me learn the first words, words that must resemble those my mother used. I know how they name the wind, the sun, the sky, the rain, the fire and wood, the water and the river, the cliff, the animals of the forest, the furs, the skins, the bones, and the flesh we eat, all those words that denote what surrounds us and upon which our survival depends. I have also learned how they live, how they interact with each other. What I have also understood is that everyone admires Ogh, and everyone

respects Nohr.

*A sunny morning.*

Ogh arrives with Maan. He asks me to follow him. We cross the river and then climb the steep, rocky slope that leads to the entrance of a small cave. It is located about twenty steps away from the Eagle's balcony, a little further and not as high. Nohr welcomes us; the room is not very big and only three or four men could take refuge there in severe cold. In one corner, there is a bedding, against the wall are racks on which herbs are drying, further on the ground are bark containers, some naturally hollow flat stones with pebbles from the river in the middle. In one of them, I recognize the orange color of ocher powder, in another there is a mixture of crushed plants and mushrooms.

Nohr invites us to sit on logs placed around the extinguished hearth. He speaks, explains, and supplements his words by showing me plants, mixtures with a slimy appearance, and decoctions made from roots. I recognize the color of the one I used to take every day, which had such an unpleasant taste. He speaks slowly so that Maan and I can understand and complements his words with gestures. According to him, it's the rotten flesh that would be the cause of the illness. Then he hands me a small pot carved from wood, it contains powder. If the illness were to return, I would need to mix it with water and swallow it. Ogh and he address Maan. I understand that they are talking about the Bear clan, climbing the cliff towards the setting sun, walking as well, Thul, my father, the promise that I would come back once healed, the time has come.

We go out. While Maan goes back down, Ogh takes me to the Eagle's balcony. When we reach the rocky belvedere, there is barely enough space for two, and I must bend my back and squeeze against him. The view is breathtaking. From our observation post, we can see everything: downstream, the meander of the river that disappears into a rocky bottleneck, across from us, the camp at the foot of the western cliff flooded with the light of the rising sun, on the right, the entrance to the Bear's cave with the path that leads to the eastern plateau, and further upstream, the curves that the riverbed makes until the big stone arch. Only the top of it can be guessed. Ogh also points with his left hand to the plateau of the setting sun. Friends, we can be friends, if me and mine need help, he will be there, I will be able to come back and see him, I will always be welcome. For the first time, he looks at me.

*Immersion: I am Nya, the Bear clan's camp, plateau of the setting sun, third week of September.*

Yesterday, Ogh and Thor accompanied Maan and me back to the camp of the elders. They offered presents to my father, furs, and dried meat. I hadn't seen him so happy in a long time. Last night was a celebration, Ogh and Thul side by side, all the men, women, and children gathered around the fire. When I reached my hut, my father stayed with Maan, Ogh, and Thor until late into the night.

As I got up this morning, in the sunlight, I realized the misery of my clan, the extent of our deprivation, hidden yesterday by the celebration, masked by the darkness of the night. Our hastily built huts resemble more of a temporary hunting camp than the main dwelling of a true clan. On bad days, our shelters are beaten by the wind and infiltrated by the rain. I feel pain for my people; this despairing landscape, this nature that gives us so few resources, the meager harvests, the too scarce game, undoubtedly what awaits us in the long run is hunger, exhaustion, and then death.

Again, last night, I heard the wolves calling and responding to each other, with calls higher or lower as if they had their own language and a leader. Winter will come soon, and we must be careful. Their animal instinct is formidable. When the dominant wolf senses that the prey is weak, then the pack attacks. By getting to know the new men from the great cirque, I understood that another life was possible. They managed to get out of a difficult situation thanks to Nohr and Ogh. They were fortunate to find the valley and had the courage to settle there.

*Next day.*

It's over, they have left, taking a part of me, my mother's part, the part of the new men. I feel like I could live very well with them, but I also love my people. When they were about to leave, Ogh looked at me. I handed him a bracelet for Kena, and my father gave him ivory, one of the last precious possessions we have. My brother escorted them with another elder to the outskirts of the cliff. I would have liked to follow them too, but I didn't dare.

Maan told me about it when he returned. Before parting ways, just before descending the cliff, Ogh showed him the two bends upstream from the Eagle clan's camp and the big stone arch. At its feet, there is a space much smaller than the great cirque, but it could be sufficient for the Bear clan. Spending the winter there would be less dangerous for them; it would just be for the duration of a season, a temporary settlement to allow them to

regain their strength before embarking on their new migration towards the west. The elders and the newcomers would neither be too close nor too far, but a decision would have to be made quickly. The leaves of some trees are already starting to fall, and there is no fresh grass left to graze. Soon, the white grains could begin to fall from the sky, erasing the colors, covering everything with a white blanket.

*Ice season, January for the West.*

Finally, the two clans agreed, and mine settled near the grand arch. They started hunting together on the eastern plateau and were able to stock up for the winter. It's very cold this year; Ogh and his people joined the Bear cave, but our clan preferred to stay below. We are six males, three females, and two young ones. Despite the snow and ice, our hunters continue to go up to the plateau, mainly to keep themselves occupied because the game is still hiding in shelters.

*Immersion: deep-diving mode, I am Nya, the new camp of the Bear clan, the second budding season at the great cirque for Ogh and his people, the first for the Bear clan at the grand arch, spring of the Western calendar.*

Now that it's the season of plant renewal, everyone has resettled at the bottom of the valley. One day, I suggested to Maan to invite Kena. She came with the herbal potion prepared by Nohr, the one that gets rid of parasites. Since then, our women no longer spend their time scratching and picking lice, and as a result, their hair is better kept. Later it was me who was invited; among females, we compared our ways of applying ochre on the face, discussed how to prepare meats and broths, take care of the young ones, pierce hides with bone punches, or sew clothes. Afterward, the men from both clans met. They started comparing their respective ways of making weapons and tools. Our scrapers are sharper than those of the newcomers, and our stone cutter, Guk, can make more than ten tools in a day, while Brah sometimes takes over half a day to make one. We also explained to the men from the great cirque how to prepare birch resin, which is used to attach arrowheads before tightening them with thin strips of sinew. With the arrival of warmer days, I visit the camp of the great cirque more and more often. Kena is pregnant, and now I take care of her in return; she should give birth in three moons. Sometimes I come across Ogh.

*A spring morning.*

I came to collect tall grass by the river, the same ones that Kena taught me to braid, weave, tighten, and intertwine. Among them, even the children know how to do it. Afterward, we can make small baskets or mats that serve as bedding. I find myself halfway between the two camps. As I lean over the water's edge, busy cutting very long stems at their base, I suddenly feel a presence behind me. I startle and turn around abruptly, it's a man! I know well what they do with females when they catch them by the river. I've seen it several times before, bodies pressing together, grunting, jerky movements, bodies separating, the male and female going their separate ways like other animals do. I have never been with a man, and I won't let it happen. I've already grabbed my hand axe, but this time I made a mistake. With the sunlight, I didn't recognize Ogh. He smiles, looks at my work, picks some reeds himself, crouches down, and awkwardly attempts to weave them. I show him how to do it, my hand on his wrist. He touches my hair, sliding a red strand between his fingers, utters a new word I don't know but can guess the meaning of. Close to him, I feel good, unafraid.

*Same season, a little later.*

Ogh and Thul, my father, have come to an agreement. Everyone in both clans now knows that I will be Ogh's companion. Me, the chief's daughter of the Bear clan, will be the companion of the chief of the Eagle clan. He saved me, welcomed us into the valley, he is brave and valiant, I can trust him. Tonight, I will share his bed. It's a new hope for the clan because one day, I hope, I will give life to the future chief. Of course, as soon as the arrangement was made, Ogh wanted to inform Nohr. Before going up to the cave, I put on a panther-skin tunic cinched at the waist with a leather strap decorated with small white beads that match my necklace, which Kena adorned.

Nohr seemed happy to see me. He took us to a chamber I hadn't seen the first time; I didn't even know it existed. Ogh placed the torch against a stalagmite, and on the illuminated wall, I saw a collection of handprints, some alone, others in pairs, and even a very small one, as small as that of a newborn. On the ground, a bark cup contained colored clay, dark red ochre. After putting some in his mouth, Nohr took Ogh's hand and pressed it against the wall, fingers spread. He then spat the colored mixture from right to left, left to right, bottom to top, and top to bottom to mark the outlines clearly on the wall. Then he did the same with me, so our two handprints joined together. Nohr whispered a few words, chief, flesh of the flesh, child,

great hunter. Now I am one of them, bound to Ogh forever, and he to me.

## **maternity**

giving birth

*I am Nya, Underground, Nemo lab, immersion time: 0h 45mn.*

It's the third hot season at the great cirque for Ogh and his people, and the second for the Bear clan at the grand ark. Kena has explained everything to me. It's tonight, and my water has already broken. I'm lying on a bed of dry grass in the very spot where I slept when I first arrived here at the Eagle clan. I eagerly await delivery. Ogh moves aside the animal skins of the shelter so that I can catch a glimpse of the starry sky. The coolness feels good. The small box made of boxwood, hollowed by the fire and placed on the ground, contains the healing and disinfecting paste prepared by Nohr from wild leaves and berries. It will be used when the cord is cut. I'm a little worried because in our clan, the elders' offspring have been like a curse. The few unions between the elders and the newcomers have resulted in stillborn children. Maan tried to reassure me, reminding me that I'm only half an elder.

It's long, too long. Outside, a light breeze has arisen. The labor has begun. I'm squatting. Kena encourages me. Pain, delivery, relief... Kena shows me the newborn; it's a little girl. Using a sharp flint blade, Kena skillfully cuts the cord. She ties it and applies the ointment, washing the baby with warm water prepared by the women, and then hands her to me. I'm so happy; she squirms, full of life. I have her in my arms, so much joy. She looks like me, she will resemble me, she will resemble my mother, Thul, and Ogh.

Just now, he enters. I see a very brief shadow of disappointment in his eyes, but it quickly fades away. After all, I'm young, I'll have other children. When he takes our daughter in his arms, his face lights up. She starts to cry, her little body attempting its first movements. Dazzling, the miracle of life. I feel proud; I am a mother. Ogh wraps the newborn in a soft, fine white fur; he carries her gently in his strong arms. Outside, everyone is waiting around the large fires they have kept for this occasion. When he emerges from the shelter, all eyes turn to him. In accordance with tradition, he lifts the infant in his arms as if offering her to the sky, inscribing her in nature. He welcomes Ela into the clan; that will be her name, and she is a girl. Just as disappointment begins to invade the hearts of the men, the dark night



suddenly adorns itself with a burst of shooting stars. For them, it is a sign from destiny. Barely have the fleeting trails of light vanished when a second burst streaks across the sky, and a resounding cheer of joy fills the air.

### **sacred cave**

*Immersion: I am Nya, great cirque, camp of the Eagle clan, two lunar cycles after Ela's arrival.*

Ela is doing well; she fully intends to live. I have abundant milk, and she often demands it. When I wake up in the morning with the sun, Ogh has already left, but he takes care of me a lot; he is attentive. When he doesn't bring wild berries, he brings other gifts. He has given Ela a necklace made of wooden beads mixed with balls of colored ocher hardened with resin. Today, we will see Nohr. I climb the slope cautiously, Ela in my arms and Ogh following me. The sun brilliantly whitens the rock face, revealing all the details, crevices, and recesses where yellow-beaked choughs nest. The last part of the journey is very steep, and I must be careful not to slip. We arrive at the entrance. Nohr isn't there. The sole occupant of the place, nestled in a hollow of the wall near the ceiling, is a snoozing owl; it clears the area of unwelcome guests like snakes or spiders.

A hesitant glow begins to light the passage to the handprint room; it's Nohr coming with a torch. Of course, like Ogh and all the other men, he would have preferred a male child, but when I present Ela to him, the emotion is evident on his face. He looks at her, looks at me, compares us, and in his deep, gentle voice, he announces that she will be beautiful like me. Ela has stopped crying; it seems like she's listening to him. Getting caught up in the game, Nohr speaks to her. We are now in the handprint room. Ogh has taken Ela in his arms. I recognize ours. As Ogh gently takes the little right hand and places it on the rock next to our imprints, Nohr dips the thumb of his right hand into the ready, thick, reddish-brown mud and traces the outline of the tiny fingers.

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## ANIMAL AGE

### REINDEER'S CLAN

#### **singular**

*I am Joy, from the Ocean Dome, Nemo Project, elapsed experiment time: 0 hours 49 minutes. Immersion: I am Ela, ten years old, the great circus, the thirteenth hot season for the Eagle Clan.*

It's summer, the time of innocence, children's games, the wonder associated with the discovery of nature, the time when we are neither responsible nor subject to the restrictive rules of adults. Tonight, the moon was at its smallest. Since I was born, a long time has passed, many cold seasons, as many as the fingers on both my hands. The men returned from hunting yesterday, and today they rest at the camp. The women are busy by the river, and children are playing by their side. Nera had five little ones, two of which are still alive. In the end, the elders stayed. Maan found a mate who gave birth to a male cub, Yon. He was born just one summer after me. Today, we play by the river, right at the point where the passage to the Couchant plateau begins, the place where my mother Nya used to live before settling in this valley. At this spot, the canyon narrows, and the water must pass through a short and narrow slope.

From one rocky ledge to another, it pours into shallow pools and deeper stone basins. When the river gets angry, the water starts spinning and in turn makes the round stones at the bottom spin. Then the water eats the stone, at least that's what Nohr explained to me. He says that it is also the water that formed the great cirque and made the big hole in the big arch. It's the water that created the caves, the Bear's cave, the sacred cave where Nohr lives, by trickling down. Of course, all of this takes a long time, much longer than the lives of animals and plants, much longer than my own life. When I told Nohr that I also wanted to make holes in the stones faster than the water, he sent me to see Brah. With the stone used to make arrows, he scratched a white stone from the valley, and I understood. He specially cut a long and thin blade for me. By pressing and turning, I managed to pierce a first stone, and then I managed to make a whole necklace for my mother.

The river is calm; downstream, in the last pool, the grass is reflected in the water, and so am I. As I lean over to see better, Yon throws a stone. Done! My reflection blurs in the ripples and undulations. I decide to get revenge,

grab a handful of muddy soil at the feet of the reeds, and throw it at him. Furious, he starts yelling before diving into the water. I burst out laughing. He claps his hands to splash me, and I join him. The cold water feels good. After shaking ourselves off and getting thoroughly wet, we come out, jumping from stone to stone until we reach a downstream passage where a trap is submerged. We made it ourselves by crossing the reeds, just like the women in the Eagle clan do.

Three little fish trapped inside try in vain to escape. Yon lifts the basket and overturns it onto the bank. As they wiggle, they shine in the sunlight. After twitching two or three times, they finally flip over and stop moving. We eat them, two for Yon and one for me. Fishing in the valley is all we can do for now because the adults don't want to take us up to the hunting grounds. They say we are too young, and they also refuse to let us go up to the big cave without them. I like the water; I like the river. My mother says that this one is very small. Where Thul, her father, used to live, the river was so wide and deep that its waters could have filled our entire valley up to the plateau. The fish were so big that with just two or three of them, everyone in our clan could have eaten their fill.

*Late afternoon.*

It's time to go back. Yon to the camp of the great arch and me to the camp of the great cirque. A little while later. I'm going up to see Nohr. He's always happy to see me. I'll bring him some food prepared by Nya, a very tender meat cooked in a broth, mushrooms wrapped in herbs. I also must give him the plants that the women gathered for him on the plateau. Finally, I want to show him the beautiful sand that Yon and I found further up the river, well past the camp of the elders. It has a beautiful yellow color, like light ochre. Nohr can explain all sorts of things to me, like how shadows move and how they change with the seasons. He shows me with a stick planted on the edge of his shelter. When the path of the sun becomes low in the sky, then the cold days will come closer.

The night will arrive earlier and earlier each day, the leaves of some trees will fall, but not all of them because some know how to withstand the ice. The animals of the plateau will start looking for shelters, holes, burrows, hollow trees, caves. But that's not for now, as the weather is still mild enough. Today, the sky is blue, and the yellow ball of the sun still follows a high path in the sky. Every time I visit him, Nohr teaches me something new. I already know how to do everything that men learn in their young age, the two

different ways to start a fire, by quickly rotating a wooden stick against a rock or by repeatedly striking two specific stones together, flint and marcasite. It creates small sparks. When I place a small ball of tinder made from lichens collected from dead trees and dried grass next to it, and blow gently with my mouth, the fire ignites. When the first flame appears, it's like seeing the sun rise in the morning. A birth, a new life.

Knowing how to start a fire is crucial. It helps repel wild animals at night, hardens spear tips, heats meat and broth, keeps us warm during the night, and illuminates the dark caves where we take refuge when the icy season arrives. The elders also teach me all sorts of techniques, like how to prepare the adhesive used to glue arrowheads, the pitch. It requires great care, heating birch bark just enough and protected from the air. I enclose the bark in clay and then collect the liquid pitch at the right moment. I've just arrived at the entrance of the cave. Nohr is busy gathering supplies, probably to prepare a cauterization treatment for the hunter who got injured. He took one of the stone bowls that I carved with a flint at Brah's. He turns around and I hand him the still warm container that contains deer broth, the small woven baskets containing the harvest, autumn roots and tubers that grow in the ravines, the ones so appreciated by wild boars, juniper seeds, mugwort, mushrooms. He places the mushrooms on racks leaning against the wall behind the hearth; they will dry slowly there.

Without further delay, Nohr invites me to help with the dressing preparation. I haven't forgotten what he taught me. I crush together roots, small black berries that smell strong, and birch sap. I also add a little honey and pine resin. The paste is thick enough, and I place it in a small wooden cup. I'll give it to Kena later, and she will apply it to the wound. She will then cover it with a leaf pad held in place with a soft leather strap. The injured hunter should recover quickly. Now Nohr wants to show me how to prepare the mixture of ochre and ash used during clan gatherings.

## **first trophy**

*Immersion: I am Ela, I'm fifteen years old, the eighteenth season of falling leaves for the Eagle clan.*

I have grown a lot, and I am now taller than my father. Yon is as tall as his father, Maan. He spends most of his time with the men, learning how to prepare and handle weapons. As for me, I learn the art of hunting from Maan.

I have become very skilled at throwing javelins. When I visit the elders, I am always warmly welcomed. With Yul and Gon, Thul's two favorite companions, I have learned how to harden spearheads in fire and how to carve arrowheads most effectively. Today, I am sitting in the spot my father often occupies on the Eagle's balcony. Now that I have grown up, he allows me to go there. Like him, I contemplate.

In the camp, I see Nya and Vir, my brother who arrived three winters after me, perhaps our future leader. In addition to us and Yon, there have been many other children in the two clans, and even though not all of them have survived, the future is now secure. We no longer speak of past misfortunes at the Eagle's camp. With the men, I have learned how to handle weapons, and with the women, I have learned to manipulate the tools needed to scrape, cut, or punch holes in hides. I also know how to sew clothes and weave reed mats from the river. Nohr has shown me the power of plants and has told me the history of the clan. However, there is one thing I absolutely want to practice: hunting, even though Yon constantly tells me it is an activity reserved for males. Today, I went up to the plateau with two other women to gather pine nuts. Yon accompanied us as if I couldn't defend myself. He acted like the leader, even giving orders to the women. I don't accept that. I didn't listen to him and headed towards a place I know well. Nohr used to take me there when I was a child, when he could still climb the cliff. That's where we find the most mushrooms. This time, I brought back a large quantity, enough to give some to Nya and Nohr.

*A little later.*

It was only two days later that Yon went on his first hunt. The men left early, and my father didn't want me to follow them. When they returned, I saw them pass by the entrance of the Bear's cave, carefully descending the steep path. Two of them were carrying a deer. Yon was excited and proud because he had killed the animal, but it was just a small doe, an easy prey!

*My turn.*

It's the rutting season for deer. For several days, we've been hearing their hoarse roars; they seem to come from the north of the plateau. It's not so common, and the men are getting ready to leave. Tomorrow will be my first hunt, and I'll be able to measure myself against the men. It's been about a month since Maan and Thul tried to persuade my father to initiate me into hunting, day after day. Finally, he agreed on the condition that Yul, his

lifelong companion, accompanies us. Maan asked Gon, the best hunter from the Bear clan, to join us. He is an exceptional tracker and incredibly strong. From the way he looked at me, I understood that he wouldn't lose sight of me, like Yul. Tonight, I went to see my mother Nya. She seemed worried but not surprised.

*Dawn.*

The first pale light, announcing the sun. As we arrive on the plateau, above the Bear cave, the daylight is still weak, but we can see enough to notice that many wild boars have come into the ravines during the night; the ground is scraped, plowed, trampled. They're not what we're interested in. We head north, and it's getting brighter. In the east, the sun's disc rises above the horizon.

We've been walking for quite some time when the terrain starts to slope up, and the trees become more numerous and taller. There are now small groves, streams, and water points. The men have decided to split into three groups to increase their chances. I am with Gon, Yul, and Maan who leads the way. Suddenly, he stops and discreetly signals us to stay still. A few hundred feet below, in the middle of a valley bordered by groves, a solitary male is busy feeding near a large tree. Sometimes he grazes on the ground, other times he tears bark off the trunk. The animal must be quite old as its antlers are large and well-branched. Around its dark mane, its fur has already started to turn from reddish-brown to the gray that will be its winter color.

We look at each other; it won't be an easy prey. Maan hesitates, afraid of disappointing me, then decides. Gon will help me. We both crouch down and start approaching cautiously. Halt. I fix my gaze on the animal through the tall dew-covered grass. It's at that moment that a small wild bee already in search of flowers brushes past me. Instinctively, I move and brush against a bush branch. The slight rustle of the leaves alerts the beast. One of its ears pricks up. It turns toward us, stops chewing. We don't move, and I hold my breath.

Soon reassured, the male resumes chewing. Gon gently taps my arm and points to his shoulder. I understand, I know, aim for the bleeding of the front leg. That's where we have the highest chance of killing it instantly. With a little luck, the javelin can reach the heart. I stand up and make two leaps in the open to get closer one last time. The beast turns around, it has seen me. I need to act quickly because large males can be very dangerous. Firmly planting my feet to generate maximum power, I aim and propel my weapon.

The weapon hits the right spot. The animal stumbles and collapses on its front legs.

Gon shouts at me to step back; the beast with its antlers is dangerous even when severely wounded. He hands me another javelin, and I shoot again, this time in the flank. The blood starts to flow abundantly. That's enough, Gon and Yul refuse to let me take any more risks. They advance toward the mortally wounded animal, wielding their clubs, and deliver terrible blows, smashing its head behind the antlers. A few convulsions, and it's over. The men are relieved, Maan pats me on the shoulder. We slit the throat of the deer with knives, I start sawing off the antlers, we devour the liver and drink warm blood. Then we skin the animal and take the best pieces from the carcass. As we return to the grand circus, we meet the other two groups of hunters. They haven't come back empty-handed either.

*Back at the camp.*

The hunters recount the day. They all praise my behavior and explain that I can hunt as well as a man. The news quickly spreads to both camps. When I find my father, I see pride on his face. I will hang the antlers at the entrance of our hut.

*Following days.*

The men look at me differently now. For them, I am now as much of a man as a woman. Yon was initially perplexed and spoke of sheer luck because he was offended, but he started talking to me again.

**succession**

tragedy

*Immersion: deep-diving mode, I am Ogh, experience time: 0h 53mn, the beginning of the eighteenth ice season at the great cirque.*

From the middle of the camp located in the great cirque, I can see the entrance to Nohr's cave. It is already completely covered with hides to protect it from the wind. The winter season is coming soon; a light snow has already covered the ground, and we can expect the return of the bears to the cave. We could try to drive them away with smoke, but the air circulation is not favorable. Living in the cave with them no longer worries either the Eagle

clan or the Bear clan. The elders view the large bears differently from other animals; they believe that they will join us after leaving this world.

Today, there is something else that concerns me. Last night, the wild dogs that roam near the camps howled to death. We immediately rekindled the fires. Everyone heard it. Shortly after, there was a yelp and brief whimpers that were quickly silenced. In the morning, we found one of the wild dogs almost completely devoured, along the path that climbs to the cliff between the river and the top of the scree, a little below the balcony of white stone that marks the entrance to the bear's cave. Now that we no longer hunt, there are no more remains around the camps. It probably tried its luck by climbing up to the plateau; it didn't end well for it.

The women are very scared because the predator has come close, and that has never happened before. Thul just arrived from the great arch to tell me about it because the elders are also worried. They heard the cries of the wild dog, but also something else that awakened very bad memories in them. They all agree on the origin of this hoarse, powerful, and threatening growl. It's not just a simple leopard, but a cave lion, a large beast that doesn't hesitate to attack humans. I suggest to Thul that we go see Nohr.

We climb. Our companion is covered in two layers of fur, one made of fox and hare skins, and another thicker one that I gave him made of brown bear. He also confirms having heard worrying noises, but this time coming from inside, where the caves connect, deep down after the hall of hands. Specifically, it seemed to come from the narrow passage that then turns to the left. Its end is blocked by a landslide, but a small crack at the top allows air to pass through; from there, you can sometimes hear the bears growling when they are settled.

I light two lamps, and Thul and I venture forward. Upon reaching the chaos of rocks of varying sizes fallen from the ceiling and blocking the passage, a growl is heard, along with scratching sounds. Excited by the smell of humans and fire, the beast must be circling furiously, unable to reach us. We know enough; the animal has already taken possession of the place. One of our people must have forgotten to put the wooden gate back at the entrance of the passage while bringing up supplies for winter. Something must be done to quickly dislodge the animal. For now, I advise Nohr to go down to the camp, but he stubbornly refuses.

Our plan is ready. We have agreed with Thul and my brother Thor. Tracking the beast inside the cave would be too dangerous. Instead, we will wait for the beast to come out to feed. As long as the snow has not covered



the plateau, it will go there, and that's where we will confront it. Putting the gate back in place would not be enough because it would surely come back lurking around. The plan is to trap it with prey. We will leave a carcass and wait. It's a shame that Gon got injured because he is the strongest of the men. He slipped; his leg, while turning, put pressure on the foot caught between two stones. Nohr fixed everything, but Gon must rest for several days. We will do without him. Thor will accompany me with Yul, and Thul will join us with two other elders. Until the danger is gone, we will make sure no one leaves the camp.

*It's already been two days that we've been waiting.*

On the morning of the third day, our patience is finally rewarded. The beast appears, head lowered, a long tail dragging. It's a lioness as big as the ones I sometimes encountered in my previous life, in the great valley near the great river. With its smooth gait, it heads north. We must stay together; the mistake not to make would be to stray too far from each other. Now that she has passed, we can prepare the trap for her return, a gutted ibex carcass will do the trick. We will place it on the path the beast takes to return to the cave, in plain sight on a white, flat rock.

*Late afternoon.*

She arrives. Truly, she is enormous. Apparently, the hunt has not been successful for her because the piece of meat catches her interest. She approaches and sniffs the carcass, a stroke of luck! Hungry, she quickly plunges her muzzle into the still warm entrails, tears the viscera with her fangs, pulls out a head covered in blood. She looks right and left. No other predator is in the vicinity. Assured, she calmly resumes her meal and tries to dismember a leg from its powerful jaws while holding the rest of the body with her claws. I see the muscles of her hind legs swell, and I imagine the force with which she can leap. As soon as she senses our presence, she will attack, and we must make no mistakes because she could be on us in an instant. Partly satisfied or wanting to hide the bloody carcass, she starts dragging it toward the edge of the cliff. She probably intends to bring it back to her new den in the cave. It's the right moment. We are ready. However, the wind, which was in our favor and carrying away the smells, has calmed down. The lioness momentarily freezes, sensing something abnormal. I feel that she is ready to attack, stiffened on her legs; we can't wait any longer.

Thul gives us a sign, and our spears are thrown almost simultaneously.

However, it's as if the great lioness had guessed where we were and anticipated it. With a tremendous leap, she is already upon us. Only one throw hit its mark, striking the beast's flank; the javelin tore the skin but didn't penetrate. The furious creature finds itself in the middle of us and chooses. It will be me! Instinctively, I step back slightly, my spear forward, to protect myself. Bad idea, my left foot gets caught in a root, and I stumble. It's already too late to recover; the beast is on me.

The swipe is so powerful that the claws tear through the thick fur that covers me. The animal is enraged. I try in vain to free myself, but the claws



rake my abdomen. The pain is searing. The elders have pounced on the beast and are striking it from all sides in a confused melee, one driving a stake and the other delivering blows with a club.

A crack, Thul's stone ball from the club has just crushed the skull of the beast. The lioness falls back on me, and I feel her scent mixed with the smell of blood. Man's blood, beast's blood. Mine flows abundantly from the burning wound. My

companions turn me over and lay me flat on the ground.

Bing.com / create, left prompt: prompt : paleolithic hunters fighting a lioness, snow landscape

I look at the sky, a great dizziness overwhelms me, animals in the clouds, I am going to join them. I did what needed to be done, I am Ogh, the leader of the Great Stag clan in the great valley, I had to protect my people. Up there in the sky, an eagle circles as if mocking me, perhaps the one I chased from its nest. I will never see the great river again. I was no longer strong enough; I meet the same fate as the other beasts in a final lost battle. Thus, do men end.

The grand scene of small and large animals in the sacred cave and all those who watch us at night from the sky, their eyes shimmering in the darkness, I will join them. Nya, Ela, Vir, one day they too. I can no longer see my companions. Nohr speaks to me in the cave. I am deep in the vast hall, a straight and illuminated passage, no need for a lamp. I advance alone, feeling good. The mist is white and light, I reach the edge of the great river, I see one shape, then two others. Leor with my first offspring by his side, nothing else.

*Immersion: deep-diving mode, I am Nya, the next day.*

It's cold. On the very evening of the tragedy, snow fell in large flakes, quickly covering everything as if to make us forget what had just happened. A pristine white blanket erased the blood and other colors of life.

When Thul arrived at our camp, from his expression, I immediately understood. The men entered behind him and laid the still bloodied body in the tent, on his bed, our bed. Sadness, so much sadness overwhelmed me. Tears flowed abundantly from my eyes, from mine and from Ela's and Vir's, from all the women and men of the clan. Silence invaded both camps, the silence of sadness responding to the silence of the snow that silenced all living beings. Ela helped Nohr descend from the cave. He insisted on going to the plateau to accompany his leader and lifelong companion to his final resting place. The ground is already almost frozen.

Our land of the dead is located on the plateau, not far from the caves, a little further south, near a large table of white stone with holes. There, the natural basins are human-sized, some for the great hunters, some for the women, and smaller ones to place the children. Usually, there are some lichens and low herbs, but today there is only cold snow and ice. Several of our people are already resting in this field of stones, two adults from the Eagle clan and one from the Bear clan, six newborns as well, gone too soon. All the men are here. My heart is heavy. Ela and Vir are by my side, the other women stayed in the valley with the children. Maan and Brah have just laid the stretcher on the ground. The men bring the white stones that will close the tomb; they are so heavy that no wild beast can move them. Nohr bends down and pulls back the fur that covers the body; my tears continue to flow. I feel Ela and Vir trembling, they cling to me. Ogh wears his hunting attire stained with dried blood, large brown stains covering the lower part of his clothes and body.

His face is still marked by a grimace of pain, his lifeless eyes frighten me. I hold Vir even tighter against me. Nohr leans over to retrieve the obsidian knife from the sheath attached to his belt, he hands it to Ela and then starts reciting a whole string of words in a low voice, speaking of the final hunt, courage, bravery, and the great chief who will join the animals and ancestors. Everyone listens. Thor and Maan take the carcass and place it in the stone hollow, curled up like a fetus, with the face towards the rising sun, towards the vast plain, the great river, the land of ancestors. The hunters place two spears, and Thul places an axe. Ela approaches. She removes the necklace her

father gave her at birth and gently throws it so that it falls at chest level. I step closer and place my necklace of beads, wolf teeth, and sunstone. I take one last look at the one who shared my life, saved me, and protected me. The wind picks up; snow whirlwinds begin to envelop us as if telling us to leave, to let Ogh join the spirits of all those he knew in his life who have already passed away. Thor covers the carcass with the lioness' hide, and then the other hides are folded over it. The men then pile up the stones. Brah clears away the snow that has started to cover the edge of the grave with his hand; with a steady hand, he carves a sign using a flint shard.

**I will do it.**

*Immersion: I am Ela, the great cirque, end of the eighteenth ice season for the Eagle clan.*

Outside, it's very cold. We have all gone up to the Bear's cave, even the elders. The days are short, and we are still confined to the cave. We'll have to wait for the weather to improve outside, for the ice and snow that still cover the valley and the plateau to melt. The men talk, huddled around the fire. The topic of all discussions: who will be the new chief of the Eagle clan? My brother Vir is too young to succeed my father. He needs at least three or four good seasons. Thul is too old, and besides, he's a true elder.

Nohr came to speak to the clan in the cave. It is now possible to go directly from his shelter in the sacred cave to the Bear's cave because we have expanded the passage. Even though it's narrow, we can squeeze through if we bend down. As for the choice of the new chief, Nohr advises us to wait a little. There's no rush, according to him, as long as the good days haven't returned. When nature comes back to life, we can decide. As for me, I visit him every day and spend long moments with him; we think about my father.

Since his tragic death, Nohr has changed a lot, and I'm worried. His broad forehead is marked with increasingly deep furrows, and he has hollow cheeks. Even the whites of his eyes, streaked with red, betray a permanent fatigue. His hair falls on his temples like dirty snow. It's only when I come to see him that his face brightens up, and I see the mischievous and curious look he used to have. Today he has decided to show me something he considers important. I follow him to the back of the cave. After the branching of the passage that leads to the Bear's cave, after the hall of hands, the corridor turns. I had never gone this far. The passage suddenly widens, and the ceiling

rises quickly. We enter a large, high-ceilinged room illuminated by grease lamps.

I have never seen anything so beautiful: stone stalactites hanging from the vault reach towards the floor, and others just below seem to want to join them by rising from the ground. Where the ceiling is lower, some have already merged to create columns. From the side, it looks like a pleated stone skin has covered the wall, somewhat like what my father showed me one day at the underground lake. But this one, ivory white with streaks of ochre, is also dotted with tiny points that sparkle in the light.

On the opposite wall, two men are working. I recognize them; they are Brah and his older brother Oryl. He used to hunt in the Great Valley with Ogh and Thor. Oryl is drawing on the wall, while Brah, squatting on the ground, crushes colors in bark containers. He outlines a strange animal that I don't know. Nohr tells me it's a horse, a creature that frequents the great plain, running very fast.

Next to it, I also see all kinds of other strange species, a herd of animals with two horns at the front, one large and one small, lion and bear heads. The dancing glow of the flames brings them to life; they seem to be running. Close to the ground, I recognize other more familiar animals, a hyena and two foxes, another bear, which lowers its head this time, and an owl, maybe Nohr's. He directs his torch towards the ceiling, and there I see a whole group of animals that resemble large deer but with different antlers. Their antlers curve forward. Nohr tells me they are reindeer and that they live in large numbers in the great valley. And then he explains that all the animals I see here are the ones that populated the land of the ancestors. I understand that this room is secret; only the oldest men know of its existence.

After arriving in the valley and discovering the dried-up secondary underground network, they decided to decorate this room, a memory, the spirits of the ancient beasts, the soul of the great plain and the great river, a means of maintaining hope of returning one day when they would be strong and numerous enough. The chief had promised them that one day they would leave again. The promise disappeared with him. Nya also knew about the return. Ogh was starting to worry about resources, and just before the hunting accident, he had decided to talk to the men of the clan, to explain to them that the time might have come to change territory like other animals do. Now it's too late. Saying this, Nohr looks at me, and I think I understand what he's thinking.

*I am Ela, the next day.*

I remember what Yon told me, how one day he decided to leave alone towards the side where the sun rises. He claims that after walking for days and days, he found a path to reach the great valley, not the one my father followed to reach the grand circus, but a path further north. From the last foothills of the eastern plateau, the ones overlooking the land of the ancestors, he would have seen the great river shining in the morning sun. Nohr, in the sacred cave, yes, that's what he was thinking. It is now up to me to bring the clan back to our former territory.

*Immersion: I am Ela, the great cirque, around thirty-eight thousand years ago, the beginning of the eighteenth budding season for the Eagle clan.*

By the river, where I used to play as a child, the grass is growing back. The animals are coming out again, and the bears have gone. In the valley and on the plateau, the buds are swelling faster than women's bellies. Soon they will open to reveal the first flowers. We are all back in the valley, the great cirque, and the great arch. The discussions about who will be the new chief of the Eagle clan have yielded nothing; the men cannot agree. Yet a decision must be made because impatience is growing.

When I climb to the Eagle's balcony, I cry, and I think about what my father said to Nohr: in a few years, the valley will become too small for all of us. Even by spreading the huts along the river, space will eventually run out, especially for game. Indeed, deer and stags are becoming increasingly rare, and ibexes and even wild boars will not be enough. Under these circumstances, the new chief will have to find a new territory. If I were a man, I would have already left long ago to explore the eastern lands like Yon dared to do. I am a woman, so what? I have waited too long! I also think like a man, as Vir would if he had a few more fruitful seasons.

In fact, I have already made my decision. It happened in the great sacred hall, in front of the animal representations, precisely when Nohr spoke to me. When he said "man," I understood that he was also speaking to me, and I thought strongly of my father. All those ancient beasts on the walls and ceiling spoke to me. They called me to reclaim the ancestral lands. Now my instinct drives me to return to the great valley, the grand river.

I am the daughter of Ogh, I carry his blood. I hunt as well as any other hunter. It's up to me to do it. I will give back to the people of the valley everything they have given to my mother, Nya. There will be more beautiful days, abundant game, and healing plants, all those that Nohr no longer has

and will find again. If necessary, we will fight; I am not afraid of the Kers, the man-eaters. The only problem is that I am a female. Yon, of course, he must be waiting for this. I will talk to him about it!

*Nohr's shelter.*

I find myself at the entrance of the vestibule of the sacred cave of the animals of our ancestors' land, near the hearth. The flames flicker. Watching them is a bit like talking to oneself. I talk to Nohr about my plan. He is not even surprised, but I sense his satisfaction and pride; in fact, this is what he was expecting. However, according to him, I must be cautious; Yon is brave, but he is very young and could take too many risks. He will try to shine in front of me, but courage is not recklessness and thoughtlessness. It's up to me to moderate his enthusiasm.

Nohr is probably right; he knows well how everyone thinks. He advises me to leave with my uncle Maan and another experienced man from the Bear clan, Gon would be a good choice if he agrees. Besides, neither of them has any ambition; they are not seeking to be a leader. Nohr will talk to Thul, who will try to keep the men patient until my return. Both the old and the new respect him since he saved Thor's life during the hunt. Nohr will also propose that the future chief of the Eagle clan be the one who can bring us back to the great valley. In the meantime, decisions will be made collectively by the elders. As for Nya and Vir, it is out of the question for anyone to try to drive them away from our shelter, the chief's shelter.

**revenge**

Target

*I am Joy, Underground, Ocean Dome, Nemo Project, elapsed time: 0h 59min. Immersion: I am Ela, the land of the ancestors, the great valley, on the right bank of the great river, the eighteenth budding season at the great cirque for the Eagle clan.*

After three days of walking, Yon succeeded. He led the four of us through a safe path that the other hunters of the clan could follow without risks if we ever had to return together. From valley to mountain pass and from pass to valley, we made progress without seeing a soul, crossing lands deserted by humans and with little game.

This morning is the reward for our efforts. We are on top of a hill from where we can see far into the horizon. The mountain slopes down quickly at first, but beyond the elongated foothills, glimpses of the course of the great river can be seen in some places. Further away, on the other bank, we can make out the great valley that Nohr spoke about, shrouded in mist. Behind that, in the distance, the peaks of large mountains, whitened by ice and snow, can be distinguished. We cautiously advance through the hills, avoiding the ridges. There's no need to hurry anymore; it's better to arrive in the evening. For those in the valley, we will be less visible then.

*End of the day.*

We climb one after the other a steep and rocky hill, topped with a few rare trees. Yon signals us to bend down to reach the shelter of a large rock. From there, the panorama is breathtaking; I have never seen anything like it before. The mist has lifted with the evening, revealing a vast stretch of elongated water. In some places, the river splits into several branches that then converge again. Just upstream from a fork, I catch sight of the large rock Yon mentioned. It stands on the riverbank like a kidney. In its hollow, I can make out the large shelter he spoke of. Open to the south, it must provide good protection from the cold winds that sweep down from the north when the weather is bad. To access it, there is only a steep slope facing the river, a refuge, of course, in case of an attack. As for the summit, it must be an unmatched lookout post. The exceptional layout of the place probably led the occupants to settle there because the best hunting grounds are on the other side of the river. The question remains as to who the occupants are, whether they are ancients, Kers, or simply men like us.

Twilight.

Several fires have been lit; their flames are already high. Men, women, and children are gathered around; well covered in thick fur, they are busy devouring large chunks of meat. Maan suggests that we spend the night here. For us, making a fire is out of the question, of course. We will take turns keeping watch, contenting ourselves with smoked dried meat. Instinctively, I adjust my fur. Yon tries to snuggle against me, and I push him away. He doesn't understand because there aren't many free men in our valley. I huddle between Maan and Gon, waiting for the new day.



*Next morning.*

We have approached the river. The weather is clear; the night wind has definitively chased away the remaining mists to the south. I observe the surroundings: everyone is going about their business. Women are going down to the river, which reflects the sunlight back at us. I also distinguish men gathering as if they were preparing to go hunting. There is no visible concern among them; they believe they are safe and do not imagine that any danger could come from those abandoned masses where we are watching them. The few narrow gorges that open onto the valley end in virtually impassable dead ends. The hunters have headed downstream to a point where the waters separate. Of course, it's easier to cross there. They put rafts into the water that were hidden under the trees, check the leather straps that serve as attachments. The partially sanded first bed is quickly crossed. The rafts are then transported to the main branch and put back into the water. Even from where we are, we can tell that there is a current. They set off diagonally, simply pushing the boats towards the other shore with bundles of wood. We quickly lose sight of them. The two rafts have probably already landed. This departure for the hunt is an opportunity for us. With minimal risk, we will be able to get closer and try to find out who these men are. Yon is coming with me. We descend, hiding from thicket to thicket, following the trail used by the hunters. From there, we get a good view of the entrance to the camp. It is marked by numerous stakes topped with trophies, alternating animal and human skulls.

*Two days later.*

The wait for the hunters' return has been long. To feed ourselves, we took advantage of some traps set by them, making sure not to leave any trace of our passage. This time it's good, they're coming back. We can see them on the opposite bank. They will do as they did on the way here. By going upstream, they will manage to dock at the starting point on our side. That's what's happening. They are very skilled and indeed succeed in coming back almost to their starting point. Meanwhile, we have positioned ourselves a bit further back in a place where we can observe them calmly. The hunt has been fruitful. The one walking at the front is obviously the leader. I have the answer, I recognize the characteristic way the Kers put ochre on their forehead, cheeks, and the lower part of their ears, the way Brah described it to me before we left. Behind, the others walk in pairs in a line. They carry a reindeer carcass and two deer hanging from large branches, there are also hides and

antlers. At the very end, a group carries the naked body of a woman. It's impossible to know if she's still alive. We know enough, we can leave.

*Immersion: I am Ela, we have returned to the camp at the great cirque.*

Nohr has descended, Vir and I helped him. It's important; the oldest and most experienced hunters from both clans are gathered here. There's also Gon, Maan, me, and Yon. They want to listen to us. Yon, very excited, describes the rock, the river, the large shelter under the rock that protects from the north wind, the abundant game brought by the Kers, reindeer, big deer. He extends his arms to show the size of their antlers. He also talks about the hot spring, the water that comes out of the ground not far from the rock and boils. We are asked many questions to which we try to answer. The skulls stuck on branches at the entrance of the camp, as well as the way of dressing and applying ochre, could indeed be distinctive signs of the wolf men. Thor asks if we have seen other nearby camps, if crossing the river is easy, and if we could see how far the water rises. He lived there before and remembers the power of the currents, the danger of floods when the ice further north melts and feeds the river. Everyone also wants to know what the shelter is like, if it's as deep as the Bear cave here. We answer that the entrance seems vast, much wider than the bear cave here. As for describing the interior, it's impossible for us. Personally, I think it's probably not as deep as here because the rock is narrower than our cliffs.

Do the big bears frequent the place? How can we know! The cold season has passed. We would have to enter the place to find out. How can we take possession of the rock? I brought a large, flat, white stone and a twig with a burnt end. I make two parallel lines for the two arms of the river, place some rocks to mark the hill where we observed them, another larger one for the big rock, and I explain my plan to them. When the Kers go hunting, the camp is guarded only by a few men, and when they come back with the rafts from the other bank, they take their time. They cross in two stages at a point where the river is divided into two arms, and in several groups of two to three boats, with one waiting for the previous one to dock before setting off. I place two new small stones to mark the spots where they embark and disembark. It would be enough to surprise them group after group. We would let them disembark, load the hunt, and start on the path that leads to the camp. Halfway, there is a suitable area for an attack.

I place another small stone with a few blades of grass around it. The vegetation is dense enough for us to hide in it. From the top of the rock or

from the other bank where they embark, they won't be able to see anything. We would have to strike quickly so they don't have time to alert the others with their cries. How many men would it take to carry out this plan successfully? Twelve. Now that they have listened, they will talk among themselves. Yon and I must leave, Maan and Gon will stay.

The two clans have spoken for a long time until they reached an agreement, all of them, the newcomers and the old ones. Nohr finally convinced them. We will mount an expedition. Whoever manages to bring us back to the great valley will be the new leader of our clan, which will become the Clan of the Reindeers. In case of failure, Thul and his people will return to the path of the setting sun. I don't want to lose Maan or any of the elders; we absolutely must succeed. We are ready, Yon and I, three from the Bear clan, Gon, Yul, and another one they will choose, four from the Eagle clan, two young ones, Thor and Lars. I don't like him; he aspires to be the leader. Barely had my father been buried in his stone hole when he tried to drive us out of our shelter, my mother Nya, my brother Vir, and me. Before leaving, Nohr warned me about him.

## **ambush**

*Immersion: I am Ela, the Great Valley, the eighteenth beautiful season of the Eagle Clan, the beginning of summer.*

For three-quarters of the day, on the right bank of the great river downstream from the Great Rock. Yon and I have been watching the spot where the Kers leave their rafts on the opposite left bank for two days. The first ones finally arrive; there are four of them. Two of them pull a first raft. I ask Yon to quickly inform the others, and I will stay here until they embark to find out exactly how many they are. We must act quickly because other men are already emerging from the vegetation cover with additional rafts; they drag them to the water's edge. We must surprise them as they arrive. Two first rafts are put into the water. The Kers quickly unload some of their belongings and embark. It seems like there are seven of them, and one of them appears to be injured. If everything goes as before, the leader must be in the lead raft. Ours are already lying in wait in the bushes along the trail. My heart starts beating faster and faster. The convoy of two rafts tied together is already halfway across the main arm of the river. In the lead raft, two men are busy directing the team towards the usual landing point. I can

now clearly distinguish the leader; in fact, he is in the second raft. It's time to join the others.

Well hidden, we wait firmly. I imagine the Kers calmly and confidently disembarking after crossing the first arm of the river without any problems. They should soon cross the second stretch of water. It's done, we hear them, we see them; the fierce-looking leader is in front, behind him, three groups of two carry, suspended on poles, everything they unloaded from the rafts. A final hunter limps at the rear. On our side, there are nine of us, and it looks good because the six who are busy carrying the loads will be easy to overpower. Moreover, completely absorbed by the joy of returning to the camp, feasting, and reuniting with the women, they surely won't be suspicious. The most difficult part will be to take down their leader. We wait as long as possible; the element of surprise is crucial for the success of the plan. We must not alert the others with any cries.

They are only about twenty paces away when Maan gives the signal to attack. We rush at them. The elders literally smash the skulls of three of the carriers with their clubs, one in each group. We pierce through the others before they have time to scream. The wounded are quickly finished off. The element of surprise is working fully. However, for the leader, it's more complicated. To demonstrate his strength and bravery, Lars insisted on dealing with him himself, but he missed. Worse, the furious leader, armed with a knife, has just rushed at him. As he is about to scream, I aim for his neck. He only has time to emit a hoarse sound before collapsing to the ground, pulling Lars down with him.

Maan comes to my aid, trying to separate the bodies, but it is already too late for Lars. His opponent's double-edged knife has slit his throat. Blood spurts. One of the elders finishes off the leader. It's over. Except for Lars, we are all unharmed, no one is injured. Quickly, we hide the bodies, weapons, and cargo in the bushes. We also try to erase all traces of the ambush and return to our previous position to surprise the next group. In the second and third convoys, the loads are heavier and more cumbersome, making it even easier. Most of the Kers don't even have time to understand or react. The plan succeeded. Gon grabs my arm and proudly raises it. He was already with me for my first hunt. The others look at me and raise their arms. Thor gently pats my back. Without my composure when Lars missed the leader and especially without my plan, we wouldn't have succeeded. The main objective is achieved, their clan is decimated. Tomorrow, we will take care of the Great Rock.

Last night, we camped nearby, just outside the trail. Previously, we threw all the bodies into the river after severing the head of the Kers' leader, which we set aside. We could have attacked their camp today, but we decided to wait another day in case any stragglers crossed the river, also giving time for the occupants of the rock to go from surprise to fear and then to anguish, for them to fully understand that their end is near.

*Midday.*

We continue to spy on them. The men who lived in the huts below have returned to the shelter. Only a few women remain, going about their business by the river. They work unaware of the danger. Some noisily chase fish with their feet and hands that have ventured into the small diversion canals along the riverbank. Frightened, the fish rush into traps that they proudly display afterward. It's a competition to see who will do the best. Other women squat by the water's edge, scraping, washing, or stretching hides to soften them. Children fill water skins and bring them back to the cave. The lives of their women resemble the lives of the women among us. These men who seem so skilled in the art of fishing and hunting, why are they so fierce? Why kill other men?

*Evening.*

We did well to wait. In the late afternoon, we surprised and exterminated a final group of two Kers who had just crossed the river. Their bodies were left for scavengers. Just before nightfall, two of our group went to impale the head of the leader on a stake at the entrance of their camp.

*Immersion: I am Ela, the next morning.*

The time has come. In this early summer, I am about to infiltrate the camp of our mortal enemies, the Kers, who drove my father out of the great valley. Before the final attack, I think of him and I think of Nohr, who must be worried about me. The men eagerly await the signal to attack, especially the two from our clan who experienced the tragedy at the Great Deer's camp. According to their accounts, the shell and blue stone jewel that I ripped from the chief's body belonged to our clan. That means they could have been involved in the attack. They might even be the assassins of Leor and my father's two eldest sons. I also understand that there will be no mercy; it will be difficult to restrain the men.

Over there, they have now realized it. Down below, there are hardly any signs of life left. Only an old woman is sewing hides outside, unaware of the danger. She pierces, passes tendons, and tightens them. Most of the Kers have taken shelter, men, women, and children, even the lookouts. The Kers capable of fighting have positioned themselves at the cave entrance. We approach openly. It no longer matters.

Two or three men start gesturing from the heights. They brandish their weapons and shout to intimidate us or bolster their courage. We pass by the large pile of bones at the entrance of the camp. There are numerous human tibias and skulls with traces of openings that were used to extract marrow or brains. The sight of this charnel house makes our people even more determined, and they begin to destroy the lower camp, sparing neither the few elderlies, nor the women who remained in the huts. Then they climb towards the shelter, launching volleys of javelins. Some Kers are hit. We reach the entrance.

In front of us and at the back, women huddle together with their children. The men have already retreated into a gallery that seems to lead up to the summit. The fury of our people unleashes, it's a massacre. Women, children, and elders are indiscriminately slaughtered one after another. I avert my eyes as the wounded are finished off and enter the gallery accompanied by Gon, Thor, Yul, and Maan. It is much deeper than I thought, and I hope it doesn't lead to another exit. It would be too dangerous to pursue them: we would have to pass one by one, it's so narrow. If there's a chamber at the end, they could be waiting for us there, killing us one by one. But there might also be another way out, and they could escape. In doubt, Maan suggests smoking out the gallery. Wood, damp herbs, we set it on fire as quickly as possible...

The thick white smoke, with its acrid smell, enters the passage unexpectedly. There must be a chimney that goes up to the top of the rock or an emergency exit on the hillside. The answer comes quickly: soon the Kers attempt to escape, coughing and spitting, holding spears and stakes. Panicked, they make blind throws. We shoot them down one after another. It's over very quickly. Then, after the violence, comes astonishment. Dumbfounded, the men contemplate the result of the carnage. Simple hunters, they had never killed a man before.

Infants, children, mothers, and elders lie before them, amidst pools of blood and broken bones. Crushed heads release a whitish-gray substance. Confronted for the first time with their own savagery, our people can't even look at each other. The joy of victory is spoiled. At the horrifying sight of a

pregnant woman with a protruding and disemboweled belly, they probably think of their own companions. Thor alone seems to hold up. We must quickly take control of the situation. He asks our people to throw the corpses into the river, to get rid of the vile human trophies at the entrance of the camp, to clear the area. We will keep only the fur that has never been worn, the tools, flints, and reindeer antlers.

*The same day, in the evening.*

We have lit a large fire at the cave entrance, but no one has the heart to eat. We will just sleep. Yon has stayed in a corner at the far end of the cave, far from me. He, so brave, the one who led us here, the one whose presence I cherished by my side, the most skilled of the young hunters in the clan, he killed. I saw him piercing a woman's belly before my eyes, and everything changed. Even though I haven't given birth yet, carried a little human, I cannot understand this cruelty. We should be able to go back, do things differently, spare women and children, but it's too late. I refuse to believe that we have become like the Kers. They were the ones who started it and pushed us to do this. They were not human. This heavy secret must remain between us, not to be spoken of. Tomorrow, half of us will stay here to guard the position, and the others will return to the grand circus camp. I will go with them.

## **questions**

Good and Evil

*Immersion: I am Ela, experience time: 1 hour 05 minutes, back at the great cirque, eighteenth beautiful season of the Eagle clan, summer.*

It has been two days since we returned to the great cirque. Here, there is no risk of being attacked by other humans, no competition. Yon understood that he had committed the irreparable; he distanced himself, and I don't even have to reject his advances anymore. He avoids me. Both among the elders and among us, everyone looks at me differently since our return. The women no longer talk to me about their women's problems. Gon described everything, well, almost everything, and the other men confirmed that I fought like a man, just like my father would have fought. I led the decisive attacks. Some are now openly demanding that I take my father's place. A

female leading the clan? It wouldn't be the Eagle clan anymore, but the Reindeer's clan living in large numbers in the great valley, as Nohr had proposed. Nothing is decided yet; we are waiting for his opinion.

Meanwhile, my nights are haunted by death, those first battles between men. I see it all again, the successive ambushes, the destruction of their camp, the relentless determination of my companions, the fierce gleam in their eyes. They didn't hesitate, seemingly even taking pleasure in it, even when the opponent was already almost defeated, and it served no purpose anymore. Once killed, they continued to impale them with rage, crushing their heads with clubs. Not only did I fail to restrain them, but I partly reacted like them. I felt excitement, the thrill of the fight. Yet when I kill a deer, when I finish it off, I don't feel hatred. I know that if I take its life, it is only because we need to eat, but I feel a connection to it. It has eyes, legs, a mouth, and a beating heart like mine. When a beast kills its prey, I don't think it questions itself. What bothers me is how easily we went into battle. Even I participated without hesitation; I killed the leader and another man in the shelter. Yon, in front of me, killed a female. I need reassurance, once again, as I have already tried to do around the fire, there, on the site, in the aftermath of the massacre. Yes, killing the Kers is like killing the wolves that attack humans to devour them. They were worse than anything. The lion kills to eat, but the wolf kills for pleasure, displaying gratuitous cruelty; once the first prey is slaughtered, fueled by blood, it no longer knows how to stop.

*Joy, I am simply Joy, outside of immersion.*

I understand Ela. Those very words of good and evil, of right and wrong, they don't exist yet. Yet her humanity is already so close to mine... In her, there was already the empathy of every woman or man for the other woman or man, until she discovered that men can be bad. Bad when misfortune strikes, just as life is good in everyday camp life when no one is injured or sick, when there is an abundance of game, when the sun or the flames of the hearth provide their warmth, when a child is born. A human life made up of good and bad ? Before the great catastrophe, humans still had an ambiguous behavior towards what they called evil. In fact, it is just a defense mechanism given by nature, an instrument of competition for survival. Yet humans abused war as if they found pleasure in it. They didn't hesitate to send most of their youth to death for futile causes. If I could tell you the future, Ela, you would learn that there will be many more wolf-men after you. They will continue to engage in this macabre game of war, adding more and more suffering to the harsh human condition, until the final Armageddon.



*Immersion: I am Ela, continued.*

I went up to the sacred cave. Nohr is in the vestibule busy preparing a potion. He doesn't look at me. He has guessed that something serious has happened.

– The clan is proud of you. He turned to me, waiting for me to speak, to confide in him. So I explain to him what he already knows, the surveillance, the plan I myself devised, the successive ambushes, Lars' end, the head of the Kers' leader impaled on a stake at the entrance of their camp, the smoky gallery. I also talk about the rest, the darkest part, the evil, the carnage, the bloodbath, women and children mercilessly killed. Nohr waits a moment before reacting.

You must forget all of this. If your father were still alive now, he would go back there. From the great sky of spirits, he sees you. He thinks of you. He is proud of you like the others are today. For him, life in the great circus was very long, but he never forgot. Despite the time, he nourished the hope of returning, of bringing us back to the great river; he was only waiting for us to be strong enough.

What you see every night in your head, you will see it again for a long time. It's inevitable, evil begets evil, and there's nothing we can do about it. But you can also think about tomorrow and all the days after that. It will help you. Never forget, Ela, that next to the bad, the danger, the cold, the hunger, the accident, the attack of a wild beast, the suffering, and death, there is also the good, the better days. You must think about all of that. That's what the paintings are for, not to forget.

Most of the animals in the great valley pose no danger to us. They wait for us, just like the roots, seeds, and fruits that grow there. Each of the elders also thinks so. It is our territory, and you have only just begun to reclaim it. As for the men-wolves, they are wicked creatures; their females would have given birth to wolves as well. Respecting life is good, but staying on guard is necessary. You must be strong and powerful, not fearing anyone. That's how the clan should behave, that's how their leader should think.

– And what if we continued to live here ? The valley knows no evil.

– We've already talked about it. You know that resources are scarce, and we are increasingly numerous.

– Could other Kers packs try to come back ?

– Then you will know how to defend the clan. You will have to decide when it is necessary to kill, and only for the good of your own, out of

necessity. I am certain of that. You are not like the men-wolves; you must take the lead of the clan.

– Me, but I am a woman ?

– You are Ogh's daughter, and you have proven yourself. In a few years, Vir will be ready, and if you wish, he can take your place then.

– And you, and the cave ?

– We will seal it off so that no wild animal can enter and defile it with its excrement. Just as your father kept the great valley in his heart, you will keep the sacred chamber in yours. Likewise, the handprints on the cave wall will be with you forever, those of your father and mother, and also your own when you were born. You will see the animals on the walls here in your mind. Later, Oryl can paint new ones in the new cavern.

The owl dozes in its nest, awaiting the night. And what will become of it? I love life in the great circus. I love the cave. I love Nohr and also all those who live here in our valley. Up on the rock of the dead, my father is there, here are my roots. Can one move a tree without it losing its leaves? Yet, I will do what Nohr asks of me in memory of my father.

## **land of the ancestors**

*Immersion: I am Ela, the first season of falling leaves on the great rock.*

We arrived at the edge of the great river in mid-summer after organizing a final feast near the great arch and closing the sacred cave. Oryl couldn't finish painting his auroch. We had to help Nohr, and even carry him part of the way; fortunately, as soon as he arrived, he seemed to regain vigor, sensing and recognizing familiar smells, finding all kinds of plants that he had missed. The shelter is very spacious, more than enough for a hundred men, women, and children, and very high as well. In some places, you could fit three men on top of each other, and it will be difficult to keep warm there.

Upon our arrival, we cleared a collapsed gallery on the river side and made it suitable. Nohr settled in there. He promptly unpacked and arranged all his stone, bark, and wood containers, his pestles, and his reserves of dried leaves, mushrooms, and roots. At the front, facing south, we piled up some large rocks to block the wind and rain, and we erected tall branches on which we fixed hides. Thul and the elders preferred to set up camp immediately at the base of the rock, where they have already built five sturdy huts. Ultimately,

they came with us. Before leaving for good, the men went to the burial site to retrieve my father's necklace, and they handed it to me. They listened to Nohr's arguments, and now it's me who leads the clan.

The Eagle clan is over, welcome to the Reindeer's clan. Yon has come to live by my side. I no longer have the Eagle's balcony, but I have found a new place, even higher than where the Kers watchers used to stand. I go there every day, and that's where I meet my father. My heart then moves westward to the happy valley. Only after that do I look eastward at those distant white mountains where I will never go. Since we've been here on the great rock, women and children sleep without fear. There is fire throughout the night, and everything has changed for hunting. The beasts are plentiful on the left bank, there are herds of reindeer, horses, and aurochs.

One day, Thul went further north, where the elders of my father's time used to live, on the other bank, but he didn't encounter anyone, only a site with some of their tools and old mammoth bones. At night, we regularly hear the howling of wolves, but none of us fears them anymore. I often observe the moon, watching it change appearance, becoming small and then large again after so many nights. As a little girl, I was afraid of it, finding it gloomy and unsettling in the sky. Now I know that it can be useful to us when there are no clouds. I also observe all those small points that shine at night in the sky. When we were children, Yon tried to scare me by saying they were the eyes of animals that would one day come to devour me. Great night of the spirits, territory of the departed... If they really are eyes, then they are benevolents. Nohr told me about my birth, about the successive bursts of little stars.

*Beginning of the white season at the great rock.*

The river is starting to carry ice chunks. In one of them, I even spotted birds trapped by the ice. Despite that, the reindeer still cross the river from time to time, protected by their fur. There is less wind on our shore, and they hope to find more lichens and bark there.

*Immersed, I am Ela, the first budding season for the Reindeer's clan.*

Time has passed, and I have chased the images of the battle from my mind. Since the event, however, I have maintained a great caution. Never in my lifetime or Yon's will the clan lower its guard. We must be strong, ever stronger, and for that, we must increase in number. Soon I too will give birth. In numbers, we are already around ten hands, including many children. In a

few years, they will become young hunters and, if necessary, capable of defending us; no one can destroy us. If men threaten us, then we will kill them, our kin's lives above all! That is certain. On the other shore, there are still a few Kers, but they pose no danger. They are accompanied by their wolves. I have never understood why those from the great rock don't have any. Perhaps it is too complicated with the river crossing, or maybe they feel strong enough. As for their clans, they seem to have moved beyond the valley to the south. Every day, I take care of Nohr, every day I worry and fear that he won't live to see the beautiful new season. He has shown me the plants and recipes for healing. Even though we haven't talked about it, I understand that when he is no longer here, I will have to take his place. Then Vir will become the leader of the Reindeer clan. So, I am starting to treat wounds and prepare potions. I know the beneficial effect of the buds from the tall poplars that grow along the river, those that soothe headaches and toothaches, that reduce swollen flesh. I also use some recipes passed down by my mother.

*It's a sad day.*

Nohr had a bad fall. After losing his balance at the entrance of the cave, his head hit a big stone. I couldn't even say goodbye to him. We will bury him at the top of the rock so that he can protect us, near the observatory. He taught me everything, to follow the stars at night and the path of the sun during the day. He showed me the difference between us and the animals. The lion is interested in the grass and leaves because they can reveal the presence of prey; the same lion is not interested in the stars or the moon because they are not useful to him, he doesn't even look at them. Nohr explained to me how we, humans, can learn by observing. Why we should do it, how almost everything can be advantageous. He also taught me that fear is useful. It's what helps us anticipate, avoid suffering. We must be afraid of the Kers so that we can take the necessary precautions before they attack us. We must be afraid of the wild beast to prevent its attacks. We must be afraid of the current to cross the river safely and not drown. We must not fear fear itself.

The wolf-men know how to make spears that go further than ours. They even have a kind of handle made of reindeer bone that makes their hand harder and more powerful. Pushed with it, the javelin goes with more power and precision. The bone hooks we found at the site are much more effective

than ours, even more than those our ancestors used when they were already in the great valley. Their fish traps are stronger, as well as the arrowhead attachments to the wood. Moreover, they know how to hollow out bones to make music much better than us. The sound is more varied and modulable; they have added a slit to the simple holes we make.

Finally, I found some strange objects made of mammoth ivory in Nohr's shelter. I had never seen anything like it. There is a kind of lion with a human female body. On our side, we only represent animals, and only on the walls of the caves. The Kers are not just wolves. They are intelligent, inventive, and creative, and what they invent helps them to kill. We too will ensure to improve our weapons, make spear tips sharper, and manufacture axes that can be held better. We have also learned to straighten deer antlers by drilling them. Nohr was right, all these improvements are necessary and will ensure the future of the clan.

After Nohr, it was Oryl who joined the ancestors and the animals. He had started to paint on the walls at the back of the cave: eagles, an owl, other creatures painted in the sacred cave of the great circus; there is also a wounded deer that is very expressive, you can see life leaving it, and finally a scene showing a man lying on the ground next to a lion, the first representation of a human.

*I am Joy, Underground, Ocean Dome, Project Nemo, April, the nineteenth of the year 2035, duration of the experience: 1 hour 12 minutes.*

I regain consciousness. The timer displaying the immersion time has stopped. I spent a little over an hour of what I must consider as my real life with Ogh, Nohr, Nya, Ela, and the others. I still don't feel any fatigue, things are going well. Krawn is looking at me attentively.

– How do you feel ?

– Very well, I feel as good as if I had attended a show.

– I suppose you understood what the Machine wanted to tell you ?

– Yes, about the condition of mankind on the blue planet, the relationship with animals, fear as motivation, the suffering of being separated from loved ones, the emergence of a sense of good and evil from the perspective of right-wrong, useful-useless.

– Ogh, Ela, and all the others were already like you, I mean in terms of evolution. So little time separates you from them that there hasn't been any major modification. All the thought mechanisms of the new man, the modern

man, were already present. She was already capable of foreseeing the worst situations and, on the opposite side, imagining the best of human life. The difference is that Ela had to constantly worry about her survival. This subject almost entirely consumed her thoughts. A pervasive fear.

– So fear would be the main human motivation ?

– Yes, the inherited animal fear, the curse of mankind. The gazelle, upon seeing the lion, experiences a primal fear but does not think about the fangs that will tear her apart, the excruciating pain she will soon feel, the fact that she will no longer frolic in the savanna under the benevolent warmth of the sun. She doesn't realize that her abandoned offspring will themselves soon be condemned to death. In humans, conceptualized fear adds mental suffering to physical suffering. As for evil, it is necessary, as the origin of this fear that prompts humans to react like all other species, pushing them to evolve. I'm talking about moderated evil, of course, like pruning a plant that will then be reborn even more beautiful, not the totally destructive evil that would annihilate all species, the evil of wolves, the evil of nihilistic tyrants.

– Ela didn't even know that the blue planet is a sphere and that it revolves around the sun. She knew almost nothing of what I know, but I feel close to her. I would have liked her to be able to visit Earth thirty thousand years later, to walk through hamlets and villages, to discover agriculture and livestock, to understand that she was right when she suggested stacking stones to make walls, when she wanted to improve tools and weapons at all costs, to always discover more plants to cure all kinds of ailments. She was right to be ever more curious.

– You're reacting very well, and the Machine even indicates that you enjoy this experience. We can continue or postpone the rest until tomorrow, giving your brain some rest. There's no rush, Luc hasn't finished his mission yet. It's up to you to decide!

– We can continue !

– Good ! The Machine will now travel back in time. Do you have any idea which era you will visit ?

– I don't know, Sumer, Babylon, Jerusalem, I suppose, or if it wants to go even faster, Sparta, Athens, Rome?

– No, it has chosen to send you to the time of the Pharaohs, the time of princes and priests, a second age of humanity, a few thousand years after humans began to settle down.

~

## PRINCES AND PRIESTS

### KINGDOMS

*I am Joy, Underground, Ocean Dome, Project Nemo, duration of experience: 1 hour 12 minutes, April, the nineteenth of the year 2035. Krawn is by my side. The timer measuring the immersion time has reactivated.*

Krawn:

– The time of Ogh and Ela is over, the time when a few dozen families of the human species lived on vast territories with limited long-term contact between them, the time of packs, clans, the animal age. From now on, in Europe and the Middle East, the ancient Neanderthalis sapiens have disappeared. Through chance encounters, as was the case with Ela, they passed on some of their genes to the new sapiens, modern humans who will populate all continents. Many things have changed with the end of the last Ice Age. The climate has become milder, the white mantle of glaciers has receded, and the sea level has risen, drowning certain coasts. Humanity has entered a second age. Hundreds, then thousands, and tens of thousands of people will soon settle in one place permanently: hamlets, villages, towns. Living together will become increasingly complicated. The exercise of authority will be entrusted to leaders based on strength or their ability to speak. The time of princes has come; they will rule with weapons. The time of priests as well, they will deceive the people with their speeches. You are going to enter the minds of some characters from this era. The clock of time resumes its countdown: 14, 13, 12, 11, 9000 BC (Before Christ). The display slows down.

### **Jerf el Ahmar.**

*I am Joy, Fertile Crescent, along the Euphrates River, near the future city of Tichrine, 8500 BC.*

The stream of images resumes, just like in the animal age. Fertile Crescent: it is an open arc to the south that encircles the Arabian Desert. It starts from the Nile Delta, follows the eastern bank of the Mediterranean, encompasses the Jordan River, reaches the Taurus Mountains to the north and the Zagros Mountains to the east, where the sources of the Tigris and the Euphrates are

located. The two great rivers meet near the southeastern end of the Crescent before flowing into the Persian Gulf. In their migration northward, the men who came from Africa found favorable conditions in this geographical zone: abundant natural grasses, wild cereals, and easily hunt-able fauna such as bovids, goats, sheep, and wild pigs, not to mention freshwater and sea fishing. The temptation to stop for a while, even if they were to resume their migration later if resources were exhausted, was great. Many settlements started to appear.

I find myself by the Euphrates River in Jerf el Ahmar. A thousand years earlier, men passed through here but didn't stop. Now there are round huts covered with straw, some worn and abandoned reed baskets, fish bones on the ground, extinguished hearths, and partially calcined bones in their ashes; they belong to black pigs or wild goats. On the riverbank, I see something that resembles a small basin with dried clay heaps nearby, rough sketches of cups or vases, a few failed pieces, and numerous pottery fragments. It is a primitive manufacturing workshop. At the center of this proto village is a rectangular hut, without mud walls, only posts firmly planted in the ground supporting the roof. The place is open. Inside, wild ox horns are hung high; on the ground, numerous flat stones can serve as stools, an obvious meeting place. I imagine men chatting, yet the place is empty.

During my visit, a large field rat wanders around in search of what the bipeds who frequent these places may have left behind. A memory in its little brain, that of delicious, crunchy, ripe grains that these animal cousins consume; all it must do is find them in the huts. The habitat is ephemeral, occasional. Wild grasses abound in the surroundings, but the ears are not yet ripe. If they wanted to, the Sapiens Sapiens, modern humans, could store them when the time comes, live off them throughout the year, have food during the bad season. It is too early; there are no granaries yet, nor those small, domesticated felines that know how to hunt rats and mice fond of grains. Man has also not yet thought of helping nature by sowing and selecting seeds himself. For now, it is only a pre sedentarization. There are many other proto villages scattered throughout the Fertile Crescent, most often located along rivers, streams, or even simple springs at the foot of the mountains.

*Same location, a thousand years later.*

We are in 7500 BC, at the beginning of agriculture. Men now reside on the site almost permanently. They still live off hunting, fishing, and gathering,



products simply provided by nature, but they also have a new source of food. The seeds that fall from plants or trees, carried by the wind, covered by the earth, moistened by the rain, the little sprouts that emerge in the same place in spring, the wild ears of grain that ripen in the hot season, all of this, the men have observed, and they have sought to imitate nature. I see women handling the digging stick, the same piece of wood that has been used for so long by their ancestors or by chimpanzees to dig the soil, extract bulbs, dig into decaying tree trunks to extract larvae, harvest delicious honey from wild beehives.

The hand has replaced the wind to sow the earth, a step-in evolution! Over time, they have even observed a more vigorous growth of seeds in animal dung, they have learned to carefully turn over the soil, to crush dry clods with a mallet before scattering the seeds and covering them with soil; they bring water when the rain is too long in coming. Now they cultivate spelt and other plants, barley, lentils, emmer wheat, wild peas. Men and women participate in the work of the fields, with women more often when game is abundant enough to occupy the men. They have all also learned to cross the stems of rushes and reeds to make baskets, weave mats that insulate from the ground, make woven baskets that can hold food, create fish traps. Elsewhere on the blue planet, other representatives of modern humans with almost identical genomes have also invented agriculture, domesticated local cereals or legumes.

Similar patterns of thought and predispositions have led to the same behaviors without necessarily having to copy from one another, without anyone being able to claim this discovery. It is simply evolutionary convergence! Rice in Asia, millet and sorghum in Africa, quinoa in South America. Everywhere, they have sought to improve yields by selecting the best seeds, inventing new cultivation methods, rice grains coated in balls of fat soil then deposited in the shallow waters of the first rice paddies, irrigation in arid countries. The Machine shows me enclosures with wooden fences. During hunts, men kill the most aggressive animals, capture the most docile ones, and ensure they reproduce in captivity by feeding them. Here, there are goats, aurochs, and wild boars that are kept, in North Africa there are Barbary sheep, in Asia there are pigs and chickens. Meat consumption increasingly depends on this breeding that partially replaces hunting. Additionally, men now have milk to accompany their daily bread, flat cakes cooked on a hot stone, water and crushed grains. The first flours are made by grinding grains increasingly finely using stones, just as Ogh already did

for his preparations.

## **stones**

*Immersion: I am Joy. We are still in the Fertile Crescent. Krawn spoke again. He is working in concert with the Machine as if he knows its workings perfectly.*

– With these innovations, the survival rate has improved, less precariousness, more security, and more leisure time for other concerns besides nourishment, shelter, or clothing. Becoming increasingly aware, men have tried to better understand their own lives, embarking on a long quest in which stones will play a major role. The reign of minerals, stone burials, fascination since the very beginning. The hardness of rock contrasting with the softness of flesh, the stone that withstands the elements, wind, sun, rain, fire. Fire consumes wood but not stone, which demarcates the hearth. Plants and animals return to the earth when life leaves them, often devoured by scavengers, from hyenas to insects to vultures. What remains turns to dust. Man cannot accept this decline. With stones, he can build an inviolable burial place.

Stone is man's companion, extending his hand, multiplying his strength, enabling him to better dominate nature. From a simple river pebble struck against another, trial after trial, flake after flake, man has created a bifacial tool that slices through flesh. He has understood, and the innovations multiply. Stone of the spirit, a small piece of those enormous caves that sheltered man for so long. He remembers those natural monuments that protected him during the ice ages. In the depths of Paleolithic caves, he developed his first spirituality, began engraving the first symbols, painted the first animal scenes. There he began to imagine superior forces. Stone as a signal, marking one's territory, asserting the presence of the clan. What better than stone as a natural landmark? Also marking a gathering point, a meeting place. Stone as memory, a place of transmission and culture, where the memory of the departed can be reactivated. Raising stones toward the sky to elevate one's consciousness!

As an illustration, I see the first cairns, humble piles of stones placed on top of each other, a primitive form of geolocation. They serve to mark places, indicating a path leading to a water source here, signaling danger or a burial site there. Then monoliths appear, sometimes shaped. They show the sun, the moon, and the stars that man exists, that he must now be reckoned with;

they are like a challenge to nature. Man will be a force like lightning, thunderstorms, or lava flows; he too will transform the environment. Species consciousness, everywhere on the blue planet, just like with agriculture and animal husbandry, Homo has the same idea, the same desire, to raise stones. Alignments of menhirs, dolmens, humanoid standing stones parade through my mind on all continents; alongside them, men seem to be praying. Additional images arrive. I see men preparing for a celebration near a circle of standing stones. It's the summer solstice, the longest day of the year; the surrounding camps are numerous; the celebration will take place in the evening.



Illustration : Bing .com, images, create prompt : a man kneels in front of a stone that rises towards the stars, digital art.

Elsewhere, there is a large mound of stones; it is a burial mound; a little further away, in another one, you can enter. At the entrance, a priest welcomes a wounded man; he limps heavily, and his suffering is evident on his face. He enters alone. The Machine shows me the interior. A narrow passage is framed by large flat stones adorned with an abstract network of lines, undulations, or spirals. It is barely lit by a glow coming from the tiny room at the end. Illuminated by a grease lamp, it contains only a simple wooden stool and a cup made of bark, inside of which is a reddish-brown beverage. The man sits down, brings the liquid to his mouth, and waits. I see him emerge a few hours later. He no longer limps, appears relieved, and thanks the waiting priest.

## **spirits**

Gobekli Tepe

*I am Joy.*

Krawn :

– Actually, it all started long before, in the middle and upper part of the

Fertile Crescent, at the foot of the southern foothills of the Taurus Mountains, south of the corridor between the Black Sea and the Caspian Sea, a little below the sources of the Euphrates and west of those of the Tigris.

*Around 9500 BC.*

In front of me, rocky hills stretch as far as the eye can see. I am on top of one of them, which has a vaguely circular shape. Its surface must be about a thousand feet in diameter and fifty feet high. From where I am, I can observe the entire surrounding region. On the hillside, several dozen men are busy trying to raise a huge elongated rectangular and flattened stone block. The upper part gives it the shape of the letter T. The men are clearly struggling; they pull the mass to make it slide, place wedges, take a rest, and then start again. At the rate they are progressing, it will probably take them several days to succeed in hoisting it to the top. Behind me, ten identical blocks are already in place, standing upright. They are pillars forming a circle, with their bases embedded in a stone wall. In the center, placed on two rectangular cradles, two even larger pillars face each other. Each one must weigh as much as twenty to thirty hunters. On the nearby hills, other slightly smaller circular constructions are already completed and covered. I can see the ends of the large branches that make up the framework. There are also numerous huts nearby. Some are for the builders, others for visitors.

The time required to build the monument does not seem to worry the men on site, nor does the magnitude of the work. I understand that the men living in the region are not yet settled; they are still hunter-gatherer-fishers, which explains why there are no permanent dwellings. However, with what they can achieve, they could easily build a fortified village. They do not feel the need for it. Likewise, there are no fields or enclosures for animals. These places are just meeting points, but the men are keen to make them even more beautiful. They have forgotten the roughly hewn stones from the beginning and have moved on to these rectangular columns carved with only stone tools. With sharp flakes of flint or obsidian, they manage to extract the more fragile stone used for the monoliths, to create plans, straight lines, and angles. Even more astonishing in those ancient times, they have started representing living beings on the columns, not soon-to-be domesticated species, but scavenger birds, spiders, scorpions, snakes wearing a sort of mushroom headdress on their heads. Still no human representation as if humans still did not dare to do so, as in the case of the earliest animal paintings and sculptures.

## adrift

*Same place, one year later.*

Nautilus mentally injects me with a ceremonial scene. The temple is complete, covered like all the others, and accessed through a narrow porch. As the sun has just disappeared on the horizon, men enter one by one. Stone benches are evenly distributed around the perimeter, between the large white limestone columns; everyone sits in silence. The interior of the temple is lit by resin torches hanging on the walls, giving a semblance of life to the sculpted animals. In the center of the community circle, on the ground itself, a man is prostrated between the two large monoliths. Iluk is a proto priest. Before the start of the ceremony, he spent many hours alone inside without eating or drinking, and the asceticism is sharpening his senses. Two stone cups are placed at his feet. From one, thin smoke rises, releasing powerful aromas throughout the sanctuary, juniper, hemp, sage, the sap of fragrant shrubs. In the other cup, there is a mixture of honey, fermented grains, and dried mushroom powder, the kind that makes you dream, sharpens the senses, and transports the mind elsewhere. Iluk prepares for the ceremony of invoking spirits, the spirits of ancestors, animals, and all of nature in general. Initially, he was just a healer, but then he understood how one could enter strange states through plant fumigations or by ingesting psychedelic mushrooms. He saw strange things.



Illustration: Bing .com/ images / create prompt : a shaman prays at the foot of an eagle totem stone, vultures and a human face against a cloudy sky

One day, he had the sensation of flying like those vultures to which hunters offer human remains, a great bird spirit. He began to believe in the reality of parallel worlds, worlds where one can fulfill their desires, forget the human condition, and not think about evil anymore. He believed he saw the ancestors again in those extraordinary worlds. He even claims to have spoken to them. What's more, he asserts that he can act on the body by acting on the mind. Now he has become a shaman. When Iluk soars, he finds the answers to all the questions the hunters ask him: why is it so cold? Will the herds of deer soon return? Will the unborn child be male or female? Today,

that's why everyone has come. Iluk will enter trances and visit the souls, both human and animal. A man has just entered and is preparing to assist him. With a drum between his thighs, he starts to strike the taut skin with a ram's horn. The dull sound grows louder, repetitive, mesmerizing, and persistent. At times, it resembles the roar of deer.

*I am just Joy, for a moment, out of immersion, just a thought.*

The rhythm of the percussion is close to 240 beats per minute, or four beats per second, ideal for inducing a trance state, theta brainwaves. The internal, autonomous cognitive network, independent of external stimuli, is excited and amplified. Independent thoughts arise, Iluk enters an altered state of consciousness where he feels fused with the entire universe. The revelation occurs!

Iluk extends his arms, adorned with vulture feather mittens. He lifts his head, also adorned with large white and black feathers, stands up by unfolding his body, and engages in some incantations. Vulture spirit, come, take him, fly. His arms move more and more violently and jerkily; they mimic wingbeats. The drumming becomes louder and faster. The assistant is sweating, and the men's gazes are fixed on the shaman's image. He mimics taking flight, jumps, jerks his head backward abruptly, and finally freezes. Not a single movement, he is like a statue. The drum stops. He feels ecstasy; he has become the vulture spirit, flying, soaring in large circles with the other birds, gliding over the land, skimming the stone circles, exploring the forests, counting the deer, does, and stags, finding wild boars, swooping down on a snake, grasping it in his talons, ascending back into the sky with his prey. He climbs higher and higher until reaching the desired clouds. Iluk communicates with them, receiving the message from the sky.

It's then that the indicator for Nautilus's direct injection mode interrupts me.

Krawn takes over:

- What do you think, Joy ?
- I know that experiencing flying is one of the most common dreams for humans !
- Do you think it's serious to believe in these otherworldly realms ? I must answer, say what I think, anyway, if I lied, the Machine would know, according

to Uncle Luc. Let's play the game.

– If Iluk is convinced that he accesses other worlds beyond the one he normally lives in, worlds populated by spirits or souls, yes, it seems serious to me because then he will persuade other men of the reality of his own dreams. At this stage, man hasn't yet understood that evolution has shaped him this way, developing his imagination as a means of defense. This ability to imagine anything should fade in the face of reality, but Iluk is not capable of that. He confuses the real and the imaginary, just like the priests who will soon do so, becoming more and more numerous on Earth.

*The show resumes.*

The shaman finally regains himself; he is exhausted as if this communication with what he believes to be a world of spirits has drained all his energy. Some food and water are presented to him. He brings the cup to his lips and takes small sips. A moment of silence. In the assembly, no one moves. They eagerly and anxiously await the outcome. He knows well what everyone wants to hear. He finally announces that rain will come soon, that there will be plentiful and large wild grains, and everyone will be able to eat their fill; females will have many offspring, including many males; united, the clans will be strong. The spirits also request a grand feast.

## **weapons and Gods**

City-states

*I am Joy. Nautilus continues to inject me with a history lesson to immerse me in the context of the era I will be plunged into, 6500 BC, the southern foothills of the Anatolian Mountains, Cayonu.*

The process of Neolithization is already well underway. The villages have grown. That is the case here in Cayonu. After being a simple meeting point, a temporary hamlet, and then a permanently inhabited village, the place has become a true small town that now covers twenty-five acres. The archaic scattered huts and shelters have given way to small square houses tightly packed together. They are arranged in a grid pattern, and their walls are made of stone and bricks containing a mixture of clay and lime. Most have rooftop terraces, and access is through them via an external ladder. Each neighborhood can accommodate up to a thousand families. There is also a

sanctuary decorated with wall paintings where rituals affirm religious beliefs take place. Beyond the dwellings, at the periphery, there are still no walls or fortifications, as if the inhabitants have yet to fear neighboring cities. Only wooden palisades made of stakes and branches enclose enclosures for animals, including sheep, wild pigs, and a few bovines. The grains and fodder are abundant enough to feed them because cultivated fields extend further, and yields have improved.

*3500 BC, Palestine, Jericho.*

People have been living there for perhaps three to four millennia. The city is home to thousands of inhabitants; it is surrounded by walls, a sign that the inhabitants protect themselves. Significant advances have occurred in all areas, driven by emulation. Farmers now use the plow, drawn by draft animals, often domesticated oxen. The pointed tip of the tool splits and scratches the earth instead of using the hoe; there is no longer a need to bend over to turn the heavy or hard soil. The oxen relieve humans of the arduous and tedious work in the fields. Where dozens of men were once required, now two or three are sufficient to accompany the team. In some time, a new step will be taken with the bronze plow. People have also learned the benefits of manure and spreading it. They have observed that where animals deposit their excrement, the grass grows better.

Man is no longer just a hunter-gatherer but a cultivator or herder, or even both. As for hunting, it will increasingly become a pleasure reserved for the privileged few. As early as 8000 BC, it was common for dogs to be domesticated; now they transition from hunting to herding, helping to drive and watch over the herds. As for domestic cats, they guard the granaries and devour small mammals attracted by the accumulation of grains. In the city, people are well-dressed. Finely woven fabrics have partially replaced the first textiles made from roughly twisted and intertwined sheep wool. Wooden bars, the beginnings of the first looms, are used to stretch longer and stronger threads. With a few skillful manipulations, they can be crossed and tightly tightened. Colors appear, particularly red obtained from the murex shell collected on the nearby shores of the Mediterranean Sea. Some ceremonial garments are even adorned with gold threads. These clothing differences also indicate the gradual establishment of a hierarchy. The progress of agricultural tools has allowed some to become wealthy, and they will soon propose work to those who can no longer find land to cultivate. The same goes for animal husbandry. Others enrich themselves through



craftsmanship thanks to the surplus production.

Jericho is in a true corridor of civilization. People exchange knowledge and craft techniques; competition, accelerated learning, creativity, and inventiveness quickly advance techniques. At the same time, humans thrive, as function creates the organ, thanks to the emulation effect of all great civilizations. The city becomes a hub of numerous exchanges that take place from one end to the other of the Fertile Crescent. It is both a blessing and a curse for its inhabitants, who will have to endure the ambitions of invaders moving up or down the Palestine corridor.

## **hierarchies**

*I am Joy, neolithization, continued.*

Krawn comments on the new way of life of men:

– We can easily imagine what the new life in society, within villages and then cities, could have initiated in terms of tensions and rivalries. Within hunter-gatherer clans, all men were practically at the same level except for the clan chief and their wise healer. Each one performed the same tasks. But once that's no longer the case, how do you decide who is more important? The one who can dig a well to provide clean water to the community, or rather the one who can defend the city, wielding a club, an axe, and a javelin? The one who knows how to heal with plants, or the one who dispenses comforting words and promises a better future? The one who is considered to have greater importance or responsibility will quickly demand a larger share of consumer goods. Hierarchy will establish privileges, and soon men will argue and tear each other apart over these questions. The matter will be settled quickly: warriors first! The man who used to hunt other animals will be succeeded by the man who preys on his own human species, a generalization of Kers' behavior. While game becomes scarce, men multiply. The temptation is strong to seize the belongings of others by force: grains, livestock, fabrics. To kill other men and simultaneously take their women, all with just a few weapons, in a matter of days or even hours, it's so easy! No need to sweat in the fields or roam vast spaces to gather herds. Killing will become a highly attractive profession.

Some will choose to become soldiers, just as one becomes a blacksmith, a potter, a herder, a farmer, a weaver, or a tanner. We will witness the birth

of armies mostly composed of hired thugs, brutes rewarded by their leader in the form of plunder, massacres, and rapes authorized by him. The protection of cities will quickly become essential for city dwellers threatened by the armies of rival cities. They will all accept the deal, giving up a portion of their belongings in exchange for armed protection against enemies, those who want to seize their crops, women, and children. At the same time, the military leader will ensure order in the city, internal security, and common policing tasks, which will grant him additional privileges that he will be tempted to abuse.

The era of princes has arrived! Once the power of weapons is established, anything is possible. The warrior becomes a prince, then a king, demanding the most beautiful women and the best food, exploiting city dwellers who quickly become mere subjects. Internal predation, external predation, the catastrophe is set in motion. A war can be triggered solely at the initiative of a warrior prince wishing to enrich himself even more, unable to be satisfied with power over a single city. Kingdoms will form through pillage and massacres, enslaving the women and children of defeated cities, a gift from the king to his city. An endless history begins. In addition to natural hardships, mothers will have to endure the unacceptable: the death of their sons for the glory of their prince. In the end, most of the time, it will be a fool's bargain, city security paid at too high a price. As for the priests, often complicit if not in power themselves, they will be tasked with consoling the people under this domination.

## **two lands**

Kinglets

*Underground, Ocean Dome, Nemo Lab.*

Krawn follows the progress of the experiment on the screens. He checks the indications and seems reassured, even satisfied.

I am Joy, experiment time: 1 hour 27 minutes, around 4500 BC.

The sequence of images resumes. I find myself in the Nile Valley, between the twenty-fifth and twenty-seventh parallels, three hundred miles south of the future city of Memphis and two hundred miles north of the first cataract, where the cities of Thebes, Thinis, Hierakonpolis, and Abydos will be built

later. Men begin to settle down. The dwellings are still mainly round or oval huts, with walls made of earth and roofs made of thatch. Pottery is being made, barley is being cultivated, as well as a wheat derived from wild emmer wheat. In the hinterland beyond the right bank, antelopes can be hunted; the river is rich in carp with large reddish-brown scales, white perch, catfish with wide mouths adorned with whiskers, and all kinds of other fish. The men who live there know how to catch wild geese and chickens hidden in the grass with nets, and they cross from one bank to the other using boats made of bundles of reeds. Of course, all these practices have been known for a long time in the Fertile Crescent further north. They are behind because cities like Byblos, Jericho, and those in Mesopotamia are already trading their surpluses. However, they won't be late in catching up. New techniques are spreading in the Nile Delta from Palestine and, to a lesser extent, through the Red Sea. Soon, the birth of the great Egyptian civilization will occur.

*Same region, around 3400 BC.*

The Machine presents me with large villages, the forerunners of future cities. Rectangular dwellings coexist with the old huts. There are also enclosures with cattle, pigs, and goats inside. The cultivated cereals are more diverse than before, wheat, peas, and flax complement barley and wheat. The ears of grain sometimes bear several grains, a result of species selection by humans. The craftsmanship is of better quality, the reeds are better woven, and the red or black pottery is carefully polished and sometimes decorated with geometric patterns. Among notable facts, it can be noted that the local population has acquired remarkable mastery of stonework. Artisans make blades, knives, and sickles with unparalleled sharpness. The sickles are true saws formed by a series of small sharp flint teeth fixed side by side on the curved wood of the tool. But their expertise doesn't end there. They also know how to make magnificent stone vases and bowls through simple abrasion, skillfully and quickly rotating a piece of wood finished with a hard abrasive stone ball in their hands, stone against stone, gradually carving the softer stone. It is time-consuming, but they already have the patience required to erect pyramids. They know the difference in hardness between soft alabaster, milky white marbled with brown, and flint, as well as white limestone, dark granite, obsidian, and diorite. Their objects are increasingly beautiful. In addition to craftsmanship, they have developed a true art of sculpture. Makeup palettes made of green or red stone are remarkably decorated with animal motifs, as are the ivory handles that adorn certain

knives. Now they have tradeable products that other countries in the region cannot make as well, now they exist, and the river that brought them innovations from the north will allow them to export in turn. Exchanges with the south beyond the cataracts will strengthen their commercial position. Emboldened, they will develop transit through the Red Sea, beyond Arabia, towards the eastern end of the Fertile Crescent. Over there, people are developing writing and mathematics.



Illustration : Bing .com/ images / create prompt : a pyramid built with letters and numbers, futuristic scene

### *A few hundred years later.*

The neighboring cities, villages, and hamlets have grouped together into small kingdoms. The petty kings Scorpions I and II share the same mindset as all the others in the Fertile Crescent, and more generally all the other princes or kings in the world. The same ambition, the same logic, to expand and expand again and again. Greed, evil instinct, the pleasure of hunting humans, which in a cruel game prolongs the hunting of animals, much more than the desire for greatness that some Western historians highlighted. They will strive to have the best warriors. While each kingdom has its own specificities, they all have in common the river, the invaders' path, the path to conquer other kingdoms. After some wars between neighbors, one of them finally succeeds in gaining the upper hand. It unifies the cities located on the loop of the river around the twenty-sixth parallel. This success makes him even more ambitious, and he starts coveting the immense riches of the delta. The land there is more extensive and richer, the harvests more abundant. There too, they tear each other apart, and the temptation is great to take advantage of their dissensions. If he succeeds in defeating them, then the key will be the control of trade with Palestine, the magnificent fabrics, the sumptuous jewels. These condescending kings of the delta look at the kings of the loop with disdain, ignorant of their new military means. Spectacular progress has been made not only in craftsmanship but also in the manufacture of weapons, daggers, arrows used by skilled archers from increasingly numerous Nubia. So far, the pre-dynastic scorpion kinglets, lions, serpents, hawks have failed in their attempts to dominate the delta. The

incursions have been fruitless. Yet they have found a new justification for conquering the delta: they consider themselves the guardians of the Nile; the sources belong to them. From the south comes the flood and the waters that allow the peoples of the north to live. So how can the latter refuse to share their grains when the harvest is insufficient in the south?

Around 3050 BC, the Expedition of the Two Lands takes place. As part of the succession of the scorpion kings, King Narmer Menes takes power. His analysis is good and is nourished by the experience of previous failures. It is indeed the size of the delta that compromises every invasion. Taking a city by surprise on the banks of the river is easy, conquering the inland is another challenge. The troops are quickly scattered in the complex network of canals, fields, or even the branches of the river. Moreover, the cities are increasingly often surrounded by fortified walls, defended by permanent garrisons. The number of fighters from the south is notoriously insufficient for such an extensive country. No matter, there is another weapon: the priests. They are often as ambitious as the princes.

The solution is there, to win their good graces. Narmer knows that in Uruk, as in other cities of Mesopotamia, power is exercised through the alliance of princes and priests, weapons and gods. Combining the two forces, spiritual and warrior, yes, that is surely the right solution. Shipbuilding has made great progress, much larger boats are built and launched. At the same time, additional battalions of Nubian archers are formed. Southern emissaries act as a fifth column, enticing the clergy of the north with various promises: enrichment with Nubian gold, cult development, increasing the power of the priests. Soon, the southern and northern lands will be part of a single kingdom, the kingdom of the two crowns, the kingdom of unified Egypt.

## **cult of the Dead**

*I'm just Joy.*

Another pause in Nautilus' data injection, and Krawn resumes:

– There, in this Nile valley, the cult of the dead will develop like nowhere else in human memory. From 4500 to 3000 BC, burials flourish while becoming increasingly sophisticated. People love life so much that they refuse death. At the same time, they are still fascinated by animals. It is an inheritance from the life their ancestors led when they were intimately

connected to the wild fauna. In those distant times, some people still abandoned the remains of their loved ones to scavengers, hoping that life would be reborn in them! Others had started covering the corpses with stones to avoid this ominous fate. Before closing the tombs, they would place a humble offering, a flower, a jewel, a weapon that belonged to the deceased, or a symbolic amulet. In any case, the remains disappeared permanently from the sight of the living. But there, on the banks of the Nile, unrest will seize the people because it seems as if the sand does not want their corpses.

The bodies buried in the ground come back. When the desert wind blows, it uncovers human remains. They are terribly impressive because they are naturally mummified, desiccated but still colored with the brown of blood, the white of nerves and tendons, frozen in a deadly grimace. It's as if the cherished and loved beings refuse to leave and turn into dust, as if they haven't completely left this world. So, perhaps they still had a life or something resembling it? The question will quickly turn into an obsession. After a long evolution spanning over two thousand years, the cult of the dead will become structured and one of the main concerns of the inhabitants of the Nile valley. They will be encouraged in this by the priests who will use these customs to strengthen their control over the entire Egyptian people.

*Nautilus, immersion around 4500 BC.*

Near Thinis and Hierakonpolis, I see primitive necropolises where people take care of their dead. They line the tombs dug in the ground with baskets, add accessories like carnelian necklaces, ivory beads, and seashells from the Red Sea. In some tombs, several bodies are found curled up together.

*Around 3400 BC, at the same location.*

More and more often, individuals are buried individually. The most important ones are buried in vast and decorated tombs, sometimes even with companions from their life, loved ones, wild animals, or dogs with their leashes. The remains receive increasingly careful attention. The goal is to complement the action of sand and heat, to ensure that the features of the deceased resemble those of the living as much as possible. The internal organs will be removed to prevent decay. Salt, or more precisely natron, a natural sodium carbonate extracted in Egypt, along with several natural essences, will allow the remains to maintain a presentable appearance. Later, balms will be used to inflate the skin, and the body will be protected with linen bandages. Mummification will become the rule, a complex process

controlled by the priests.

*Around 3000 BC, in the same region.*

The tombs gradually become rectangular and are made of raw brick. Life in the afterlife, the deception is well underway. To imprint it even more in the minds of people, the Egyptians will construct true homes for the deceased. Everything that the deceased is supposed to need, everything that surrounded them in the world of the living, will be piled up there: furniture, weapons, food, as well as familiar objects, small gifts, figurines, amulets, and jewelry. From humble stone cairns and modest tumuli, they move on to mastabas, which house funerary chambers and annexes. For the nobles, multiple rooms are provided to store offerings, complete with floors and roofs. Each person tries to perpetuate their hierarchical position in the afterlife by replicating in their funerary residence the standard of living they experienced in their real life.

After the unification of the two kingdoms, a large part of the cult, celebrations, and rituals will quickly be dedicated to the cult of the dead. The afterlife is a place of delights where one is freed from anxieties and fears, the fears that spoil life on earth. One can cultivate the land without fearing venomous snakes or scorpions. The land is always fertile. The river does not play tricks with irregular and insufficient floods. One is sure to see their children grow up in peace and prosperity. The concept of paradise is born. It is so tempting to believe in it. This madness, this gloomy and deadly fixation should have been stopped before it reached such proportions, before it drove kings to build increasingly gigantic monuments. Impossible! Gradually, religion will become an essential factor of cohesion for society.

~

## PRINCES AND PRIESTS

### THE GATES OF HEAVEN

#### hypogeum

#### Sarcophagus

*I am Joy, Ydunea, Underground, Project Nemo, time of experience: 1 hour 21 minutes. Immersion: I am Senout, Memphis, capital of the Ancient Empire, Egypt, year 2530 BC, Akhet or the flooding season, end of the fourth month, twenty-ninth of October in the Western calendar.*

Memphis is built on the western bank of the Nile. With its white walls, it is now the capital of the united two lands. The northern suburb is an area crisscrossed by canals dividing plots of vegetable land. Further downstream from the river, a royal concession encompasses three palaces bordered by a large canal, all built identically.

Originally, they were intended for Pharaoh's entourage, but it was too far from the royal court. The princes and high officials preferred to stay in the center of the capital, and that's how my father settled in the last of the residences, the furthest of the three. Everyone in Memphis knows it as the House of the Architect. Indeed, my father Menothep is the grand Architect, the master builder of the Gates of Heaven, responsible for all the royal construction sites, temples, and pyramids. He is also a great friend of Pharaoh.

The palace is a construction of mud bricks leaning against the cliff that leads to the plateau of the dead. It is about a mile from the western bank of the Nile when the river is at its lowest level, during Chemou, the harvest season. From the river to the palace, wheat, flax, peas, and other vegetables are cultivated. A significant portion of the produce goes to my father; the rest goes to the priests after the peasants' share is deducted. However, during the flooding, like the current situation, all these lowlands are submerged by the flood, which deposits fertile silt carried by the river.

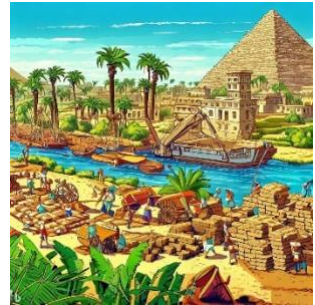
To the north of the palace, there is also a farm, also built on the hillside and therefore protected from the waters. Everything produced there is for the palace; geese and green-necked ducks captured in the wild with their wings broken, guinea fowl, pigs, and cattle are raised there. The construction is surrounded by a few palm trees, fig trees, and vine plots.



The grand canal that leads to the center of Memphis culminates in a dead end in front of the palace. At the bottom of the grand staircase that leads to the entrance courtyard of our house, boats can easily dock along a stone quay. Once in the courtyard paved with a checkered pattern of white and gray stones, the facade is revealed. Open to the east, facing the river, it is made of earth bricks with stone decorations, two columns of gray granite adorning the entrance porch, and on each side, two large side windows framed with white limestone. A festoon of white stone crowns the facade wall.

What I haven't mentioned yet is that the house is both our residence and my father's workplace, as well as the place where many architects, scribes, and various servants work under his orders. "Orders" is a big word because he never has to raise his voice. His natural authority and the respect all his collaborators have for him are such that work is always done in the utmost calm and with great efficiency. As for those who come from outside, they would never dare to question one of my father's decisions, knowing his proximity to the king.

Once through the main entrance, you arrive directly in the large workroom. It is the former ceremonial hall transformed into a study. The work environment: scribes bring rolled documents to the large table in the middle of the room, a cedar wood piece of furniture with golden lion paw feet. My father is there, standing and discussing with Tozar. Coming from Babylon, he is not dressed like the men of Egypt. It seems like he pays more attention to his beard and sandals than to all those who work for him. With a contemptuous look and humiliating remarks, he never fails to emphasize that in his country, they know more about numbers than here in Egypt. The only person he seems to respect is my father.



Bing.com (Dall E-2) / create, prompt : a cartoon image with the great pyramid of Cheops and a river port on the same bank with, blocks of stone are unloaded from boats, in the foreground the Nile, also a village of artisans and a farm, crops, peasants working in the fields, palm trees, ancient Egypt style.

The two of them are examining an open scroll laid flat. The large room

with a high ceiling is open to the north and south, with separate annexes, each with its purpose: a room for geometers, accountants, or archives. Everyone who works there does so under the supervision of Thoti, my father's trusted man. He is also my tutor.

Above, set back from the main hall and leaning against the hillside, our apartments, my father's and mine, have spacious terraces that offer a view of the city and the river. That's where I am right now. From my home, I can see the elongated islands that are still partially submerged. On the opposite bank, there are endless fields and a few humble peasant houses. On my left, I have a direct view of the farmyard, and on the right, in the distance, is the city; in the late afternoon, it is bathed in orange light. Ranep is keeping me company. A servant and a friend, even more so, she is the sister I never had. Born in a village in the far south of Nubia, which was raided, she was later sold in the market of Aswan where slaves are traded.

That's where my father bought her on one of his trips. Older than me by a few years, she is already a woman, and men court her. It doesn't bother her, on the contrary; she is as uninhibited as the other southern girls brought to Egypt and always wants to talk to me about men. I'm not interested. I have only witnessed thirteen floods of the river, thirteen inundations, germinations, and as many harvests.

My main concern is learning. Every day, every morning, and until mid-afternoon, I write, I copy, I play with numbers, I develop plans, or I explore the archives. Every day, Thoti teaches me something new, and every day I must organize that new knowledge in my mind. He is not just any scribe, any scrivener skillfully handling reed, stylus, and ink, no! He was a royal scribe until Pharaoh assigned him to serve my father. Of course, he gets his name from the god Thoth, the one who taught writing to humans. Thoti ensures that everything that happens at the palace and on the Gates of Heaven construction sites is meticulously recorded, every detail, every transaction, every incident.

The whole country works like this. According to him, that's what makes Egypt great, what makes the administration so efficient. With writing, everything is certain: the quantities of grains owed by the peasants, the settlement of disputes between spouses, the reproducibility of a manufacturing process, or a medicinal potion. Memory can no longer play tricks, altering the realities of the past.

*Same day, in the evening.*

Usually, Ranep sleeps on the premises of the palace. She doesn't go back to the farm like the other servants. They reunite with their sisters and brothers in the evening, who are engaged in agricultural work, taking care of animals, preparing oils, beer, and wine, and working with wicker. But tonight, is not like any other night; it is the night of the dead, the night of Osiris. According to the priests, it marks the arrival of the waters and the death of the plants. At the beginning of the following season, with the retreat of the waters, germination begins. These days, ahead of time, the first white onion bulbs symbolize this rebirth. Soon, all vegetation will come back to life. Tonight, I will be alone because everyone will begin to celebrate Sokar Netjeryt, the festival of the dead. I feel bored, night falls, the palace is deserted.

At the farm, an unusual silence reigns, only broken by the usual nocturnal sounds: the grunts of pigs turning in their stables, weasels trying to scare the poultry, a barking dog disturbing a donkey. A few onion necklaces are still drying in the courtyard; most of the harvest was exchanged in the preceding days in the city for vases, tanned and colored leather, or fabrics. The farm employees kept those to place them tomorrow on the grave of a dear departed. It will give them the breath of life for a while. The wealthy ones will go to adorn the funerary chapels of their family, placing all kinds of other goods there.

Tonight, in the secrecy of the temples, the priests will engage in complex rituals, libations, fumigations, invocations, readings. Not us, not my father, not Thoti, not me, as if we had no ancestors. I dare not ask them where our chapels are, but what I know is that tomorrow I will be at the grand royal ceremony. I will accompany my father to Memphis. We will board the boat in the morning, and the king will come with his relatives and the whole court. As every year on the same date, Sokar will emerge from the great temple of Ptah to go around the city in a procession, Sokar, the god of flight and renewal, seated on the Henou boat whose bow, in the shape of an oryx head, defies enemy birds and fish. At the head of the parade, he will follow along the white walls. On this exceptional day, all the inhabitants will be able to see him, not just the temple priests. Also at the front, a donkey. The poor beast will know nothing of its doomed fate. Donkeys are the friends of men; every day, they transport vegetables from market gardeners, baskets from the countryside, jars full of oil or beer, products from blacksmiths, bundles of fabrics, and even garbage. However, on this day, the animal will be cursed. I don't understand why. The priests say that Seth is in it, the same Seth who

murdered his own brother Osiris.

Good must triumph over evil, and the donkey must perish. It will be beaten. Pharaoh, the avenger, Pharaoh obliged to impose order on Earth on behalf of the gods. The people will wait, applaud, and cheer for the king when the beast dies. When I insist with Thoti, he tells me that nothing is ever entirely good. In every living being, there is always a part of evil and a part of good, so there must be something to blame the donkey for. I must pretend to believe him. In fact, what he wants to make me understand is that the cult should not be questioned, not to offend the priests. I hate them! Instead of this peaceful beast, I would prefer one of those ugly black rams with wicked eyes and twisted horns to be sacrificed, as is the custom among many other peoples.

*The night has come.*

I have lit the oil lamps. On the city side, multiple lights are visible: fires, torches, lamps. The nocturnal sounds are no longer just those of the farm but of all the creatures that live at night. Hidden in the tall reeds that border the canal, toads and frogs croak. These creatures love the mud from which they emerged, like all other animals and humans when gods created life, from tiny earthworms to plump and short-legged hippos. The nearly full moon casts its pale light on the large courtyard. It's almost as bright as daylight. On the side of the dock, I can't see the two guards who usually keep watch at night. Still on the city side, where the canal makes its final turn, a lantern suddenly appears. I can make out the front of a boat; it's unexpected, strange. And now, a figure dressed in white crosses the courtyard! I recognize Thoti by his shaved head and his gait. The two palace guards join him. The boat approaches and reaches the stairs. One of the two men at the front jumps onto the stone ledge, and the other quickly throws him a rope, which he wraps around a stone post. Once the boat is secured, a third man disembarks.

He is an officer who salutes Thoti; he wears the uniform of the Nubian Guard, an elite troop of Pharaoh. On the checkered floor of the courtyard, a final piece moves to meet them. It looks like my father. Yes, it's him, followed by our two guards. He joins the group and speaks to them briefly, but I can't hear anything from here. At a signal from the officer, the two boatmen and the two guards retrieve a large rectangular crate from the boat. Initially, it is placed on the ground at the foot of the last step of the stairs; then, they pass two large wooden spears through the rings fixed at the front and back, lift the crate carefully, and ascend the stairs. They cross the courtyard and enter

the palace. I can't see anything anymore. The amphibians that had fallen silent are reassured and resume their chorus of croaking. Intrigued, I await what comes next. The men don't take too long to reappear in the courtyard, but my father is not with them. It's Thoti who escorts them to the bottom of the stone steps. He salutes the officer, and then the boat moves away into the night. Our usual two guards resume their positions at the dock as if nothing had happened.

*I am Senout, continuing.*

I enter my chambers to go to bed. First dreams of the night, I am at the queen's court, luxury and easy life, beautiful dresses, jewelry, perfumes, fruit baskets, music and songs, dance performances, and bathing. I know all this well because three to four times a year, I go there with my father. When Pharaoh is present, all the women flock around him, trying to capture his attention, giving seductive glances, striking lascivious poses. My father watches all of this disapprovingly. Thoti warned me; I should never behave like them. There's a knock on the door, it's no longer in my dream but the familiar voice of Thoti.

– Senout, open the door !

I had completely forgotten. He had told me that tonight I should accompany him to my father.

– Yes, Master Thoti.

– The time has come. What exactly? I don't know, but it must be related to the cult of the dead.

– I'm coming.

I quickly put on a white linen dress, not one of those daytime dresses with straps that reveal the chest, but a loose dress that covers it and goes down to almost the knees. I take the onion necklace that Ranep brought me from the farm and put it around my neck. Their white bulbs are almost translucent. I open the door.

– Follow me.

Six torches are hung on the walls of the large hall. Yet they struggle to

illuminate the room as it is so large, the light fades at the entrances to all the adjoining rooms. I know that darkness alters one's perception, but the layout of the place is not normal. The great arrangement of papyrus on the back wall, it's gone! Its two parts have slid to the side, revealing the wall or rather the rock against which the palace is built, with a small opening in the middle leading to a narrow and dark passage that is not very inviting. My father is waiting for us there. Engraved and painted on the lintel that reinforces the entrance is a mysterious cartouche. It somewhat resembles Pharaoh's, but it's not his. Yet I'm sure I've seen it before; I remember, it was in the oldest archives. On the floor, on the side, there are debris of wood, those from the unpacked crate. We must not say anything, I can sense it, just follow my father and Thoti.

Thoti leads the way with a torch in hand; it provides enough light to illuminate the narrow corridor. On the floor, I see fresh and colorful streaks as if painted wood had scraped against the rock, obviously from the contents of the crate. The walls of the narrow tunnel are roughly fashioned; the marks left by chisels and hammers are still clearly visible. After about twenty feet, the corridor gently slopes upward into the cliff and finally opens into a vestibule. From there, the walls are better finished and covered in engraved signs. Among them, I recognize the cartouche from the entrance once again. At the far left, a side passage opens, leading to the bottom of a well. The resin of the torch crackles, and the flame flares up; it seeks air upward. I see a ladder in several pieces leaning against the wall of a well, which must communicate with the top of the cliff; it is not yet completely sealed off. We continue to advance. A few feet ahead, two burial chambers open on either side of the access corridor.

In the left one, the ceiling is a very dark blue, dotted with stars. By its position in the sky, I recognize the one that represents the dog announcing the flooding. There is also the moon depicted in its first quarter. On the left and right walls, there are scenes of field life and hunting scenes. In the middle of the chamber, sitting on the ground with crossed legs, a wooden painted scribe examines a medical papyrus. Beside him, a small low ebony table adorned with ivory inlays holds small pots like those used in pharmacies. Behind the character and on the wall, a bas-relief carved in the round and painted stands out from the wall; it depicts the god Thoth giving writing to humans. Other funerary furnishings complete the decoration of the room, all of them beautifully crafted with paintings and gilding. On a small alabaster table, there are models of mastabas and Djoser's step pyramid. A quartz bowl

contains small octahedral crystals, two pyramids placed base to base. There is also a water clock for measuring time. On the right, a cedar wood cabinet is filled with rolls of papyrus. Everything here reminds me of knowledge, architecture, medicine, and astronomy.

We exit. My father lights a torch that was left on the floor in the corridor, and we enter the room facing us; the ceiling is much lighter, painted a beautiful bright blue. The stars and the moon are now mere shadows. Painted on the wall are scenes of mummification rituals. Bennu, the soul of Ra, perches on a sarcophagus marked with the mysterious cartouche. The painted sun disk on the east-facing ceiling seems to flood the west wall with light; it is covered with a fresco depicting creation with the great temple of Atum and its high priest, the rituals of solar worship. The furniture in the room is entirely gilded, tables, stools, consoles. Amulets and statuettes are placed here and there. Among them, two represent the creator god, Atum Khepri as the god of the rising sun, and Atum Ra as the god of the setting sun. The whole ensemble does not evoke the cult of Memphis but that of Heliopolis.

Once again, I notice the same symbol, this time on the handle of the cane held by the high priest. This time, I've got it, it's the seal of Imhotep, a Horus falcon holding a staff with a coiled serpent. How is this possible? This is not how high-ranking individuals are buried. And then, I saw his mastaba and chapel in the field of the dead near the pyramid of King Djoser. I will have an explanation for this mystery when we enter the chamber where the deceased lies. For now, we visit a third room that has been excavated a little further down the corridor, on the left. It is much less lavishly decorated. It is just a storage room containing jars of oil and wine, granite and alabaster vases, smaller ones in rose quartz, usually used for containing perfumes, stone palettes decorated with wild animals, a painted wooden tray of fruits and vegetables, a pantry for the deceased. Painted on the walls are agricultural scenes: sowing, irrigation, a balance pump, and hunting scenes. Against the walls are tools, copper and flint sickles, weapons, bows, quivers, arrows, daggers.

Thoti signals to me, and I place the onion necklace that I was wearing around my neck near the fruit tray. We have now reached the deepest part of the tomb. It is cooler, and I shiver in my light dress. This is the entrance to the burial chamber. We pause for a moment. It is much less cheerful, austere, and impressive. Thoti has placed the torches on two rings in the walls. The entire room is flooded with light. It spreads to the empty chamber of the

Noun behind it. In the center of the burial chamber, a large pink granite sarcophagus is placed on the floor. The falcon serpent is engraved on its base, but this time larger, about two fingers in height. The stone lid rests parallel to the sarcophagus on two logs ready to slide effortlessly for resealing. On the side, sealed canopic jars contain the viscera, also marked with the cartouche. My father takes me by the shoulder, and we approach. Inside, I see the wooden sarcophagus, and I recognize the red lacquer left on the floor at the entrance to the passage. So, that was the cargo, a mummy.

– Senout, my beloved daughter, you are in front of the sarcophagus of Imhotep, the grand architect of the royal monuments during the time of King Djoser, the king's physician, the grand chancellor of Lower Egypt, and the high priest of Heliopolis.

Heliopolis, that's what I thought. He continues.

– Does that surprise you ? Officially, his resting place is at the Plateau of the Dead beneath his funerary chapel. That's where he should be resting, close to King Djoser. But his coffin is no longer there. It's better for him, safer. Evil spirits have tried to force their way into his tomb. It is essential that he can rest in peace. With the king's approval, and for him to continue his afterlife in peace, we have decided to protect his mummy in this new secret tomb. No one knows he is here except Pharaoh, Thoth, and now you. You must never speak of it to anyone. Only when I myself depart for the realm of the dead can you talk about it to your descendants, when you deem it necessary.

The boat, the chosen night, the night of the dead, so that there are no witnesses other than the silent and faithful guard, ignorant of the truth, Ranep's departure to the farm, all of this was planned. The mystery is explained. He continues:

– Of course, you must also wonder why here, in the House of the Architect. The answer is very simple and will fill you with pride, even if you must not take any arrogance from it, nor claim any special advantage. It is our strength, that of all our ancestors. Senout, you are the descendant of Imhotep. Today you have the right to know, you are no longer a child, you are a woman.

I feel myself blushing; he already knows. It must be Ranep, of course! She



must have rushed to inform Thoth when a few weeks ago I had the first sign that I was becoming a woman. But my father continues:

– Soon you will have to make choices, never forgetting who you are, where you come from, your loyalty to Pharaoh. Our lineages are connected. You will always have the protection of the king, just as I have, but you must be wary of the priests of Memphis throughout your life, those from the grand temple of Ptah. They are the ones who tried to break into our ancestor's tomb. They have always been jealous of the cult of Heliopolis. They must never uncover the secret, and thus Imhotep will rest in peace. We have taken the torches to retrace our steps back to the entrance.

Before exiting the tunnel, near the secret access, Thoth removes the double plug of a sand mechanism. The engraved lintel begins to descend slowly, reassuring my father about the closing of the shaft once the sarcophagus is closed. It should be done as soon as possible. A large stone slab seals the passage forever. In front of me, only a stone facade remains. Thoth and my father put back the two parts of the papyrus library in place.

– Senout, you need to be ready tomorrow at dawn. My father reminds me of the procession. I know. I already have prepared my festive tunic.

## **pyramids**

### Models

*Immersion: I am Senout, Great Architect's House, large workspace, year 2529 BC, fourth month of Peret, germination season, first half of March for the West, duration of experience: 1 hour 26 minutes.*

My father stands next to the large cedar table. Surrounded by his assistants, he examines a model. I recognize a scaled-down version of the complex of the Great Pyramid on the plateau of the dead. The square-shaped shaft that traverses the ceiling floods the model with natural light, revealing the smallest details of the pyramids, enclosures, temples, chapels, and various structures. In the rest of the room, the light is dimmed, slightly yellowed by the reed blinds that have been rolled down in front of the windows. I can barely make out the cornice that runs along the room. It

highlights the ceiling with a frieze which alternates cobras, falcons, lotus flowers, and papyrus. The large wooden entrance door has its panels folded back, open to improve ventilation; the air circulates, exiting through the windows and adjacent corridors. I am in what is called the archives corridor on the north side. The rooms that open onto the main hall are connected by an east-west alignment with walls covered in compartments. All of Egypt's knowledge is here, according to Thoti, with floors and floors of niches filled with precious scrolls, some of which are very ancient, the entire memory of the past since writing began, the state of knowledge in mathematics, astronomy, cartography, medicine, pharmacy, and construction. The corridor is wide enough to accommodate a workspace in its center: stools, low tables equipped with inkwells, stone pots to dilute ink and rinse reed styli, blank papyrus. This is where I began to learn how to read, write, and calculate when I was very young.

Today, I could find any scroll in the archives faster than anyone else. I know where the writings explaining how to extract stones from quarries are, how to work blocks with copper chisels, how to make them harder by hammering them, the number of men needed to move a block, the best way to load and unload barges on the river, how to move loads on tracks and ramps, how many logs, ropes, and grease are needed, how to stack blocks into columns and erect a monolith, how to choose the best irrigation technique, build dams, canals, and locks. I could assist physicians in finding the description of all the symptoms of a disease and the proper way to treat it. I have explored everything here, studied the plans of the Gates of Heaven, the method of building tombs, leveling the ground before erecting a pyramid. I know how to use a water level and track the movement of stars. Thoti often tells me that I know much more than any royal scribe. Tozar has just placed a small wooden pyramid on the model; it is much smaller than Pharaoh's, whose decoration has just been completed and sits in the center. In fact, it is the queen's pyramid, still under construction on the plateau.

The Grand Architect listens, preoccupied, to the explanations of the Babylonian. The latter has unrolled a papyrus. He makes grand gestures and speaks with confidence. However, my father seems worried. I know that Tozar is not proficient in the art of stone construction. He comes from a country far to the northeast, much farther than Palestine, on a river called the Euphrates. They mainly use bricks for constructing monuments, even though, according to Thoti, they are gigantic. That's why he's here, to learn how to build with stone. In Egypt, it was my ancestor Imhotep who introduced it in large

quantities for monument construction after developing cutting, measuring, and fitting techniques.

The bearded assistant does not master his subject well. There is evidently a question of the delivery time for construction materials. The queen insists that her pyramid be clad in bright white limestone extracted from the Torah quarry located on the eastern bank, about six miles from here. This poses a problem as it is already working at full capacity for the expansion and embellishment of several large temples. Moreover, the peasants will soon begin the harvest. It is uncertain whether the blocks can be extracted and transported on time under these conditions.

To exacerbate the situation, the ground shows signs of subsidence near the southern corner where the small pyramid is under construction; therefore, the terrain will need reinforcement. Tozar was too confident. My father, absorbed in multiple tasks, had entrusted him with the responsibility of the site, which is now falling behind schedule. The problem is that the queen is in a hurry and eagerly awaits completion. Pharaoh promised her that everything would be finished on the exterior after the harvest. Obviously, it will be impossible! The proud Tozar persists and refuses to acknowledge his mistakes. At the beginning of the work, to stand out and out of ambition, he wanted to impose a steeper slope on the pyramids, which ended up settling on themselves. Instead of changing the slope during construction and obtaining a monument with a bloated appearance like the existing rhomboidal pyramid of Sneferu, my father preferred to demolish the structure, risking criticism from all those who envy him. A solution must be found as soon as possible.

My father proposes to Tozar to expedite the construction of the small temple adjacent to the monument. This would allow the sculptors, painters, and carpenters to start work sooner. They would settle for cladding only a small part of the pyramid with the white limestone that reflects sunlight so well. They could also start placing the golden pyramidion that should crown the top. All of this would enhance the work done and allow the queen to envision the completed work. Subsequently, after the harvest, the peasants, freed from fieldwork, could come to assist in transporting the stones. The people of Egypt willingly participate in the grand projects; there is no need for slaves. Each person understands that it is a superhuman work and takes pride in it. To raise the Gates of Heaven is to elevate oneself, to elevate the entire country; the grandeur of the temples and pyramids is the grandeur of Egypt. Postponing the complete cladding of the pyramid does not seem to

satisfy the Babylonian. Evidently, he is not pleased at all, yet he has no choice. In a sycophantic voice, he finally acquiesces; he will have to comply.

I am pleased, a small revenge. I don't like Tozar, his oddly styled dark beard, his hairstyle, his arrogance, his brusque way of addressing the scribes when my father is not around, giving them orders. He thinks he knows everything and knows better than the Egyptians, but if I don't like him, it's mainly because of the way he looks at me. Every time he passes me and my father is not there, he examines me in detail, like a livestock buyer at the market. He lingers his gaze on my dress, my belly, and my chest. Then there are all those rumors about him in town that Ranep tells me. He seeks young women in the neighborhoods for amusement, for debauchery. He even allegedly bribed a judge who unjustly convicted and arrested a worker on the pretext of theft. Tozar simply wanted to take the worker's wife.

### **divine proportions**

*I am Senout, continuing the story.*

Thoti has changed his attitude. Since the revelation of my origins, he has confided in me about his own past. It has nothing to do with the prestigious lineage I belong to. His life has been tough, his journey difficult, that of a royal scribe who started from nothing, of humble origins, and recognized only for his talent. I had papyrus, feathers, and quality ink right from the start. He had to make do with scratching and drawing on ostraca, fragments of ceramics or limestone, when he was a child. Fortunately for him, Egypt allows the best to distinguish themselves. It doesn't stifle talent but allows it to flourish for the greater interest of all. He told me all this with simplicity and without bitterness. It all started for him when his father went to see the district official. The harvest had not been good, at least it was surely overestimated. The number of bushels of grain demanded as taxes wouldn't have even left the family with enough to eat before the next harvest. While waiting for his father outside the door, Thoti started drawing with a piece of charcoal. When the official came out, he noticed him and spoke to my father. That's how, a little later, Thoti, as a young boy, went to the school of scribes. He had to climb the ranks one by one, a long and arduous training where he spent most of his time copying lists and texts, even though he found all these administrative tasks boring and repetitive.

Then one day, luck returned. While copying an accounting text, he found

a significant error. This initially triggered an angry reaction from his superiors, disrespect, a young upstart daring to suggest that the accounts might be incorrect! And why not deliberately falsified? But Thoti was right. He was then directed towards the accounting specialty. There, he became interested in numbers, geometry, and the dimensions of constructions. Then he was introduced to my father, who took him into his service. When it came time years later to find me a tutor, my father didn't hesitate, and Thoti had to juggle work at the palace with my education. He quickly became like a second father to me since I had no mother.

Today, Thoti is absent. He went to the queen with my father, carrying a basket full of scrolls, plans, and decoration projects. I suppose it is mainly to explain that the complete covering of the pyramid's faces could experience delays. I find myself in the archive corridor, continuing my work on the gates of heaven, following the instructions given by Thoti. When everything is finished and he has reviewed it all, I will assemble all the papyrus sheets by sticking them together. The resulting scroll will then be stored in the secret archives. It is a document reserved for the initiated, recounting the true history of men and their burial practices. It contains a truth that would probably not please the priests, the gradual transformation from small heaps of stones protecting the remains to the gigantic gates of heaven that are the pyramids, the history of failures and successes, supported by plans and numbers, how they arrived at the dimensions of the Great Pyramid, how they determined those numbers considered sacred by the priests. Everything is simple and there is nothing divine about it, but it is best for it to remain mysterious. However, the priests firmly believe that numbers carry a sacred secret message. Thoti insisted that I be the one to complete his work. Numbers have always been his passion.

The synthesis work he has given me is a bit of a test for me. I must finalize the plans, explain the different choices of proportions, how we arrived at the ones currently used. I started with the plans. On the very first sheets, I reproduced those of the humble brick mastabas from the early days, those in the southern part of the country in the region of Abydos. They were built without always respecting the orientations of the east and west. Then I moved on to the first pyramids, two full sheets for Djoser's pyramid, the plan with the steps, dimensions, orientations, and average slope, three sheets for the three pyramids of King Sneferu, the stepped pyramid, the rhomboid one, and finally the smooth-faced red pyramid. I have already dedicated four more sheets to the Great Pyramid, the one my father worked on so much. I am

quite satisfied with my work, the fineness of the sheets, their whiteness, the quality of the ink, all contribute to making the document enjoyable to peruse. I would love to add some colors. Knowing Thoti, he will say it is superfluous!

I am now working on the second part. I must simply explain the dimensions of the pyramids, their relation to sacred numbers, and summarize the astonishing properties associated with them. For this, I have an ancient scroll written by Thoti himself and all sorts of studies on numbers. In Thoti's document, before addressing the question of proportions, it is reminded that the pyramid allows the Pharaoh to elevate his soul from the underground realm of the dead to the realm of the gods. It also mentions the material, stone. When one is surrounded by it, strange thoughts come to mind. It would, therefore, be preferable to simple mud bricks. To build a monument of stones is like reaching towards the sun.

How to make a mountain? With terraces, that's the simplest way to ensure regular construction, a first foundation, a subsequent layer with a smaller surface forming the next foundation, and so on. Why this four-sided shape? According to Thoti, it comes from observing nature. In the southern mines, where diorite is extracted, there are curious stones that adopt the shape of two small pyramids with four identical faces, which are joined together at their bases. They are the same ones I saw in Imhotep's tomb. They seem so perfect that some think of them as gifts from the gods! Similar stones can also be found, but this time in quartz and with the same shape. Finally, I also know that in the forbidden archive's hall, inaccessible to ordinary scribes, there is a chest that contains these peculiar stones, but this time they are heavy as metal. Next to them, there are small needles made of celestial metal. They have strange properties. Thoti claims that with these objects, one could find the north and south without relying on the stars. Yet when I asked him why they weren't used to align the pyramids, he explained that there was still a problem. The indicated directions would be slightly different from those deduced from observing the sky. I didn't press the matter further.

The question of the sacred numbers remains. The question of their slope is extensively discussed in the documents I have. A square base with side length  $a$ ,  $M$  the midpoint of one of the sides,  $C$  the center of the square base, four faces that unfold into triangles from the four sides on the ground to meet at the apex  $S$ ,  $CS$  the height  $h$  of the pyramid. The larger the ratio  $CS/CM$ , the faster the pyramid rises towards the sky, in other words, the steeper it is. Drawn by Thoth's own hand, there are many right triangles  $SCM$  with a right angle at  $C$ . He classified them as follows:

First choice:  $CM=CS=1$ , this is the simplest choice, the one adopted for the pyramid of King Djoser, after enlarging the original mastaba in several stages.

Second choice: the simplest right triangle to imagine, namely  $CM=1$  and  $CS=2$ . By adding the three sides  $CM$ ,  $CS$ , and  $MS$ , we get 5.236, precisely the digits found in  $\pi/6$  with  $\pi=3.14$ , thus a sacred rectangle according to the priests. However, it was too steep, and Thoth points out that the architects never managed to stabilize the structure with this choice.

Third choice:  $CM=1$  and  $CS=\sqrt{2}$ , this time  $MS$  becomes equal to  $\sqrt{3}$ . Thoth noted on his scroll that this choice initially seemed wise to both the architects and the priests because it seemed to correspond to the proportions of octahedral crystals found in nature. In practice, it had led to a failure: Snefru's pyramid had deformed in its lower part; to complete it, the slope had to be decreased during construction.

Fourth choice: a scribbled triangle with 3 and 4, another simple choice, the 3-4-5 triangle, which was chosen for the Meidum pyramid.

The following choices clearly show that the designers of the pyramids continued to experiment until they reached a ratio even more mysterious than the others: by choosing a right triangle  $MCS$  with sides 11, 14, and 18,  $CM=11$  and  $CS=14$ , then the slope of the pyramid is slightly lower than for the 3-4-5 choice. What particularly pleased the priests is that the sides 11, 14, and 18 are in the ratios 1,  $1 \times 1.27$ , and  $1 \times 1.27 \times 1.27$ , and it turns out that 1.27 is close to  $4/\pi$ , another sign of a connection to the divine, to the solar disk. With this choice, the perimeter of the pyramid's base is equal to the perimeter of a solar disk centered at the apex  $S$  of the pyramid and tangentially touching the base at the point  $A$ .

I now know enough, there is no mystery in all this. It's time to arrange all these attempts in a table. Thoth was right, it was not the gods who decided the dimensions of the Great Pyramid, but men who groped their way for a long time before finding the solution.

Pyramids  $CM/SC/SM$  (in chronological order of construction):

Djoser (step pyramid):  $1/1/\sqrt{2} = 1.414$

Half-octahedron (natural crystals):  $1/\sqrt{2}/\sqrt{3} = 1.732$

Red Snefru (first smooth-faced):  $1/1/\sqrt{2}$

Meidum Snefru: 3/4/5 (i.e.,  $1/1.3/1.7$ )

Khufu (Cheops):  $11/14/18$  \*

Khafre (Khafra, Khéfren): 3/4/5

Menkaure (Mycerinus, Mykherinos): ratios close to Khufu's.

\*  $11/14/18 = 11/11 \times 1.27/11 \times 1.27 \times 1.27$ , i.e.,  $11 \times 1.618$ . 1.27 is close to  $4/\pi$ , 1.618 is the golden ratio, and the ratios of the sides remain very close to those of the Egyptian triangle 3-4-5.

### **lineage**

Long before

*Immersion: I am Senout, House of the Architect, year 2529 BC, second half of March in the Western calendar, duration of the experience: 1 hour 30 minutes.*

I am at the end of the grand corridor of the archives, more precisely in a small inner courtyard near my father's apartment. My work is finished: fourteen sheets glued together in a scroll dealing with the dimensions of the pyramids. Thoti has just finished examining it, and I await his verdict. He joins me, sits on a small acacia stool matching the table against one of the walls. In one hand, he holds the scroll, and in the other, a box made of ebony wood inlaid with ivory and carnelian.

– You have done a good job, Senout. I am satisfied, and I think your father will approve as well.

– Thank you, Master Thoti.

I would like to talk to him about colors to make the papyrus more attractive, but he doesn't give me the time.

– You worked very quickly, but it doesn't surprise me. You know how to play with numbers, and you understand quickly. You know many things: the cycle of years, stars, the moon and the sun, the history of the creation of the Earth, the history of Egypt and the Pharaohs. Yet, there is one thing you still don't know in detail: the history of your family.

We have never talked about it except for Imhotep, where is he going with this?

– It is high time you know a little more about the past.



Ranep places a clay pitcher and two cups. It is filled with fresh water just drawn from the well. Thoti quenches his thirst.

– We need to go back in time, more than a hundred floods ago, to the time when the southern kingdoms sought to unite the two crowns, to expand their influence to the north. Until then, all the efforts undertaken had ended in deadlocks. It was at this moment that the south acquired a fleet like never before seen on the Nile. Large pieces of wood had arrived from the Mediterranean coast. They allowed the construction of new vessels measuring up to eighty cubits long. They were equipped with a bipod mast sturdy enough to deploy a large rectangular papyrus sail up to twenty-five cubits above the water level. The rudder had also been improved, operated by several men. To compensate for the lack of winds, up to fifty rowers were planned. The flat deck lent itself to quick deployment in case of an attack and easy loading. These war machines had no equivalent in the north. Furthermore, to the east of Thebes, a new mine had been opened, producing tin. Mixed with the copper from Sinai, it yielded a metal suitable to produce highly resistant weapons after hammering. Scissors were also made to facilitate stonework. With the weapons, the vessels, and numerous Nubian archers recruited, the south was militarily prepared.

Many points already united the peoples of the river, those of the delta, those of the middle course, and those of the far south. From the great sea in the north to the sources of the Nile, all depended on the whims of the river, all were actively concerned about life after death, the underworld, the second life. All agreed on how the world had been created, even if the gods had slightly different names. All were building temples; there was already a certain cultural unity. Then, King Djoser, who controlled the Nile loop between Abydos and the future Thebes, thought of using the priests. In parallel with the increase in military forces, he arranged to contact the high priests under the pretext of cult exchanges or even trade exchanges. Impressed by the wealth of Nubia, they showed interest. Each could benefit if King Djoser managed to gain control of the north. The stratagem worked, and the two crowns could be united this time in a lasting manner.

Ranep places a bowl of fruit and another of honey-sweetened wheat cakes. She checks the water level in the pitcher. Thoti continues his explanations:

– Once all the priests were standing behind Pharaoh, of course, they began to compete ; their influence grew stronger. This grip, however, was accepted and endorsed by the people when they realized that the king was at the top of the cult. He would remain the supreme arbitrator, and that reassured them. Gradually, the gods gradually infiltrated everywhere, even in the smallest gestures of everyday life. Every man, from the most powerful to the weakest, began to interpret his life based on religion, both his successes and failures. What would happen after death gradually became more important to him than the real life of an Egyptian on the blue planet. Religious thought became an essential component of the cohesion of the kingdom of the two lands.

*I am only Joy.*

Humanity has entered an age of irrationality, that of kings and priests, an age where beliefs will often dominate. It will be the beginning of a very long era during which religion will prevail; it will lead to dreadful atrocities, human sacrifices, wars, humiliations, and all kinds of misery. Kings will rule with the support of priests, priests will rule with the support of warriors, predators of wealth, predators of souls. Princes and priests will build superhuman structures to better impress the people, to push them to accept the material and spiritual order established by force.

*I am Senout.*

Thoti continues:

– Your ancestor Imhotep, as you know, was the high priest of Heliopolis. It was on his advice that the king of unified Egypt decided to establish the new capital of the kingdom of the two lands in Memphis. It was good politics to get closer to the more populated delta. It was also from this time that a rivalry emerged between the clergy of the Great Temple of Ptah in Memphis and that of the Great Temple of Heliopolis. Imhotep, being the high priest, wise man, scholar, building engineer, Grand Architect of royal works, and the king's physician, had considerable influence over Pharaoh. When he was alive, this rivalry between local clergies was contained at the highest level. To have an even more beautiful temple, the high priest of Ptah needed Imhotep, even if he hated him with his worship of the sun god Atum. Duplicitous and hypocritical, he spent most of his time secretly trying to turn the priests against him. For this purpose, he spread the rumor that Imhotep intended to

unify all the cults; the one celebrated at Ptah in Memphis would be absorbed by that of Atum. This was never the case. Bringing together the cosmogonies of Heliopolis and Memphis could indeed have strengthened the cohesion of the kingdom in the long run, but for Imhotep, it was too early; he had never suggested this idea to Pharaoh.

A light breeze picks up. The folding screen moves slightly. A bee ventures onto the low table, hesitates over the plate of cakes. Thoti quickly brushes it away with his hand and calls for Ranep. She knows what to do, takes one of the honey pastries and places it a little further away on the terrace ledge. Thoti continues :

– Throughout Imhotep's life, the priests couldn't harm him, not even the high priest of Ptah, who had connections at the court. However, as soon as your illustrious ancestor joined the realm of the dead, they did everything to drive his son out of the clergy. Despite that, the lineage managed to preserve the responsibility for the construction of Egypt's greatest monuments from generation to generation: the royal palaces, the Gates of Heaven, grand temples, and pyramids.

Over time, the hatred seemed to have diminished somewhat, but the priests of Memphis still couldn't get their hands on the archives of the Heliopolis temple. You must know that these archives contained a great number of secrets, some related to unification, others to the history of royal succession. They could grant immense power to those who possessed them. This could have caused significant problems for important figures in the kingdom. There were also numerous manuscripts, papyri dedicated to astronomy, numbers, medicine, surgical techniques, all areas of great interest to the priests.

– Are those archives here ?

– They are in the secret cabinet but let me continue. From one pharaoh to another, they came and went, not always from father to son. Nevertheless, during all this time, your family remained in place, in the shadow of the kings. The reasons? Talent, competence, and your ancestors never claimed any title or privilege. In truth, they never owned anything, just like your father today doesn't own anything. Neither the palace nor even the farm belongs to him, and he wouldn't even be able to provide you with a dowry on your wedding day. For the kings, Imhotep and his descendants have always been considered a gift from the gods, the gift of knowledge, intelligence, and wisdom.

– What about our servants, guards, my father's travels, and all the other expenses and responsibilities ?

– The court steward takes care of all the details and provides for all our needs. It has always been this way, and it's crucial that the palace is well-maintained, and the guards are present at their posts, as the consequences would be immediate.

I catch sight of the row of archives; scribes are busy there. One of them enters the courtyard, bows, and whispers in Thoti's ear. Thoti also replies in a low voice, and the scribe hurries back to his task.

– Now we come to the time of your grandfather. The friendship he had with the king revived the jealousy of the priests. When Pharaoh publicly declared him as his great friend, that's when the hatred erupted. The clergy of Memphis spread rumors about supposed advice he would give to the king, teaching everyone how to write. Everyone in the people could then understand what the scribes wrote, each person could control exactly what their neighbor possessed, and everyone would have access to knowledge. Worse, anyone could become a scribe, a terrible threat that would destroy Egyptian society. This insidious and dangerous idea originated secretly from the high priest of Ptah.

– And what about the others ?

– You mean the priests from the delta and the south ? They had nothing specific to reproach your grandfather for; they maintained good relations with him.

**protected.**

*I am Senout, continued.*

Thoti takes the ebony box. He opens it and unrolls a small papyrus.

– Here is inscribed the genealogy of your ancestors, starting from Imhotep, the secret of your origins. This scroll proves that you are directly descended from him. After his death, Imhotep was buried in the funerary complex of the king near the stepped pyramid, until the recent day when he came near us, here, in the cliff. Your famous ancestor had a son who himself

had descendants. All the male descendants continued the tradition, a dynasty of architect-builders in service to the royal dynasty. Your father is the great-great-grandson of Imhotep.

When your mother died giving birth to you, I hoped he would take another wife, have a son, not break the line. But he couldn't overcome his grief, and he gave up. He had already lost his father, your own grandfather, when he was just eleven, disappeared under dubious and unresolved circumstances, probably poisoned. He started to think it was a curse. Everyone pretended it was an accident, but Pharaoh, King Snefrou, was deeply affected. He placed your father under the protection of his personal guard.

That's when the royal cartouche was engraved here on the palace porch, a very clear warning to anyone who would harm the child. They would lose their lives, as well as all their loved ones. Twelve Nubian guards came to ensure his safety, and the grand steward sent renowned scribes to take care of his education. He grew up here, alone with your grandmother.

– There's one thing I don't understand about my ancestor Imhotep. How did he become close to Pharaoh?

– Originally, he was just the son of a humble potter. As a child, he molded wet clay into pots, vases, and bowls. The first pots, thick and sturdy, were suitable for nomads but not elegant enough for city dwellers. So he successfully adapted his father's production by creating finely decorated containers. At the same time, he encouraged his father to make small objects like amulets, catfish, hippos, scarabs, and baboons, which improved the family's daily life. All the figurines were remarkably lifelike, and it was a success.

But all of that was just child's play for young Imhotep, and he began working with stone. His talent was quickly noticed. The shapes were beautiful, and he knew how to make the best use of the colored veins in the stone. His makeup palettes decorated with animals became highly sought-after in the richest households. The stone vases, also remarkably beautiful, began to adorn the tombs of the nobles.

Embarking on his newfound confidence, he became interested in stone as a construction material. The monuments would be more durable than those made of mud bricks that erode with rain and wind. That's exactly what those who were concerned about the afterlife desired. From then on, everything accelerated, and he quickly hired workers. While he guided and supervised their work, he learned writing from one scribe, numbers from another, and

medicine from a third. He was gifted and eager for knowledge. He was recruited as a temporary priest at the grand temple of Heliopolis, where he quickly made his mark. He went through the initiation to enter the permanent clergy. His range of skills, his moderation, and his wisdom led him to the highest positions until he replaced the high priest of Atum when he departed to the realm of the dead. Imhotep was already in place when Djoser extended his dominion to the north, and he played an essential role because he was listened to and respected throughout the delta. That's how he became such an important figure alongside Pharaoh. Later, the succeeding Horus kings always regarded the lineage of Imhotep as sacred. That's also why the Queen wanted you to be raised at the court.

## **my child**

in the distance

the city.

*Immersion: I am Senout, Memphis, Architect's House, year 2529 BC, beginning of Chémou, second half of March.*

It's morning. I am on the small terrace of my apartment. The dazzling sun from the east penetrates through the lattice screens. To the south, I contemplate the city, well highlighted by the morning light. Its imposing white walls, built with brick and plastered, are topped with bright white limestone. It must be about a thousand cubits long from north to south and nearly five hundred from east to west. I also see the royal palace, as well as those of the queen and high-ranking court officials, many places where I have already been with my father. Surrounding them are neighborhoods with progressively smaller structures as one moves away. I also distinguish the port connected to the river by a wide canal, the commercial basin, and its wide docks lined with warehouses. Nearby is the large grain and livestock market. I have been there several times with my father to witness the arrival of the large barges carrying construction materials.

Over there, I can dream of adventure, of all the expeditions that my father regularly undertakes to the south. He also took me once to the military basin where the royal boats are moored. They are easily recognizable, flat at the front and raised at the back, with a characteristic mast and cabins larger than

those of ordinary boats. Instead of being made of simple reeds and canvas, they have a real wooden structure. As for their prows, they are richly decorated with lotus flowers and the emblem of the falcon god Horus. One boat is reserved for the king, one for the queen, and five others for the princes and high officials, allocated according to their needs. I have boarded one of them. My father uses them when he goes on missions as Pharaoh's plenipotentiary envoy; according to Thoti, this means he represents the king and can even make certain decisions on his behalf.

I mechanically direct my gaze towards the Ptah complex. It too is enclosed by a large rectangular earth brick wall, plain and undecorated. Ptah is the patron god of artisans, those who create and manufacture every day, their master. He is the most revered god by the inhabitants of Memphis. I manage to distinguish all the buildings dominated by the grand temple; I know the function of each one, dependencies, stores, workshops, scribes' offices, the enclosure of the sacred bull. All the plans are archived in the great library here at the palace. I could cite the dimensions of the grand colonnade within a cubit, those of the peristyles and various halls of the grand temple. Built with very large blocks of limestone, the final part is fifty cubits long and half as wide. I even know the slope of the central aisle from the entrance open to the ordinary priests to the last chamber. In that chamber, the chamber of the god, the divine of divines, only the high priests and Pharaoh can enter. The rays of the rising sun illuminate his effigy for a few moments every day, after passing through a narrow window. It is the daily awakening of the god sitting in his stone cradle, the monolithic Nao. Thoti described that last chamber to me.

He could access it, only once in his life, with my father to prepare for a refurbishment and embellishment. He saw the sumptuous divine statue made from a single block of greywacke, the carefully polished green rock, the shroud clinging to its skin, its divine beard, the unsettling expression of the face with its crystal-clear eyes set in a white stone cornea. A gaze seemingly lost in emptiness, towards infinity, half stern, half benevolent, the gaze of one who knows everything, the authority that will forgive nothing. Ptah holds in his hands the scepter with three symbols: ankh, the symbol of life; Heka, the shepherd's staff representing power; and djed, the pillar of stability and longevity. At his feet, still within the Nao, lies the head of the sacred bull. The god never leaves, only his other representation, Sokar, does so on the day of the dead.

The temple is beautiful, but the souls of the priests are venomous. Since I

learned about my grandfather, I hate them all. They are nothing but greedy and lazy hypocrites, profiting off the toil and exhaustion of the common people. The gullible common people would like to be able to address their pleas directly to the god, but it is forbidden to them; they absolutely must go through the priests. Why should one have to know how to write and count in order to invoke the gods? It is so unjust. All these mysteries, this secrecy surrounding the cult, are just a means to prevent ordinary mortals from speaking to the divinities. Confiscation, power, wealth! The stores of the grand temple are overflowing with grain. The overseers seem quite lenient with the clergy of Ptah, allowing them more than their normal share of the harvest. It is rumored in the city that, in addition to all kinds of goods and provisions, a considerable quantity of copper ingots is stored there, some coming from the mines of Sinai. The well-hammered metal is used to make tools but also formidable weapons, spear and arrowheads, compact and efficient axes.

*Same day, midday.*

Like every week, I came to the grand market accompanied by Ranep. My father allows me to go there only on the unavoidable condition of being escorted by two palace guards. They try to be discreet, but they are easily recognizable by their black leather vests studded with copper nails. As soon as they are spotted, fear spreads among the merchants, and whispers follow me as I pass by, "The princess of the sky." That's what they call me. I imagine it's because of the temples and pyramids, those Gates of the sky that my father is the mastermind behind. The market square is bustling with life, and you can find everything there. Public scribes are busy filling sheets of poor-quality papyrus, thick and often grayish, nothing like the ones we use at the palace. There is a constant coming and going of oxen and donkeys. They are loaded with food, grains, vegetables, fish in baskets, poultry in reed cages, jars of beer and wine, local or from Phoenicia. In the middle of the square, the stalls are overflowing with vegetables, fruits, spices, sweets, medicinal plants, trinkets, and toys for children.

As usual, Ranep tastes numerous pastries during our visit. In addition to the colors and sounds, various scents mix: musky fragrances of perfumes and ointments, pungent smells of exotic spices, and finally, the characteristic odor of leather goods. The tanners' quarter is precisely nearby, between the market and the river. The stench of untreated hides is overpowering on-site; it is further enhanced by the nauseating effluvia rising from the treatment



basins. I pity those who work here; it is even more arduous than tilling the fields. In addition to the putrid smell, they bring home after work, their bodies wear out. Crushing the hides with their feet in muddy water basins where tannery products are poured, beating and stretching the skins, all these tasks prematurely age their hands and feet. I know of ointments that could help them, but no one seems interested in them. The potters, on the other hand, are better off. I watch them skillfully shape wet and sticky clay into various forms: pots, figurines, and amulets for funerary worship.

But I sense that Ranep is getting impatient. What interests her is the fabric district. Let's go there. Several dozen shops offer all kinds of fabrics. She unfolds them, turns them over, feels their thickness, tests their flexibility, imagines the draping of the future dress or tunic. She finds what she was looking for to please her man, one of the palace guards. After that obligatory visit, we head towards the jewelers' stalls. There is a profusion of bracelets, pendants, and gold medallions depicting Ptah as a sacred bull. Beyond his role as the protector of potters, blacksmiths, basket weavers, tanners, and sculptors, Ptah is the origin of everything. After conceiving the world in his heart, he created plants and animals, papyrus, lotus, snakes, fish, bulls, leopards, and even humans. Ptah knows eternity and controls time; he knows what is right, listens to prayers, and can grant wishes. Thus, the common people exchange lucky medallions, just as they exchange gris-gris in the Kingdom of Kush or amulets in the Kingdom of Kerma. I suggest Ranep choose one. She seems so happy that I also give her a ring.

*The next day.*

I finished my day of study, an ordinary day of learning and learning some more. Sometimes I feel like I know far too much. It's late afternoon, and I've returned to the terrace. There is a commotion coming from the farm, a cacophony of cries, clucking, chirping. They all join in, geese, ducks, guinea fowl, chickens. Even the alerted peacocks participate in the concert. They all await their evening meal. A farmer arrives and throws them grains, and calm is restored, leaving only the sounds of the scramble. Ranep plays by the edge of the basin. The water is clean, clear, and well-aerated. Every morning, we pump it up from the farm. Ranep is superficial and clearly content with it; I have tried in vain to teach her some writing, but she has no interest in it. Once again, the materials, ink feathers, shards, and papyrus, are abandoned on the small low acacia table with jackal legs.

Ranep teases the fish hiding under the lotus leaves with a reed, and she

tries to see her reflection in the water. Why doesn't she want to learn? Why doesn't she seize her opportunity? She accepts her role as a servant, takes life as it comes, without making plans. She accepts it as if her destiny had been sealed during the raid on her village. She doesn't even seem surprised by the sight of all these monuments, palaces, temples, or pyramids. Their splendor should dazzle her, but she barely pays attention to them. For her, they are there just like the mountains and the river are there. Does she realize that it is humans who conceived, designed, and built them? She isn't even capable of distinguishing them from the men in her village.

They were content with a miserable life in the far south of Nubia. Her parents must have lived in a mud-walled hut covered with tall, dried grass. They paid with their lives for their naivety. Believing only in the danger of wild animals, ignoring human cruelty. But perhaps after all, she understood all of that at least for a moment, and then she wanted to suppress it immediately because it was so hard to accept. It would have led her to blame her own parents for their inability to protect her.

Several times I tried to talk to her about our religion, but it's too complicated for her too. Why another life? Why bother with it? In her village, they spoke, or rather communicated through thought, directly to the trees, the forest, the animals. When a man or woman died, their corpse was even sometimes left to the wild animals. What mattered most to the people in her village was the real life, not a virtual life after death. The day progresses, and Ranep has lit small, scented sticks. Placed in a finely decorated clay container, their glowing tips begin to release fragrant effluvia, a protection against insects. These aromatic scents remind me of the essences used in the cult of the dead.

### *Twilight.*

Soon the whole house will be in the shade; the sun will finish its course behind the cliffs of the west, the horizon of the Occident. Like every day, Atum the creator will join the edge of the realm of the dead on his solar boat, behind our dwelling, where the great necropolis dotted with tombs is located.

### *I am Joy.*

What is this promise of a second life made by some men to others? I believe rather that true eternity, as designed by nature, lies in offspring, reproduction. The eternity of plants, the first bulbs that emerge from the

ground in germination resemble the plants of the previous year. The eternity of humans, sons resemble their fathers and mothers.

**get ready.**

*Immersion: I am Senout, House of the Great Architect, in my apartments, in the year 2529 BC, Chémou, harvest season, first half of April.*

My father tends to think of me as a woman. Yet he raised me as a boy, the son he couldn't have. As for me, I accepted it, played along, dedicating more time to study than anyone else. I can write, draw, and calculate like the best of scribes. Thoti even acknowledges that I have more knowledge than most scribes in the grand temple, and he believes I could succeed my father one day. The problem is, there has never been a female architect before.

The other difficulty is the Queen. I am not a princess, but she insists more and more that I join her at the court. She finds it strange that a young woman who is said to be beautiful still lives with her father. But at her place, one always must appear better dressed, better groomed, adorned with jewelry, smiling all the time, not thinking too much, not talking too much, only saying superfluous things so as not to bore the men.

A princess's life? That's not what I want. In fact, with all that I know now, I don't even know who I am anymore and who I would like to be. I'm afraid of no longer being like everyone else.

– I was sure I would find you here like every evening. My father just entered the terrace.

– Good evening, Father. Judging by his expression, his way of speaking, I sense that he has something important to tell me. Although I am in a stable mood, he wants to make sure it's the right time to talk to me.

– I saw the king at the palace, it was yesterday. He talked to me about the queen's construction project, the pyramid, the chapel, the renovations. I brought him the plans. Apparently, they should suit the queen, and the work will resume as soon as the crops are in ? Tozar will oversee them. He also asked about your well-being, the queen is ready to welcome you.

A pause, a hesitation. Of course, in Egypt, as soon as a girl reaches marriageable age, a husband is found for her. They must have discussed that.

– You grew up among the scribes, with men, with me and Thoti. If the queen wants you to live at the palace, it's because she's concerned about you. She thinks you could have a more pleasant life with her. Maybe I held you back for too long. You have worked a lot, and you could easily succeed me, you have all the abilities for it, but you are a woman.

– But, Father, I have Ranep, and I am happy here !

– When your unfortunate mother left, I didn't have the heart to replace her. You have brightened my life, but I worry about you. I won't always be here, one day I will also go towards the sunset, and so will Thoti. What I mean is, it's time to think about your life, about having offspring. The royal court could be a solution, you are beautiful, educated, intelligent, and you could make an enviable place for yourself at court. Suitors won't be lacking. You could find a good match. Pharaoh has pledged to provide you with a generous dowry. And you know well that it's never good for a woman to wait too long. He waits for my reaction, but I don't know what to say, what words to find.

– I'm not asking you to decide immediately. I must go on a journey to the south, to the far borders of the country, Assouan-Souenet. I will bring back the most beautiful stones, a sarcophagus for the queen, a new stone niche, a green-greywacke Nao for the temple of Ptah. The priests have asked Pharaoh to beautify the grand temple; the current enclosure has become unbearable for them. For the temple entrance, they want granite like in Thebes. It's a competition for who will have the largest, most beautiful, and richest monument. They also want to redo the flooring of the sanctuary, with beige and pink granite tiles. Thoti will accompany me. If you wish, you can come. However, you should know that it will take several weeks to reach the cataracts. We will probably be away from Memphis for at least two months. Of course, if you decide to come, Ranep can accompany us. There will be two ships, a royal barge, and an escort ship.

For years, I have dreamed of discovering the south. No hesitation.

– I would be happy to accompany you, Father.

– Wouldn't you prefer to take time to think?

– I am sure of myself.

– Well, if that's truly your choice, we will leave in a few days, after preparing for the journey. We will make several stops to load supplies and meet the Nome-governors. I have important messages to deliver to them

from Pharaoh. You should also know that we will sail as fast as possible to the extreme south. That's where the main part of my mission will take place. You need to prepare your personal belongings quickly, two or three chests at most. One final detail, I intend to entrust you with an important task. It will be your responsibility to prepare and write the report of our journey, which I will present to Pharaoh upon our return. Of course, Thoti will assist you. You can discuss with him about the writing materials and everything else you need for work.

~

## PRINCES AND PRIESTS

### TWO FOR ETERNITY

#### **back to the source.**

stops.

*Immersion: I am Senout, port of Memphis, year 2529 BC, Chemou, harvest season, early second month, April fifteenth, duration of the experience: 1 hour 40 minutes.*

Large, flat barges for transporting materials from the quarries are moored at the large west dock facing the entrance canal. All sorts of smaller vessels are lined up along the secondary basins on the north and south sides, barges towed by tugs, medium and small trading boats. The King's Basin: that's where warships, high-ranking administrative vessels, and royal barges with their escort ships are moored. The boat assigned to us measures about forty cubits long by sixteen wide. With its shallow draft, oars, and sails, it is manoeuvrable. The escort ship is already prepared at its side; surely, we will depart at dawn tomorrow. We have been waiting for the north wind for several days, and according to the harbor master, it should arrive tomorrow.

*Up the Nile, April sixteenth.*

Headed to Abydos. We cast off the moorings. The ropes are coiled and stowed on the edges of the boat. We row along the main canal, passing by the temple of Ptah. The small boats moving in the opposite direction prudently move aside as we pass, to stay out of reach of the long wooden oars. Rowers on both the port and starboard sides are active; there are about a dozen on each side. As we reach the Nile, the helmsmen skillfully maneuver the two large stern oars that serve as the rudder, and we quickly reach the middle of the river. The pace quickens to the muffled and regular beat of the wide, flat drum struck by the crew master; the six-cubit oars sink deep, push the water, and rise again. The muscles of the men swell with effort, and their bare and powerful chests soon become covered in sweat. We raise the sails; the wind is there to take over from the rowers. The bow cuts through the water faster and faster, and behind us, the royal city quickly becomes smaller.

*April twenty-first.*

We have been sailing for several days now. Every evening, we stop near a hamlet to replenish our supplies of fruits, vegetables, and wheat cakes. The peasants also try to sell us local fermented drinks made from figs or dates, sometimes local wines and beers that satisfy the crews. My father and Thoti prefer to open one of the jars from the cargo destined for the south; the quality is better. In the poorest villages, they also offer us some handicrafts, baskets made of woven reeds, often clumsily decorated pottery, small toys, black amulets made from clay mixed with ash. I spend most of my time observing all the life around the river, the life of the peasants on land, and the life of the sailors on the river. They all seem to know each other and greet each other when two boats cross paths. I'm starting to understand the maneuvers, how to best combine oars and sails, how to avoid sandbanks. In difficult passages, the sailors sound the depth with a heavy stone attached to a rope to ensure we don't run aground. The strips of cultivable land gradually narrow on both banks. In some places, they give way to arid stretches of rocks and sand. Sometimes, we come across marshy areas inhabited by hippos, crocodiles, and various species of birds—herons, ibises, geese, ducks. The local fishermen venture there cautiously to retrieve their nets, fearing the reptiles.

*April twenty-ninth.*

Thirteen days have passed since departure! We would have reached Assiout in the mid-afternoon if the wind hadn't weakened. We had to bring down the large square sail on the royal boat and paddle against the current with the strength of our arms. Just before the city, the passage is narrow because the middle of the river is occupied by elongated islands. When a loaded barge travels downstream, nothing can stop it, and there is no room for two. So, as a precaution, the captain decided to wait until the next day. The smaller escort ship approaches the shore first. Here, there is no dock, no village. We carefully navigate towards the makeshift bank, and our boat aligns with the other ship. We will spend the night here.

*April thirtieth.*

Assiout-Lycopolis is in sight. Cultivated lands extend from both banks over a hundred arouras. The plain appears vast and fertile, and many fields have already been harvested. On the threshing floors, donkeys and oxen are at work; they tirelessly turn around, trampling the grains. The governor of the

Sycamore's Nome welcomes us near the pontoon. He was waiting for us and claims to be particularly honored by our visit. The captain would have preferred to continue since the wind is favorable, but it is difficult to decline the invitation. We will make just a brief stop for the night. The escort ship is anchored by the riverside, alongside the royal boat itself moored to the pontoon.

*End of the second month of Chemou, May seventh.*

We dock at Thinis. Thoti talked a lot about this city when he was teaching me the history of Egypt. Before Pharaoh Djoser, long before the north and south became one, this city was part of one of the three southern kingdoms that spread across the loop formed by the river towards the east. In this semicircle where Thebes is located today, there was the kingdom of Abydos to the north, the kingdom of Noubt in the center, and the kingdom of Nekhen to the south, at the exit of the loop. Further upstream, you reach Edfu and then Aswan at the first cataracts. From the loop, paths also lead to the Red Sea. Two days' journey away, there is a port through which Sinai's copper and turquoise ores are transported. Tozar came this way. Ancient manuscripts claim that there were early and extensive relations with Mesopotamia, where he was born. Despite this prestigious past, the city of Thinis seems small compared to Memphis. What doesn't change is the excellent hospitality. I'm starting to understand my father's true importance. Each of the encountered nomarchs engages in lengthy conversations with him and receives us with the utmost respect. We will stay for two nights, which will allow us to visit the necropolis near Abydos tomorrow.

*Next May 8th.*

We walked for a long time until we reached a vast expanse of sand. Here everything is humble, nothing like the grand plateau of the dead that dominates Memphis, its sphinx, and its proud pyramids, no village of artisans and workers. The place is deserted, piles of stones, mudbrick mastabas, some more significant with steps. My expression betrayed my astonishment. It's one thing to see plans, underground chambers, and imagine substantial monuments above them, it's another to be confronted with reality.

My father :

– I Are you wondering ? It was just the beginning, a time when the kings of Egypt were not so powerful. Everything must have a beginning. You can



see that there is no overall plan. Our ancestors began to bury their dead in this place indiscriminately, the rich with the poor. But it is here that we started to honor Anubis, the Jackal god, as the god of the dead.

As we advance, a morbid spectacle appears between two tumuli: human remains exposed directly on the sand, uncovered by the wind; the skin is tanned and dried, the flesh reduced and adhering to the skeleton, with tendons visible in some places. The man is curled up facing the east. He will never know rest; according to the priests, the jackal god will come to steal his soul. I react :

– I He wasn't mummified, just laid there !

– I Yes, at that time, people contented themselves with digging a hole in the ground as a tomb. Sand, some clumsily stacked stones. They were probably retrieved for other burials, and then the wind did its work; it wasn't unearthed by wild animals. Furthermore, this body must have been buried here a long time ago, certainly long before embalming was practiced. Looking at it like this, one could imagine that he could come back, that he is not completely dead. In general, you can notice that most of the tombs are humble, testimonies of the timid and modest efforts at the beginning of the cult of the dead. It is the same with all human endeavors; at the beginning, you must believe in it, not get discouraged. If your thought is good, it will strengthen, structure itself, enrich itself; others will come after you to build on the foundations you have laid.

We continue our way through the field of the dead. Among the tombs of dignitaries, mudbrick and stone mastabas, one stands out clearly from the others. I approach and decipher the inscriptions. This would be the tomb of Osiris. According to the priests of Heliopolis, Atum, the solar creator, emerged from the Nun, the primordial ocean, the waters of the Nile; he then expelled the water from his breath to make a first mound of earth, the silt of the river, from which life emerged. Subsequently, with his own secretions, he begot Shu, the god of the sun and air, and the goddess Tefnut. From their union, all the other gods were born. Geb, the god of the earth, begot the male Osiris and his sister Isis; from Nut, the sky goddess, were born the male Seth and his sister Nephthys.

Osiris received the kingship over Egypt, while his dog-headed brother Seth had nothing but the desert as an inheritance. In addition, Osiris married

his sister Isis, while Seth united with Nephthys. Discontent with his fate, Seth laid a trap for Osiris; after the fatal banquet, he ordered his brother's body to be thrown into the Nile. Later, when Isis managed to find him, Seth decided to have the body cut up and then scatter the pieces throughout Egypt. A complicated story, but with a happy ending! Anubis, the illegitimate son of Osiris and Nephthys, was saved from Seth's wrath by Isis. After helping his adoptive mother reassemble Osiris' body, he became the Jackal god who still reigns over the realm of the dead today; he has the power to bring forth the breath of life. On their part, the pharaohs, descendants of Isis and Osiris, were able to reclaim the kingdom of Egypt from Seth.

*End of the second month of Shemu, May 13th, Occidental calendar, 2529 BC, mid-afternoon.*

This is our last stop before reaching Thebes-Waset. Tomorrow or the day after, we will be there at the latest. The sail has just been folded, and the rowers are bringing the boat closer to the shore on the sunset side. The water is deep enough. We dock against a rock formation. The captain gives orders. Two sailors jump ashore and moor the ship with a sturdy rope. We then disembark, the captain, the master of the crew, Thoth, my father, and me. Just behind the rocks, a hamlet appears, consisting of about ten small houses and two small grain silos. The soil here is very poor. Some donkeys are so busy eating their fodder that they don't even pay attention to us; a dozing dog wakes up and starts barking. The villagers come to meet us, worried; they have recognized the royal boat, and this prestigious type of ship never makes a stop here. Our captain reassures them and orders for a jar of beer to be brought, along with some small presents. The crews will eat and sleep ashore; they need to regain their strength to make a good impression tomorrow, upon arrival in Thebes.

*Evening.*

The villagers have prepared a snack. They have arranged baskets of fruits, stacks of spelt cakes and barley bread, and dried meat placed on spread palm leaves on wicker tables. We bring out beer and wine taken from our cargo. Once satiated, the crew falls asleep on mats placed outside on the ground. It is very hot. My father, Thoth, and I climb back onto the royal boat to enjoy the river breeze, the calmness, and the silence.

*Next morning, May fourteenth.*

I wake up to the crowing of the rooster. Thoti is already lost in his thoughts; he gazes at an islet in the middle of the river, made of sand and a large, cracked rock with clinging bushes. On each side, there are small sycamore and acacia trees, nothing extraordinary at first glance. Thoti explains to me:

For the people here, it's the first mound, where creation took place. During the flood, only the top of the sycamore tree emerges from the water.

– But didn't we already see it, between Assiut and Abydos ?

Thoti looks at me with an amused and mischievous expression.

– Like with Osiris' tomb, it's not where the first mound is located that matters, but rather what it represents. Each section of the river has its own islet of creation, just as each high priest has their own truth. The essential thing is that there was a single creator, a unique God who is the origin of all life on Earth. In an instant, everything began, all the life forms you know around you appeared from the depths of the Nun the primordial watery abyss, all species, plants, and animals. Each islet devastated by the flood of the Nile and then resurrected the following year bears witness to this. It recalls creation, marking the alternation between death and life.

I learned this wonderful story of creation from the mouth of the scribes, the receding flood, the emerging sandbank, the timidly appearing papyrus clumps, the shapeless mud of the river that can be molded into animal forms, the creatures of the waters like catfish or crocodiles, the bellies on legs, birds and snakes, gazelles and baboons, bees and scarabs. The potters can do that, but no matter how precise and similar, they are unable to breathe life into them, to give them a soul. Only Atum and Ptah are capable of that, and for this gift of life, they must be honored. It is indeed from the Nile, from its rich and black silt soaked in water, that cereals germinate, fruit-bearing trees, and vegetables. Everything has been provided for humankind.

When I asked Thoti naively as a young girl why the crocodile and the lion were dangerous to him, why a hyena was dangerous to a young antelope, he would reply that there surely was a good reason for it, even if humans

couldn't understand it. Evil had always been there; it was Seth's curse! Nevertheless, I had to thank the gods for their blessings, for the breath of life they had put into everything that moved around me, for the creating and nourishing river, for the sun that rises every morning. To do that, I had to honor all these creations of Atum.

*I am Joy, just Joy, outside of immersion.*

The legends about the creation of the world, the idea of a single great clockmaker, a reductionist thought! Aten, the unique God that the Egyptian people will refuse! The breath of the Christian God who suddenly creates all things, the earth, plants, animals, and humans, that is indeed the breath of Atum. Evil on earth from the beginning of creation, the obsession with unexplainable evil, the misfortunes and woes that befall the innocent, it is Seth's curse. A cause must be found, a responsible one, an original sin that humans never actually committed. This will be the beginning of humanity's guilt, the promise of redemption in another world, the revival of the Egyptian concept of life after death, the utopia of paradise. The unique God of the Jews and Christians, a mystification that Rome, heir to Greece and Carthage, will initially reject wisely before intolerant Christianity destroys and forcefully erases all other beliefs!

## **Ouaset**

*I am Senout, Thebes-Ouaset, Chemou, the month of May, the fourteenth day of the year 2529 BC, early afternoon.*

The escort ship has remained behind. The royal barge maneuvers to position itself facing the city. It comes to a stop. This time, Pharaoh's pennant is raised at the very top of the mast. From the port, the prow of the ship adorned with the god Horus should be clearly visible. A delegation of high officials from the fourth Nome of Upper Egypt, led by the governor himself, arrives at the dock. This is the moment the captain was waiting for to give the order to maneuver. The rowers get back to work, the ship pivots, slowly approaches, and docks flawlessly. My father comes out of the cabin. It is rare to see him dressed like this, as a high dignitary. On his finely woven white linen tunic, he wears a superb pectoral decoration consisting of rows of turquoise squares separated by ivory beads adorned with gold. In his hand, he holds a staff decorated with the goddess Isis and her solar headdress.

*Evening, the governor's palace.*

The governor has invited us to a grand banquet. A variety of exquisite dishes is offered to us, roasted birds, trays of delicacies, rare wines from Palestine and Syria. I am amazed by such luxury; I have only seen it at the royal court. The women seem to want to compete in elegance. Almost better coiffed than the king's courtesans, they wear colorful dresses that shine in the torchlight. They are made of tightly woven gold thread with linen. The jewelry is not lacking either, bracelets on their arms, wrists, and ankles, often made of gold or silver, necklaces, belts. On their painted faces, the area around the eyes is carefully outlined with green malachite, while the lips and cheeks are colored with carmine pink extracted from kermes cochineal insects. Luckily, I brought one of the dresses I wear when I go to the royal court in Memphis. Made of white linen and covered with a mesh of beads, real ones made of Red Sea mother-of-pearl, alternated with carnelian, it makes a great impression. I am observed with evident admiration, which makes me a little uncomfortable.

The lower clergy is not invited, but the high priest Baou is here, an ambiguous character, ugly and corpulent. When he is silent, his mouth is open, and when he speaks, stuttering, one of his ears seems to listen to his interlocutor while the other listens to what is happening elsewhere. He always avoids looking directly at his interlocutor. His small, cruel-looking black eyes constantly shift from right to left. For now, he seeks to attract my father's attention, who, obviously, pretends not to see him. Pharaoh's emissary clearly prefers the company of the nomarch and high officials.

Disappointed, Baou approaches me and starts talking to me. I can't escape. He explains to me as if I were ignorant that here in Thebes, they particularly honor Amun, the god of the wind. He is the protector of boatmen and the guarantor of Thebes' power, the power that the river provides. In my father's illustrated list of the great temples of Egypt, I saw the one in Thebes with the god in his blue Naos and ram-headed form. Baou also reminds me of how Amun was created by Thoth with the seven other primordial deities of creation. He mentions Mout, his wife, as well as their son Khonsu, the God of the moon.

Phew, finally, he moves away! He tries his luck again with my father and apparently succeeds because now they are talking privately. Meanwhile, I join the group of women gathered around the governor's wife. They chat and relay every little piece of gossip or rumor, hoping I will give them information about the Queen's court. I quickly get bored; I have nothing to tell them.

*Next morning.*

I'm really treated like a princess. The rumor has spread, I don't know why, that I would be the queen's confidante, which of course is false. The apartment assigned to me is nothing short of the most beautiful interiors of Memphis. Columns of green earthenware shaped like palm trees frame the painted mats covering the walls. The furniture decoration is exquisite, ebony and ivory are everywhere. In the bedroom, there are several bronze mirrors and even one made of polished silver, a makeup palette made of green stone decorated with fish and dragonflies, a whole set of small pots made of different colored stones, rose quartz for rouge, green malachite for the powder of the same stone, alabaster for the resin cream to be applied under the arms; others contain perfumes and beauty creams. Ranep recognizes one of these mixtures made from shea, a plant that is found where she was born.

*Afternoon.*

My father has locked himself in for meetings with the governor and administrative officials. Thoti is also part of it. I take the opportunity to visit the city with Ranep and an officer who serves as my guide and protection. Two enlisted men follow behind us. We arrive at the port. From our escort ship, jars, bags, and crates are being unloaded, wines and spirits from the delta, natron from the oases further north. Other crates bear the seal of the arms factory in Memphis. The unloading is done under good guard, that of Nubians who form a large contingent here in Thebes. Farther away, from another ship coming from the south, all sorts of different goods are also being unloaded.

I catch sight of bundles of lion and leopard skins, bundles of henna leaves, ebony beads, ostrich feathers, elephant tusks, sacks of resinous seeds from the south, also live animals, among them aggressive baboons held on chains, strange, highly colorful birds with very large beaks. After the port, the temple. We cannot enter, but the officer takes us to a high point from where we can see the impressive complex. The enclosure is still a kind of large fence made of raw earth, but inside the wide stretch of land that extends to the river, I can make out many buildings under construction, with huge blocks of stone next to them. The ongoing expansion testifies to the wealth of the city. Then we head back to the palace, passing through the market; it seems as well-stocked as the grand market in Memphis.

## mission

### Souenet

*I am Senout, Assouan-Souenet, Chemou, May 20th, 2529, BC.*

After three days in Thebes, we resumed our journey. Due to the very low water level of the river, the royal boat and its escort ship must proceed cautiously, avoiding numerous sandbanks and rocky outcrops. The landscape becomes increasingly arid and desolate. The Nile winds its way between stony and sandy hills, where a few tamarisks, palm trees, fig trees, and bushes grow. The fields are becoming scarce. Only small patches of cultivable land can be seen in some places, yielding very little grain. We also pass by cliffs and occasionally see sandstone quarries with large piles of blocks waiting to be loaded. It will only be when the water level of the river has risen sufficiently that they can be lifted onto the barges that will transport them downstream, and that will not happen until Sirius, the Dog Star, reappears in the vast starry sky. Then the flood will come. We have arrived. A string of islets of very different sizes, small or medium, almost completely blocks the river, some covered in vegetation, others consisting of piles of rocks. On the east bank, I see a small town surrounded by a mudbrick wall, with residential quarters, vast empty spaces reserved for markets, and warehouses. No temples are visible, only residences of dignitaries.

Souenet is an outpost of Thebes on the way to Nubia, a border town with a significant garrison, the gateway to all the riches of the south. The only other significant activity is the nearby granite quarry in the city center. But we are not supposed to dock here; we are heading to Yeb-Elephantine, the largest island in front of us, in the middle of the river. It is about a thousand cubits wide and roughly three times longer, large enough to accommodate the grand temple of Khnum and its dependencies, the governor's residence, and the fortress housing a few thousand men.

The island is the key to the gateway to Egypt, an impregnable position. All these structures are embedded in a green setting. I can catch a glimpse of the small opening of the grand temple, where every morning the rising sun illuminates Khnum, the god of Elephantine. Here, the legend of creation is like the ones told in Egypt. Khnum created humans with his potter's wheel using the silt of the river, including the king. The god fertilizes the land by controlling the sources of the Nile; he also oversees the fertilization of women as the god of childbirth. Large rocks form a natural pier. However,

the boat remains at some distance, and a footbridge is quickly set up for us to disembark from the bow. My father signals me; we must descend. The official delegation that welcomes us is smaller than in Thebes: the nomarch, the commander of the Elephantine garrison, the high priest, and a few notables or high-ranking officials. After the customary greetings, we head towards the governor's palace; the porters follow with our luggage. The guest quarters have nothing to do with the prestigious apartments of Thebes, no opulence or luxury, but the view of the Nile is magnificent. After three days of intense activity in Thebes, my father wants to rest. As for me, I will have to write, transcribe everything that has been done and said, even our impressions of each other. Everything is valuable; nothing should be forgotten. I will get to work while the memories are still fresh.

The governor-nomarch is used to travelers arriving from the north being tired, and it suits him. He promises to provide us with everything we need: meals, spare clothes, toiletries. Tomorrow is an important day. The latest Nubian expedition has just returned. There will be a military parade and festivities taking place across the river on the east bank.

*Immersed in the year 2529 BC, I am Senout, from Assuan-Souenet, Chémou, May twenty-first.*

We have just arrived at the parade ground with the governor. It is a newly cleaned esplanade, measuring about one hundred and twenty cubits long and sixty cubits wide. We can still see the traces left by the straw brooms in the sand. The buildings surrounding the square are nothing like those in Memphis or Thebes; they are mostly warehouses and modest dwellings. Here live the quarry workers and the families of the soldiers stationed at the fortress of Yeb. Most of the residents have already gathered on the sides of the square, all the way to the wooden platform where we are going to sit. Many women and children are of Nubian origin since a significant portion of the garrison consists of fighters from the far south.

Everyone is eagerly waiting, but also with a certain uneasiness. The city lives in tune with the campaigns carried out in the distant southern territories, and things don't always go well. Desert warriors, the Bedouins, sometimes cause trouble. They lie in wait for the return of the Egyptians at the gorges. Sometimes there are heavy human losses. Just now, the governor has confided to my father that there will be numerous casualties, dead or wounded, as a result of this latest campaign.

A linen tapestry shields us from the scorching sun. My father and the



governor-nomarch are at the center, flanked on the right by the high priest and the garrison commander, and on the left by Thoti and me. Drumbeats resonate from the north of the city. The troop is drawing closer; they are arriving. The crowd has swelled even more, and now the entire city must be gathered here for the parade.

A first contingent of Nubians appears, leading the procession. Music, drums, and citharas. They all march resolutely behind their leader. What surprises me is that he is black, as dark-skinned as Ranep. At the sight of him, cheers and applause erupt. Thoti whispers in my ear; it's Kemeth, the Black Prince, son of one of Pharaoh's concubines. He is adorned with armor made of burnished leather plates and wears what looks like a large gold lion's head pendant. The two officers accompanying him also wear leopard skins. They are followed by numerous archers. Their leather quivers are filled with arrows, and their round shields made of tanned animal hides are also decorated with a raised lion's head. Altogether, they number in the hundreds. Many have the coppery complexion of the northern Nubians, while others are as dark-skinned as their leader. Among them, I can distinguish a few Egyptian officers. Obviously, this is the prince's elite battalion.

Immediately behind them comes another contingent of soldiers armed with slings, axes, and clubs. The ranks are less disciplined; this is the main body of the troops. Among them are sweaty and poorly dressed porters, currently prisoners but, for many of them, future recruits for upcoming expeditions. They seem resigned to their fate, undoubtedly surprised to still be alive; their physical strength and relative docility have saved them. Some of them carry flat wooden chests suspended on poles. Behind them, donkeys follow, loaded with wicker cages that hold exotic birds with colorful plumage. There are also nets full of ostrich feathers and sturdy baskets filled with large swollen blocks of green malachite. Southern oxen pull sleds, some with cages containing panthers, others loaded with ebony beads and ivory tusks.

On top of the cages, irascible baboons and other smaller species of monkeys are quarreling and screeching. Chained, they constantly struggle, hoping to regain their freedom. I also see delicate small antelopes, led by their necks, different from those found in central and northern Egypt. They will go to embellish the royal or princely gardens. Finally, there are all kinds of strange animals, some covered in scales and coiled up.

Bringing up the rear is a herd of cattle, a sample of the significant livestock brought back, followed by a group of women accompanied by children. They number over a hundred, frightened, scared, poorly dressed, covered in dust,

avoiding eye contact and fleeing glances. They all come from rebellious villages that have been raided, villages that believed they could live without the protection of the King of Kerma or the Egyptians and refused to surrender livestock, grains, and gold nuggets. The youngest and most beautiful among them will be quickly sold and taken north, while others will be distributed to the bravest single warriors. At the sight of them, the crowd cries out even louder; excitement is at its peak.

Finally, to close the procession, a whole group of black warriors armed with spears and adorned with feathered shields arrives in great disorder. They wear various outfits and, even stranger, they have scars on their faces and bodies, not wounds but geometric drawings, scarifications. For the people, it's something new, almost frightening. Their powerful muscles impress the awestruck crowd, which falls silent for a moment.

Never have we seen so many in Souenet, which means that the Black Prince has ventured far south, to the Kingdom of Kush well beyond the third cataract. Compared to them, the few Egyptian officers accompanying them seem as feeble as women.

This time, everyone is in their place; the contingent is complete with its spoils. I look at the crowd; alongside the joyful faces, there are others displaying worry. Some soldiers are missing. The last hope is that the missing companion is only injured and being cared for in Yeb by the priests, but access is restricted. We will have to inquire after the parade ends.

The drumroll has ceased, everyone falls silent and waits. The vanguard has stopped about twenty cubits in front of us. I can't help but admire the staging. In this small outpost on the outskirts of the kingdom, nothing is left to chance for this procession. It oozes intelligence, and the people's emotions are palpable. The Black Prince is their hero, a renowned warlord who spares neither his sweat nor his blood, always ready to risk his life for his Nubian or black soldiers, a faithful among Pharaoh's faithful.

Kemeth steps forward from the front row, approaching with confident, slow steps. His gait is smooth as if gliding on the ground, halfway between that of a man and the stride of a wild beast. The two officers following him stand at his side; one is the commander of the archers, a Nubian, and the other is black, commanding the Kush contingent. A few cubits away, Kemeth greets the governor, placing his right hand on his chest. I notice the terrible scar that slashes his right thigh; it starts from the left knee and disappears under his tunic.

When the Black Prince removes his hand, I distinctly see a clear and

shining metal nugget placed between the fangs of the golden lion. It is the metal of the stars, celestial iron that is occasionally found in the desert. Only princes are allowed to wear it in Egypt. A lion's tail is attached to his belt, a ritual from the Kingdom of Kush. Over there, for a man to be recognized as a true warrior, he must go alone into the bush and hunt a lion, bringing back the trophy. Kemeth wears thick ostrich-skin sandals, their multiple straps reaching mid-calf. I finally notice that one of his leather arm guards still bears brown traces of dried blood. The nomarch stands up and places his hand on Kemeth's shoulder. Clearly, we are far from the court and its protocol.

– Welcome, Kemeth. I see the campaign has been fruitful, albeit challenging," says the governor.

– The spoils are here, Excellency, but it is true that the wounded are numerous.

– You already know Pharaoh's emissary, I presume

Kemeth turns towards us, our gazes meet for a moment, just long enough for me to sense surprise and curiosity, enough for me to immediately reproach myself for looking at him like that. Intrigued, I couldn't control myself, drawn to his assurance, his presence, but also his gaze, yellow-green eyes, a very rare and unsettling color, like that of certain wild animals, crocodiles or big cats. He bows, and my father stands up.

– Black Prince, I am glad to see you again, and to see that your expedition has been successful. You already know Thoti. And the young person accompanying me is my daughter."

This time I am cautious and avoid meeting his gaze. Kemeth greets me, uttering a polite phrase to express his honor. I don't even fully understand what he says and fail to respond. Thoti comes to my rescue and thanks the Prince for his kind words.

At Kemeth's signal, three groups of bearers make their way forward. They come to deposit heavy chests at our feet, which are then opened. They are filled with gold, nuggets, powder, small blocks of rocks taken from gold veins. The crowd applauds. Soon they are closed again, and the governor stands up. We follow him with the precious cargo, leaving Kemeth to his triumph. The crowd will soon mingle with the troops in the parade ground, and the

Black Prince's place awaits. The day before, the nomarch ordered the distribution of grains and beer in abundance, as well as the slaughter of about twenty cattle taken as war booty. Tonight, the celebration will be in full swing.

*Same day, afternoon, Yeb-Elephantine.*

I have just arrived at the temple with Thoti; both of us are dressed very simply. It is in one of the rooms serving as warehouses that the priests tend to the wounded. As soon as we arrive, we realize the seriousness of the situation. Once the bandages are removed, many wounds are purulent; the torn flesh was hastily bandaged, causing infections. Arrows were quickly pulled out, and sometimes the deeply embedded arrowheads could not be extracted. Some bleeding cannot even be contained anymore, and many have broken limbs.

Thoti checks the splints, tightens the bandages, and gives advice on dressing and herbal cauterization. On my part, I tend to a delirious man. He has a serious head injury. The weapon that struck him was probably an axe; it must have slipped at the last moment, saving his life. But now he babbles nonsense, as if he can no longer control himself. However, I feel his life pulsating as I touch his neck and wrist; it's strange because his heart, the seat of his thoughts, was not affected. I ask Thoti what he thinks, but he remains silent.

The entrails serve for ingestion, providing energy to the body. The gray matter in the skull, which is extracted through the nose during the embalming process, is for the eyes, ears, nose, vision, and mouth, or in other words, speech, that's what I have been taught. Perhaps that's the reason, his heart thinks but his speech is unable to follow.

One of the temple priests approaches. He believes that the wound should be opened; he has seen similar cases before, letting the blood flow outwards after opening the fractured skull. He asks for Thoti's opinion, who confirms. They will attempt the operation. I watch.

The injured man is forcefully restrained with leather straps. The priest operates with precision, delicately and forcefully inserting an elongated clamp at the site of the fracture, detaching a small piece of skull bone, and then carefully introducing a cannula. The first attempt fails, nothing comes out. He tries again, and blood begins to ooze. Another priest comes to assist in holding the instrument in place. Meanwhile, Thoti and I tend to other wounded individuals; we apply cauterizations, soothing ointments to bruises,

and check the reduction of fractures. I distribute water and occasionally wine.

It is the first time in my existence that I see so much suffering in one place. There are at least a hundred wounded here, with about twenty in a very serious condition. How many will survive? We are far from Memphis but not from Thebes. Yet, in this city, they live as if war does not exist. Nubia, the southern region as they call it, is synonymous for them with gold and ebony, never with suffering and bloodshed. These merchants who grow rich, these priests, even Pharaoh's entourage, all show insatiable greed, always demanding more wealth without caring about the wounds. The scribes only write about the war to recount heroic deeds. The painters and sculptors depict naval battles in honor of Egypt, where the anguish of a drowning soldier and the pain of a mother losing her child in combat are forgotten.

*I am Senout, from Elephantine, in the month of May, the twenty-second, in the year 2529 BC.*

Last night, my dreams mixed everything together: glory and suffering, the glory of weapons, the suffering of the wounded. Monkeys perched on the head of the great Sphinx of Giza, mocking men. Kemeth fighting against a lion, bitten on the thigh, blood dripping, the tail taken as a trophy. The parade ground with its display, chests of gold, nuggets carried by the Nile from the distant cataracts. A pillaged village with burning huts, Ranep wandering in search of his family, parents, brothers, and sisters.

Thoti has just arrived with good news. The man who underwent surgery not only survived but also seems to be recovering. Surgery, a profession. Yes, it's a profession I would like to pursue, repairing the harm done by men, fixing nature's mistakes. I will think about it later. For now, our presence among the wounded has made a great impression, both on them and on the priests. Thoti tells me that Kemeth is particularly grateful to us.

At the same time, he is observing my reaction. Last night, at the governor's dinner, he didn't miss the opportunity to observe Kemeth and me. We exchanged a few words, and Thoti noticed that I was intimidated. It's true, I felt like a child, and at the same time, I wanted to be a woman. Suddenly, I was ashamed of my small breasts, found my dress too plain with only a turquoise belt as decoration. When the Black Prince looked at me, I immediately felt a sense of turmoil. I didn't pay attention to his injury, his muscles, his skin, or his hair. He was a whole, a whole that pleased me, summed up in the way he looked at me, not with the lecherous gaze of Tozar, but with a pure gaze.

Thoti clearly wants to know more because he starts talking to me about Kemeth:

– Do you know the story of the Black Prince ?

– I know that his mother was at the court, that much I know.

– Yes, it's an old story. The previous king did indeed have a concubine who came from very far in the south, black and of great beauty. It was from their love that Kemeth was born. Pharaoh acknowledged him. That's why he now holds the title of prince. When he became a man, he wanted to explore the country where his mother was born. He went very far, further south than any of Pharaoh's troops had ever gone before. He led a successful campaign, bringing back new troops. His father then appointed him the leader of the Nubian expeditions while his older predecessor was made commander of the garrison at Elephantine.

Kemeth has always wanted to surpass the other Egyptian officers, to show Pharaoh that his origin would not prevent him from being a great soldier. He is famous throughout the army for his courage and bravery. His only flaw, according to his companions, is that he sometimes takes too many risks, although so far it has worked out well for him. But if Thoti is here this morning, it is mainly for us to work on the report. Blank scrolls and writing implements are ready. Let's get to work!

*Immersion: I am Joy, at the governor's residence. The Machine allows me to attend a meeting in ghost mode between my father, Pharaoh's envoy, the nome-governor, and Kemeth, the Black Prince. Meanwhile, Senout is working with Thoti, May 23rd, 2529 BC.*

Menotheop is addressing Kemeth:

– Prince, Pharaoh has great trust in you, and you have never disappointed him. Egypt is currently facing a problem: incursions at the northern borders, desert nomads attacking convoys carrying Sinai's ore. In the south as well, upstream from Elephantine, we are facing similar difficulties. All these actions could eventually jeopardize the kingdom's prosperity. The king, your father, has noticed the great valor of your troops. He is considering tripling the Nubian contingent and based on your advice, extending Egypt's influence over northern Nubia to the border of the kingdom of Kerma.

Kemeth takes his time before responding.

– Great friend of the king, I am honored by the trust placed in me. You have seen for yourself that even here, in the southern outskirts of the kingdom, we are indeed faced with insecurity; bands of raiders regularly disturb the banks of the Nile. For this reason, the last campaign was more challenging than anticipated. However, after reaching the third cataract, I was able to negotiate with the king of Kerma. He would not oppose our pacifying the rebellious tribes, those located between Assuan and the second cataract, the current northern boundary of his kingdom. The objective would be to put an end to the regular attacks on convoys of goods on the river and its banks. It is both in his interest and ours.

– That's commendable, Kemeth, but I've heard that you went further, much further, to the land from which your mother comes.

– That's correct. Once the negotiation was concluded, we traveled back north. Upon reaching the second cataract, instead of immediately returning with the spoils, I left a part of the contingent there to head south, bypassing the kingdom to the east, a very arid region. The arduous journey led me to the fifth cataract, and from there I reached the kingdom of Kush. We stayed for a while at the confluence of the two great rivers with their different colors that abound the Nile with their currents. I learned that it is the one descending from the eastern highlands that commands the bulk of the flood in Egypt. Their king and I have become friends. After you went alone to hunt the lion, I gained their trust; over there, the men are very brave and valiant, less agile in running than the Nubians but stronger and more powerful. He, like his own people, finds the king of Kerma too greedy, and they are willing to negotiate with us.

– What do you mean by that ? Taking control of the kingdom of Kerma?

– It wouldn't be impossible. Many of our Nubian soldiers are originally from there. For them, it would be the prospect of returning home with advantages. Moreover, the kingdom is made up of chieftains who are often rivals. Some of them could very well choose to ally with us. By controlling the country, we would ensure the security of the mines located upstream of Elephantine. I now know where the best gold veins in the kingdom of Kerma are. It represents considerable wealth, enough to satisfy Pharaoh and build a colony upstream of the first cataract. The last argument: even though I negotiated an agreement with him, the king of Kerma doesn't seem trustworthy to me. He sometimes plays a double game with the tribes south

of Assuan and the desert people. There have been instances where he tried to reclaim goods that had already been paid for, to resell them. They will only ally with us out of convenience.

– How do you plan to proceed if Pharaoh supports your ambitions ?

– In the first stage, I think it would be necessary to establish a lasting presence upstream of the first cataract. I'm considering forts occupied by permanent garrisons, temples with priests, Egyptians who would take care of trade.

– I agree with you, Kemeth. We should also gain the trust of the local populations. For that, the behavior of our troops should be impeccable. Let no one take one of their women without their consent, let us trade Egyptian goods for livestock and a right of way to Kush, let us care for their sick and wounded as much as possible, let us educate some of their most intelligent children in Egypt itself.

Menotheop turns to the Nomarch:

– The amount of goods passing through Assuan-Souenet would increase significantly. Eventually, with another province further south, the Nome of the bow would gain in security. It would quickly become more populated and wealthier. I know we can count on you. Is it still too early to talk to the priests about our plans?

– Great architect, you can rely on my discretion. The priests would indeed frown upon pushing back the sources of the Nile. In the eyes of the people, it is here that the benevolent water appears. Expanding the country to the south would mean acknowledging that its sources are located much further upstream than here. I know stubborn high priests who would view these innovations unfavorably; they would consider them heretical unless, of course, they were showered with gold. But whatever Pharaoh's decision may be, of course, I will comply.

– Since the three of us agree, we must start writing immediately. Kemeth, you have gone further than any of our leaders. If, unfortunately, you were to disappear, all this knowledge would be lost with you in your tomb. I do not want to return empty-handed. Everything must be documented. You will need to describe in detail the forces of the Kingdom of Kerma, mark the location of new mines, explain your fortification plans, specify the new settlements, compile a list of local riches, evaluate the populations, village by village, if possible, specify the number of men who could enter Pharaoh's



service, indicate the nomads' infiltration routes, the difficulties, and the travel times from post to post. You can do this work with Thoti and my daughter, who will put it into writing.

Kemeth cannot hide his surprise.

– Senout, your daughter ?

– Does that surprise you ? Know that she is not one of those frivolous women who live at court. While you went off to the army, she chose the path of knowledge. But I also want her to understand that the kingdom would not exist without strength, even though sometimes I myself regret it. By tending to the wounded, she has witnessed the magnitude of sacrifice. For everyone, from Thebes to Heliopolis, to live in peace, it is necessary for others to fight at the kingdom's borders. Your experience will instruct her. She will broaden her knowledge. You have about ten days. After that, I will have to return to the north. During this time, I will visit the quarries and order materials. I also plan to go to the islands, visit the temples, and talk to the priests. If you wish, you can accompany us.

Tonight, my dreams mixed everything together, glory and suffering, the glory of weapons, the suffering of the wounded, monkeys perched on the head of the Great Sphinx of Giza, mocking the men, Kemeth fighting a lion and getting bitten on the thigh, blood trickling down, the tail taken as a trophy, the parade ground with the display, the chests of gold, nuggets carried by the Nile around the most distant cataracts, a pillaged village with burning huts, Ranep wandering in search of his family, parents, brothers, and sisters.

Thoti has just arrived with good news. The man who was operated on not only survived but also seems to be recovering. A profession, surgery, yes, a profession I would like to pursue, repairing the harm done by men, correcting nature's mistakes. I will think about it later; for now, our presence with the wounded has made a great impression, both on them and on the priests. Thoti tells me that Kemeth is particularly grateful to us. At the same time, he watches my reaction. Last night, at the governor's dinner, he did not miss observing Kemeth and me. We exchanged a few words, and Thoti noticed well that I was intimidated. It's true that I felt like a child and at the same time, I wanted to be a woman. Suddenly, I was ashamed of my too-small breasts, found my dress too plain with only a turquoise belt as decoration.

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– Do you know the story of the Black Prince ?

– His mother was at court, that much I know.

– Yes, it's an old story. The previous king indeed had a concubine who came from very far in the south, a black woman of great beauty. Kemeth was born from their love. Pharaoh recognized him. That's why he holds the title of prince today. When he became a man, he wanted to see the country where his mother was born. He went very far, further south than any troops of Pharaoh had ever gone before. He led a successful campaign, brought back new troops. His father then appointed him chief of the Nubian expeditions while his predecessor, who was older, was appointed commander of the Elephantine garrison. Kemeth has always wanted to outdo the other Egyptian officers, show Pharaoh that his origin would not prevent him from being a great soldier. He is famous throughout the army for his courage and valor. His only flaw, according to his comrades, is that he sometimes takes too many risks, although, until now, it has worked out well for him.

But if Thoti is here this morning, it is primarily for us to work on the report. Blank scrolls and writing utensils are ready. Let's get to work!

Immersion: I am Joy, the governor's residence. The Machine allows me to witness a meeting between my father, Pharaoh's envoy, the nomarch-governor, and the Black Prince Kemeth in ghost mode. Meanwhile, Senout is working with Thoti. May 23, 2529, BC.

Menotheop is addressing Kemeth:

– Prince, Pharaoh has great confidence in you, and you have never disappointed him. Egypt currently faces a problem, incursions at the northern borders, desert nomads attacking convoys carrying Sinai's ore; in the south as well, upstream of Elephantine, we are faced with the same difficulties. All these actions could eventually jeopardize the kingdom's prosperity. Your father, the king, has noticed the great valor of your troops; he is considering

tripling the Nubian contingent and based on your advice, extending Egypt's influence over the northern Nubia up to the boundary of the Kingdom of Kerma.

## **first cataract**

*Immersion: deep-diving mode, I am Senout, Elephantine, May 28th, 2529, BC, Western calendar.*

We have been working on the expedition report with Thoti and Kemeth for several days now. Thoti narrates, I transcribe. By Kemeth's side, I discover a different life, different horizons. It's difficult to describe what I feel for him; I simply feel good in his presence. I met him only a few days ago, but it feels like I've always known him, like he is me and I am him. When I confide in Ranep, she gently mocks me, comparing his broad and powerful chest to my wasp-like waist. What kind of children would I have with him? Whenever Thoti steps away to attend to the wounded or discuss matters with the temple scribes, Kemeth changes. He jokes and finds ways to compliment me.

*A break in my scribe work.*

This morning, I accompanied my father to the quarries, the ones located on the outskirts of the city, across the river, where they extract red granite. I witnessed how the quarrymen cut huge blocks of raw rock. They first look for natural fracture lines, which they transform into grooves using hammered copper chisels or sometimes diorite. Then, they skillfully strike inside with mallets and picks or drive in wooden wedges with mallets. They wet the wooden pieces, causing them to expand and the rock to yield. Once cut, the blocks are transported raw to the dock, awaiting shipment north. For now, just like the sandstone quarries between Souenet and Ouaset, we have to wait and store, as the water levels are too low to load the massive granite blocks.

*May twenty-ninth.*

Today, my father plans to inspect the Nilometers, both the one in Yeb and the one in Sehel, the last major island upstream. Further up, the river narrows significantly to pass through a narrow gorge. For many inhabitants of the kingdom, this is where the sacred source of the Nile is located. When the flood comes, the waters pour out with thunderous roars, torrents that seem

to come out of a gigantic jar. The priests of the two major temples in Yeb and Sehel consider themselves the guardians of the source, and offerings abound because of this belief. Of course, being on-site, they know that the river continues further, even though not all of them are aware of the many other cataracts, three up to Kerma, and two more before reaching the place where the Nile splits in two. I understood that Kemeth also distrusts the priests. He doesn't like them, except when they tend to the wounded. After the expeditions, they come snooping around in hopes of taking a share of the loot. They all hope to join Thebes and, for that purpose, inform the high priest Baou about the magnitude of the spoils brought back by each expedition. As for the high priest of Yeb, he seems to get along well with my father. In Memphis, I couldn't visit the temple of Ptah, but here, he allows me to enter the sacred enclosure.

#### *Visit.*

Like all high-ranking clergy of the Nome, the high priest wears a leopard skin over his linen tunic. As for me, I have hidden my hair under a wig that Ranep provided me with, and I'm wearing a white linen dress that flattens my figure. Kemeth gives me an amused look! In the first courtyard, a large male baboon is sitting on a limestone block in the shade of the peristyle, busy gnawing on fruits. At first, he glares at us viciously, baring his fangs, considering us intruders, but then he calms down upon seeing the high priest. We traverse the different spaces. In the chambers, there are numerous offerings, fish, jugs of beer and wine. The last room is dark, but the light coming from the skylight is sufficient for me to admire the god Khnoum seated in his pink granite shrine. We exit at the level of the second-to-last inner courtyard; a narrow tunnel carved into the rock provides access to the staircase descending into the Nile; the Nilometer is engraved on the side wall that borders it. The scribe responsible for noting the river's level throughout the year to track the flood and receding has joined us; he explains the meaning of the various marks engraved on the stone. My father requests a copy of the detailed transcriptions for the past three years; currently, they are missing from the archives of Memphis. The priest of Khnoum assures that it will be done as soon as possible; he gives instructions to his scribe accordingly.

#### *Continuation of the inspection.*

When we arrive at Sehel Island, the sun is already high in the sky and the

heat is stifling. Here too, the people honor the god of the river and at the same time the goddess of the wind, just like in Thebes. According to the priest in charge of the place, this temple is much older than the one in Yeb. However, it is evident that they have fewer resources here; even though he is dressed as well as his colleague, the surroundings are less decorated.

We inspect the Nilometer and my father gives the same instructions as in Yeb. The priest also tells us about the very old sanctuary dedicated to Oradjet that can be seen from here on a hill on the east bank. According to him, it is even older. He explains that from up there, one can enjoy an exceptional panoramic view of the Nile, both to the north and to the south. He no longer goes there himself; it is too steep and dangerous. However, sometimes he sends a young priest to leave some offerings. Kemeth proposes to accompany me there, and my father agrees. Neither he nor Thoti can climb the hill. They will stay at the temple and take care of the measurements.

We borrowed a papyrus boat to reach the right bank. From there, a path leads up to the summit, which is indeed narrow, steep, and dangerous. Several times, rocks roll under my feet and Kemeth has to catch me by the arm. The priest was right; even with the help of their acacia canes, it would have been perilous for both Thoti and my father.

Once we reach the top, the view is truly magnificent. To the east, the vastness of the desert stretches all the way to the great Red Sea, and to the west, there are sand dunes as far as the eye can see. In the middle of the river, we can see the rapids with the guardian islands of the sources, and downstream, in the distance, the heat haze manages to blur everything with the sky, the loops of the Nile, the sandbanks, and the banks. Finally, upstream, the gorge narrows until it disappears into the depths of the mountain.

As for the small sanctuary, it is the beginning of a peristyle leading to a single clumsily covered chamber. The rough assembly of the stone blocks testifies to the antiquity of the place. On the offering table, a few fruits are placed in a container made of woven herbs. Kemeth tells me the legend of the wise man of the springs.

– This sanctuary existed long before the ones on the river islands. The legend claims that it was a sage from Abydos who created it, a priest in search of the source of the Nile. He stopped here. People came to see him from Thebes because he was better than anyone at predicting the arrival of the waters. By observing the stars, he had noticed the coincidence between the

flood and the reappearance of the Dog Star, Sirius; to him, it was clearly a divine warning. He could have counted the moons just as well; it wouldn't have changed anything. Regardless, this predictive ability had a strong impression on the population. That's when this little temple was built, with the intention of invoking the forces of the river, praying to the god Hapy so that he would not hold back the waters for too long and trigger the great outpouring from the rocky bowels of the cataract. Later, when the fortress of Elephantine and the temples on the river islands were built, the old sage found himself marginalized. In his old age, he was too weak to descend; completely forgotten, the legend says he was fed by a falcon.

– What happened when he died ?

– The legend doesn't say anything about that, except that the same bird would have carried his Ka to the sky.

– Your story is sad.

– He was a priest. He locked himself in his thoughts, isolating himself from the world. There was nothing forcing him to live as a hermit; he could have stayed in Thebes with the others. He chose to forget about men and only think about the gods.

– But he didn't even have a burial. Kemeth takes my hand. I feel a wave of pleasure flowing through my entire body. He points to the north.

– Don't think about that, tell me instead how you live in Memphis, what you do at the court.

– You know, I rarely go there.

– That's where I spent my early years, before you, of course, but I didn't learn to juggle with numbers like you did. Thoti claims you can calculate the exact number of blocks needed to build a pyramid, that you know the origins of sacred numbers.

– He's exaggerating. Anyway, everything I know will probably be of no use. I can never replace my father. I am a woman.

– You know a lot of things, but the desert dunes, the stars, or even the grains of sand, can you count them ?

– They are countless. I understand what you're trying to tell me. Despite all his efforts, man can never fully understand the entirety of creation, is that right?

– Yes, and that's why we must not forget to live. Before reaching the great south, I must cross immense unknown areas. If I started counting all the obstacles, I would quickly be discouraged. What I'm trying to tell you is that you could have learned, of course, but at the same time, you could have

enjoyed life at the court.

I don't reply. He looks at me, amused. I still don't know how old he is, 25 to 28 years old? I would like to ask him if he has any marriage plans, but I dare not. Ranep inquired and claims there are none. He continues.

– You know, now my mother lives in Thebes, my life is here, in the south and there. He points southward with his hand, towards Nubia. He continues.

– The land of gold but also of dust and thirst. A land where no one has yet begun to write, where knowledge is still transmitted from father to son through spoken words. Do you truly believe that writing is a gift from the gods, a gift from Thoth, the one who gave his name to Thoti?

– I don't know, but with the ear, a man can hear what he wants, with his mouth, he can say things he doesn't truly mean. Thus, nothing is ever certain. When things are written, it's harder to distort or betray them. Writing allows men to establish the truth. What is written can be verified, the spoken word is transcribed on papyrus or engraved in stone. What has been agreed upon or promised among men can be recalled. An arrangement is more difficult to challenge.

– He released my hand.

– But if you're not going to live at the court of Memphis, what do you plan to do? There are rumors in Thebes that the queen has plans for you. Are you going to get married?

– He dared to ask the question but, seeing my distress, he immediately apologizes.

– I shouldn't have asked you that question, forgive me<;

### **such a short happiness.**

Source of life.

*Immersion: I am Senout, Yeb-Elephantine, reception at the nomarch's, on the thirtieth of May, in the year 2529 BC, time of experience: 1 hour 54 minutes.*

Only close personalities of the governor are invited, including Kemeth, of course. I asked Ranep to help me prepare. She styled my hair like a princess. After smoothing my long hair, she coated them with a scented cream before braiding them; at the end of each strand, she attached a carnelian bead, then

she adorned the whole with a net embellished with gold beads. I applied makeup in front of the polished silver mirror, with my eyelids highlighted with antimony. I also put on the same dress as in Thebes and laced up delicate goat leather sandals up to two inches above the ankles. Kemeth, on the other hand, is dressed very simply; his attire doesn't reveal his profession as a soldier in any way.

The meal is finished. The nomarch and my father are talking together; I imagine they are finalizing the last steps of the mission. For the governor, the chief architect is of prime importance. The opinion he will have of him is essential for the continuation of his career, considering the kingdom's expansion projects to the south. On his side, Thoti is talking with the high priest. All four of them are inside. I go out onto the terrace overlooking the river, and Kemeth soon joins me. We lean on the balustrade.

– Thoti thinks the work will be finished soon, in one or two more days. After that, when your father has reviewed it, his mission will be complete. He told me he finished selecting the stones. You will be leaving.

– I expected it. There are only a few technical points left to verify. The main papyrus is already stored in a small box, and Thothi will make a copy once we're back in Memphis for the palace archives. I dreaded this moment. I don't want to leave him. I want him to know that I am not promised to anyone. He brings up the subject again.

– You haven't answered me about your marriage, are you keeping the men waiting ?"

– I tease him.

– You yourself, they say you keep your mother waiting ; yet, there are many fine suitors in Thebes who are interested in you." I feel my woman's heart beating in my chest, I fear the answer, but I must know too.

– I haven't found the time, with the campaigns. I don't think I would enjoy myself in Thebes. My life is here and, in the South, far from the splendors of cities. When I go on a campaign, my life is that of a soldier. What woman would take the risk of seeing me perish in battle one day? What woman would accept her husband leaving for distant lands for such long periods of time?" He places his hand on mine. It feels as good as the first time.

– Senout, would you like to come with me to the river tomorrow ?

– To the river ?

– If you're not afraid of the creatures of the Nile? I understood that Thothi must go to Assuan, and your father plans to spend the day in Yeb, examining



the temple's embellishment and fort's expansion projects. Can you swim?

– I simply nod, no need to tell him that I could cross the Nile even downstream from Thebes.

– I know a place where no one goes. At this time of year, there's no danger, the river is at its lowest. Will you come ?

– Yes, I will.

*Next morning.*

Kemeth pulled the small papyrus boat onto the sand. He leaned it against one of the large granite rocks that lined the small beach; their flat, dark faces appeared to have been cut by a giant chisel before being polished. Only clumps of tamarisk and a palm tree managed to grow between the stone blocks. When we arrived, the disturbed white ibises flew away to settle farther away, and only a gray heron with gray plumage remained. I just set down the basket that Ranep prepared for me, with honey cakes, some fruits, and a small jar of beer. Kemeth buried it in the damp sand to keep it cool. Everything is calm; there are no dangerous whirlpools like at the beginning of the flood. From where we are, we can only see the top of the Yeb temple structure; across from us, the hills are uninhabited.

Kemeth took off his tunic. He is now wearing only a loincloth around his hips and tries to hide his scar, which looks even more terrible. It runs along his muscular left thigh, reaching up to the pelvic bone. It's as if an animal had tried to reach his belly to rip out his entrails. He enters the water without looking back. I take off my dress and follow him.

The water is warm, and we start swimming. Kemeth moves quickly and confidently, turning and swimming back and forth, but I swim so well that he can't outdistance me. Outside, the sun is scorching, and we often must dive our heads into the water. Kemeth has just stopped at a spot where we can touch the bottom. Our bodies are visible through the water. He approaches me and holds me tightly, the magic of these first moments. Overwhelmed with happiness, I don't push him away. In these first stirrings, there is nothing to think about, nothing to say, just forget everything and savor the joy of being together. I let him lead. "You are beautiful, Senout. You are the one I had stopped expecting."

We return to the beach. Kemeth admires my shoulders, my small breasts, and the slender waist of my fifteen years. He caresses my skin, which he finds softer than in his most beautiful dreams. And so, I surrender. Our bodies come together tenderly and delicately until the animal force takes over, a

sacred moment that I probably won't want to think about again for fear of distorting it. Fulfilled, I find myself lost in a world of sensations I had never imagined. Perhaps, like every woman, I desired and feared it at the same time. Maybe until now it was just words, dreams I exchanged with Ranep, "I will go to the stars far away and forget the Earth."

We lie side by side on the beach. Kemeth takes dry sand in his hand and lets it trickle slowly. The pile grows little by little.

– Do you know this?

– No.

– It's a game, the game of sand piles. I used to play it as a child. You must try to make the tallest pile without it collapsing. After a while, you must be very careful and skillful because even the tiniest additional grain of sand can make it all crumble, leading to a catastrophe. You must watch closely as the pile rearranges itself. With practice, you can predict what will happen. One day, I'll show you how to win every time.

– But that's just a game. I know how to use sand in a useful way; did you know that by watching water or sand flow from a hole in the bottom of a vessel, you can measure the passing time?

We change the subject, talking and talking again, about him, about me, and about him again. He asks me if I could live here in the south, what my father, the great architect, would think, what the queen and the king would think. I understand what he is asking, to become his wife. I think of my mother, whom I have never known, and my father.

### *Following days.*

Since that day, I haven't stopped thinking about him, in the morning when I wake up, at night when I go to bed. Ranep understood right away. I would hum in the morning, take more care of my appearance, and I was even absent-minded, which was quite unusual. Thoti had to remind me of my task several times. However, there were only a few additional details left to finalize the report. At first, he thought I was sick, but then he also understood.

We went back to the river several times. We renewed our games, our frolics, with less and less reserve. Only a natural modesty led us to remove our loincloths only when entering the water. I was no longer afraid of our bodies, neither mine nor his. After swimming for a long time, once we lay down on the sand, we talked and talked, he about the distant south.

On that subject, he was inexhaustible, telling stories of long marches to the cataracts, of navigation on the river, evoking the sources of the Nile, the true ones, much farther according to him than anything the most knowledgeable minds in Egypt could imagine, much farther than the fifth cataract and the junction of the two blue and white rivers that give birth to the Nile. He described to me those southern plateaus where the foliage of the sycamore trees is so wide that entire herds of cattle can take shelter in their shade. He also talked to me about the even more distant black kingdom where it often rains. There, young warriors had to prove their courage by going on lion hunts alone, and there was also abundant gold, in rich veins but also in rivers. He explained in detail how they extracted the yellow metal by heating rocks or stones full of flakes. With luck, one could also find river nuggets the size of a beetle.

He reminded me that in that country, men did not use writing, nor did they have surveyors to measure and allocate arable plots, nor crop inspectors. It was the village chief along with some elders who redistributed the lands every year. Those who harvested more gave to those who harvested less. Everyone knew each other. In this country where they didn't spend all their time measuring like in Egypt, the villagers still had the same life. The women went to the fields, cooked, and raised children, while the men hunted and defended the village when necessary.

Instead of priest-doctors, they had healers who knew how to use barks and roots to treat old age, restore vigor, and heal wounds, fevers, stomachaches, and diarrhea. They also didn't have temples, gods like ours, statues, figurines, or amulets, and they didn't worry too much about death, which was seen as inevitable. They believed in souls, in the breath of life that animates all living beings, birds, snakes, plants, a life that also existed in the breath of the wind that makes the leaf sway, in the lightning, in the sap of trees, or even in the blood of animals. They thought that when they died, their souls would simply merge with other souls, those of all living beings, everything that breathes and moves.

As for me, I talked to him about Memphis, about working with my father, about the monuments, temples, and pyramids, about how they had to be built.

*Immersion: I am Senout, rumors, the third month of Chemou, June 4th, 2529, BC.*

Everyone in Aswan is aware, such great happiness cannot be hidden, their

faces reveal it. The news spread quickly, the news of shared happiness. I am not ashamed, besides, in Egypt, the shame of love does not exist, especially when you are young and beautiful like me. Only my father's reaction worries me. I am not just anyone, I am the descendant of a lineage that has always accompanied the pharaohs. I fear an arranged marriage, not by my father but by the queen.

When I returned to see the wounded, they also seemed to know. They wanted to see in me the bride chosen by their prince, and they accepted me taking care of them more easily. As for Thoti, he spoke to me like a father with tact and delicacy, first with his characteristic ellipses, extremes attract, day answers to night, sun to the moon, the world of the living to the world of the dead, the peace of knowledge to the turmoil of battle, white to black. Then he mentioned the rumors, asked what I had in my heart. I told him that Kemeth wanted to take me as his wife, and that it was what I desired most in the world.

Once assured of my feelings, he offered to speak to my father himself. Even better, he arranged for our return to be delayed by a few more days. It posed no problem. The nomarch wanted to know more about the grain supplies in the province before alerting the grand steward and the House of Grains in Memphis.

The local harvest had been poor, and the peasants will not be able to deliver the expected quotas; grains will have to be sent from the north. The exact needs still need to be determined. This delay in our departure will therefore be useful.

My father summoned me.

– Senout, my dear daughter, do you already know what I want to talk to you about ?

– Of course, father, about Kemeth.

– Above all, about you. The Black Prince would like to take you as his wife, and according to what Thoti tells me, it would be your dearest wish.

– Yes, father.

– I spoke to Kemeth. He says that it would be an honor for him, but it's not that simple because the queen has plans for you, you can well imagine, and besides, Pharaoh probably has plans for him too. He values his son greatly. More than paternal love, it's about power. Kemeth is the leader of expeditions to Nubia. Furthermore, even if your heart speaks, you still don't know much about him. Do you even know where his name comes from?

- The silt ?
- Yes, his mother, the king's favorite concubine, was from the land of Kush. Kemeth's name recalls the dark silt of the river, a symbol of fertility.
- But what about you, father ? What do you think of this union?
- As for me, I would give you my blessing. I only want your happiness. However, you must not forget that he is a soldier, a soldier who fights, not one of those court officers who only parade. He will often be far from you, especially since Pharaoh has grand plans, particularly the incorporation of Nubia into Egypt, which means the kingdom of Kerma to subdue and annex. But this is a secret you must keep.
- Of course, father, I understand the risks, but I am sure of my choice.
- He is the opposite of you, acting through physical strength, whereas your strength lies in your mind. You are so different. You should also know that he is not very wealthy. Despite bringing back so much gold with each expedition, he has nothing. He simply lives at the garrison of Elephantine with his men. If you were to marry him, know that he is a warrior prince who only has his bravery to his name. The king has not yet rewarded his son.

My father pauses for a few seconds and then continues.

On my part, it's not much better. You know that I have always refused honors and gifts, but if you persist in your plan, of course, I will plead your case with Pharaoh. In these last words, I sense sadness, the sadness of a father who is about to soon lose his daughter, the only person in the world of the living that he loves along with Thoti.

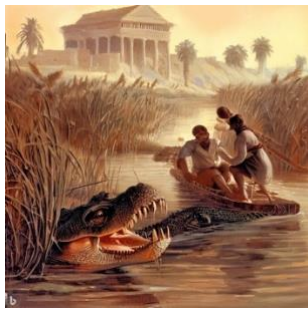
## **union**

*Immersion: I am Senout. Back to the delta, descent of the Nile, Chemou, June 8th in the year 2529 BC in the Western calendar.*

Kemeth accompanied me to Thebes where we met his mother. Then, he couldn't bear to let me go so quickly, so he chartered a boat to accompany me further downstream. My father and Thoti are supposed to wait for me at the northern exit of the Nile loop.

Between Thebes and Abydos. We are close to an islet that still claims precedence; it would be the only true mound from the beginning, the primordial hill where everything started. Just across the river, on the eastern

bank, there is a small temple dedicated to the goddess Hathor. It is built on a rocky platform that emerges from a marshy area. At this season, the waters are low, and only boats with very shallow draft can pass. We leave the boat anchored a little further downstream, and Kemeth calls out to a fisherman. He willingly agrees to lend us his fragile boat made of bundles of reeds. As we make our way towards the temple, amidst the mixture of plants and stagnant waters, a monster emerges from the water. Everything happens very quickly, and I don't even have time to understand.



At first, all I see is a large triangular gray snout with an open jaw, rows of sharp teeth, and a gray-green belly. The boat capsizes in an instant, plunging me into the water. I scream. From the boat, the helmsman has seen everything and alerts the other sailors, but his call for help is unnecessary. Kemeth has just flipped the crocodile with a powerful gesture, and he is in the process of splitting its belly with his knife. The furious beast lashes the water and air with its tail while opening its mouth, closing its powerful jaws on the small oar that Kemeth conveniently offered.

Bing.com / create : a swamp on the banks of the Nile in ancient Egypt, a crocodile opens its mouth to devour a man and a woman seated on a skiff made of reeds, a small temple in the background.`

Blood flows, the beast turns and twists, trying to spin on itself, and sprays water in all directions. The fishermen have joined us; now feeling confident, they manage to immobilize the monster and finish it off while laughing. I am still in the water, up to my waist, with my tunic clinging to my skin. Kemeth helps me get back into the boat. After pulling out the two largest teeth of the reptile, he leaves the trophy to the fishermen. They are certain to recognize in the animal the one that has already attacked them, and Kemeth instantly becomes a hero; however, he behaves as if nothing has happened. I was really scared, but now I understand who he is. He has limitless courage, exceptional strength, I can imagine what it can bring to a fight. For now, I am soaked. Kemeth carries me to the small shaky pier that serves as a dock and embraces me. It's over, and I am free from fear. If other predators are lurking, they will stay calm at least during our visit.

The marsh quickly regains its tranquility. Two sacred sycamore trees cast shade on the five steps leading to the sanctuary. Placed on either side, both bear clusters of rounded figs. Their rot-resistant wood has withstood all floods. Kemeth chooses a few ripe yellowish-pink fruits, swollen with juice, and hands them to me. The figs seem delicious to me. A flock of flamingos passes through the sky. Both sitting on the steps, we contemplate the river. Kemeth wants to know where the mud mound of creation is. To tell the truth, I don't know, so instead, I point to the islet in the middle of the river. It is a small, rounded sandbank that emerges near the right bank, just in line with the stairs. Some bushes and grass grow there, and there is also a stunted shrub, a fig tree. Our clothes are already almost dry.

We enter the temple. There is no one there; the offering altar is merely a stone table. The decoration is simple: on the walls, a few hieroglyphs and paintings, a starry sky, the eye of Ra gazing vaguely at the bull and the cow goddess Hathor, daughter of Ra and wife of Horus, both depicted at the foot of the sacred tree; Hathor's horns frame a solar disc. On either side of the scene, two sheaves rise from the ground, one of papyrus and the other of stacked lotus flowers. Kemeth embraces me. At that moment, I have the strange impression that we are united with the gods' approval, a couple that was destined from the creation. I feel that something extraordinary is happening. And then his desire comes and returns, responding to mine, insatiable. I forget about time. Calls from the boat bring us back to reality. The sun is about to set, and tomorrow we need to depart early at dawn if we want to meet the royal barge where my father and Thoti are waiting for us.

*Next morning.*

I wake up with the first rays of the sun. The gentle morning breeze caresses my skin; small dots and lines dance on the wall of the humble cabin, the effect of the sun filtered through the straw curtains. We are already sailing. Kemeth hands me a bowl of fermented milk; a bowl of fruits is placed on the floor, it's modest, but it doesn't matter. It's time to part ways, one last embrace, the promise to join me as soon as Pharaoh gives permission. For now, Kemeth must go to Yeb. I board the royal barge. The vessel moves away. I find it hard to take my eyes off it, even when Kemeth is just a distant silhouette. I feel like his body is still pressed against mine, like I can hear his voice. We reach the middle of the river, and the current begins to relieve the rowers' efforts.

*Immersion: I am Senout. Thebes, Ouaset, Peret, the season of germination, nine months after the episode of the Temple of Hathor, March sixteenth of the year 2528 BC in the Western calendar.*

I have a very heavy belly; the delivery is coming soon. One of the priest physicians who treats at the queen's court has come to Ouaset to take care of me. He claims there will be two of them, and it is well known that he is rarely wrong.

I feel lonely, it has already been two months since Kemeth left for the campaign with the objective of pacifying the shores of the Nile from the first to the third cataract. He must raise new Nubian battalions and make an alliance with the king of Kush to sandwich the kingdom of Kerma and force them to negotiate. If successful, Pharaoh has promised Kemeth that he will appoint him viceroy of Nubia, and it is planned that I will join him then. I'm afraid Kemeth will push himself even further for that.

Pharaoh has given his consent to our union, and as a dowry, I received a palace in Thebes, in fact, the royal residence where the queen usually stays. Soon she will have a new one; in the meantime, I will have to welcome her during her stays.

The wedding took place in Memphis at the Architect's palace, just before the flood. That year, the flood came early, surprising the priests, not me, because Kemeth's informants in the kingdom of Kush had informed him of the early and abundant arrival of rains in the high plateaus that feed the Nile. The Black Prince took a wife in front of our relatives and his without any special ceremony. The union was recorded by a scribe, and then there was a grand banquet prepared at the farm. Roasted geese from the farm, antelope, heaps of sweets, honey cakes, date fritters, sweet rolls were served. Wine, beer, fermented fruit juices made from carobs, figs, and dates flowed abundantly. My father brought a group of dancers who usually perform at the court. They put on a show with acrobatics, somersaults, and pirouettes, all to the sound of flutes and tambourines. The next day, Ranep also married her captain of the guard, new scenes of joy.

I regularly receive news from Memphis through Thoti. Since I left, my father has changed. I know he would have preferred me to stay here and Pharaoh to give me the palace as a dowry. In fact, it was the queen who decided, probably thinking of my stepmother who lives in the south. Thoti describes the Grand Architect as preoccupied and sad, sometimes even irritable in mood, speaking more sharply and demanding more from his collaborators. What I would like is for him to come and settle in Thebes.



Among the children I will have, if there is a male, one day he could succeed him. I don't want to think that for that to happen, he would need a long life.

*It's done!*

They arrived with the full moon, two beautiful newborns, a boy and a girl, the sun and the moon. While giving them life, in the final efforts to push them into the world of the living, I thought very strongly about their father. I would have wanted Kemeth's knife to cut their umbilical cords.

Immediately after the birth, I sent a message on the first ship heading south, bound for Yeb. From there, I hope the happy news reaches him quickly.

## **Green House.**

Final battle.

*Underground, Project Nemo, experiment time: 2 hours and 3 minutes. Immersion: deep-diving mode, I am Kemeth. Second cataract, early in the third month of Chemou, May, the seventeenth of the year 2528 BC.*

Time has passed. It has already been three long months since we left Elephantine and its garrison. The campaign is over, and on the way back, we are camping tonight near the second cataract, upstream, on the right bank. The main body of the troops has settled downstream, on the same bank, under the command of Sethar. The accumulated booty is considerable and already prepared for tomorrow morning's embarkation: bundles of furs, logs of precious woods, heavy and black ebony like ash, light gray wood striped with yellow, another one red like ochre, and even sycamore wood trunks larger than anything found in Egypt. There are also chests containing spices and all kinds of exotic products, crates full of gold, others full of green malachite, exotic animals locked in cages, a few baboons for the temples, two lions, and three black panthers. Their presence makes the cattle nervous; several hundred head of cattle penned a little further from the bank in a temporary enclosure built by the captives. Many of them will form a new unit as Pharaoh wished. Last night, one of them tried to escape. It didn't end well for him. Quickly spotted, the archers pierced him with arrows. In the morning, his body was displayed as an example for the others.

At daybreak, all the wealth will be loaded onto the boats already in the water, and the convoy will sail down the river northward, heading for Asimbel,

the last stop before Elephantine-Yeb. I preferred, as I often do, to stay upstream with a handful of my bravest warriors to protect our rear. One can never be too cautious. It would not be the first time that an expedition is attacked at this location by desert men. That is also why I let Sethar leave downstream with the main force.

Sethar, a very poor soldier. A month before the start of the campaign, I wanted to recruit some officers in Thebes, but very few showed interest. For them, it was less appealing and riskier than an assignment in Palestine where one can get rich, establish relationships, live in luxury, and get easy promotions. In the end, it was the Nome of Thebes who hypocritically recommended him to me. In fact, Sethar is none other than the nephew of the high priest Baou. I finally accepted him by default despite the rumors that were circulating in the city; he was described as vain, boastful, more concerned with showing off and partying than training for combat. Maybe they wanted to get rid of him, maybe they were also trying to obtain more complete information about the extent of the wealth in the south.

I have been on watch for several hours. I think of Senout; to be loved by such a beautiful and intelligent woman, I must be protected by the gods. They filled me with happiness when she looked at me, when she granted me her love. It has already been a week since I received the news of the birth of the twins; soon I will meet them and they will be able to grow up proud of their father, the Black Prince.

The outcome of the campaign is considerable, and the alliance forged with the kingdom of Kush should ensure the stability of the future province. The kingdom of Kerma will have no choice but to submit before eventually being absorbed. Pharaoh will be satisfied, and the next expedition will be on a larger scale. We will take architects with us to build forts with thick and high walls, as well as temples. Senout, my beloved, I will make her acquainted with the south.

So far, everything is calm except for the usual nocturnal noises, the splashing of water thrown by the current against the rocks, a trotting sound; those are hippos. They are numerous upstream from the cataract; the paths they take to return to wallow in the water after a night on land are nearby. Irritable, as soon as they see an obstacle in their way, they accelerate to return to the river as quickly as possible. That's when they are particularly dangerous.

I also hear some brief barks from jackals searching for carrion or weakened prey. It's time for me to rest. I give my place to Saher, one of my

most loyal and valiant companions, and I soon fall asleep.

I open my eyes to the brightness of the day. To the east, the vault of the emerging new sky highlights the outline of the hills. Saher is still at his post. I would like to promote him, but like Ranep, he refuses to learn even the minimum of writing.

The morning birds start skimming the water of the river, emitting shrill cries. A man has just arrived to inform me that the loading on the boats is almost finished, and Sethar asks if he should still wait. In case of departure, as agreed, he will leave two moored and empty boats for us. I give instructions: they can leave, I will let the men with me rest a little longer, there is no hurry.

The sun begins to heat up slightly. We dismantle the tents and gather our belongings. Suddenly, Saher taps me on the shoulder; he senses that we are being watched and points me in the direction of the rocks. In the chaos of stones at the foot of the cliff, I seem to perceive a suspicious movement, but the light of the rising sun bothers me.

I continue to scrutinize the rocks. It's certain, this time I saw something like a form slithering; it's not an animal, another and another appear. Saher has also seen it and sounds the alarm, "Bedouins!" My men abandon their packs to grab their weapons as dozens of turbaned warriors rush toward us, shouting, in their usual disorderly manner. On our side, there are only nine of us, including four archers. They quickly aim and take down seven or eight of the attackers, but it's already too late to stop the others. They are already upon us, clearly seeking close combat, their only chance of defeating us.

The onslaught is savage. They are at least four times more numerous than us, and as soon as one of them falls under the swings of their weapons, the blows of axes or spears, immediately another takes their place. In this furious and bloody melee, four of my men are already down, along with a good dozen of the attackers.

Saher, who was fighting by my side, begins to stagger under the repeated blows of several assailants. A blow injures him in the thigh, and he falls to the ground. As a turbaned brute prepares to finish him off, I pierce his throat with a dagger. Collapsing, he becomes a shield for Saher, protecting him from the others, but they, in fact, pay no attention. They rush at me, five or six attackers.

Apart from Saher, who is on the ground, there are only three of us left able to fight. My two companions try to get closer to me to form a united front, but they too are under attack. Fleeing is impossible. I suddenly

understand the terrible reality: I am the target of the attack. Everyone is indeed trying to reach me, they are relentless, it's obvious! I kill two enemies in succession by plunging my dagger into their chests. My two men fight like lions, but one of them falls to the ground, wounded, and the other still can't reach me.

That's when everything happens very quickly. I see the blade gleaming, that of a very long dagger. It superficially cuts my left arm, grazes against my leather breastplate, and finds a flaw in the armor between two thick leather plates, just above the groin. I feel a terrible burning sensation and at the same time, I hear a cry of victory. I collapse to the ground.

Immediately, the attackers retreat. I consider extracting the blade myself, but I don't have the strength. I also realize that it would be imprudent because it seems deeply lodged in my chest. Without a doctor, I might be unable to stop the bleeding that will follow. Unfortunately, he has already left with the bulk of the troops. I call out; Saher struggles to get up and comes over. Blood is flowing from his thigh wound. He speaks to me.

Around me, men moan or agonize. Saher has already understood. I have been injured many times before, but never so severely. I, who have overcome so many trials as if I were protected by the gods, considered invincible by my own troops, my mere presence galvanizing them, I am now struck down in turn. The lion tail hanging from my loincloth will no longer impress anyone, nor will the golden-winged lion adorned leather breastplate, now covered in blood. These attributes were enough to spread terror among the rebellious tribes, they said, a combination of the Egyptian demon of the north and the primitive demon of the south. These Bedouins readily told tales that I delivered living prisoners to the beasts, that I rejoiced when they were torn apart. How could they have found the courage to confront me?

I would like to sit up, but immediately the pain forces me to double over. Saher helps me remove the leather armor. My last able-bodied fighter has joined him and is assisting. I hear Saher giving him orders: catch up with the bulk of the troops as quickly as possible and bring back reinforcements with the doctor. I understand that he will never be able to make it. As soon as Saher is momentarily distracted, I remove the blade. I let out a cry of pain and blood spurts out.

Saher rushes over. He tries to apply pressure but in vain, the wound is deep, the dagger was longer than expected. For the first time in my life, I doubt. In battle, it was easy, I didn't ask questions. On the battlefield, there are only fierce beasts, men who empty their minds to better forget their fear,

who fight and struggle without thinking about wounds and death. That is the condition for success. I did as they did, like all fighters in the world. The worst thing would have been to think about loved ones, one's own, those we might never see again. Here, lying down, it's impossible not to think about it anymore. I was destined for the greatest future. A few months earlier, I promised my father Pharaoh to give him Nubia, to expand the kingdom of Egypt. Fate had decided otherwise.

I would never experience supreme glory; I would never build a palace in the land of Kush for my mother on the lands where she was born. The gods had given me the most beautiful, the sweetest, and the most intelligent of women, Senout, but I would never see her again. I would never see the king of Kush who had become my friend either, farewell to the great sycamore trees that shelter herds and meetings of elders, farewell Senout my beloved, the island, the one of life and death. I feel like I'm about to lose consciousness.

### *Zenith.*

The heat is crushing. The orange and ochre tones of the walls dull the reddish-brown of the dried blood. I understand where I am; I recognize the small round hut made of raw brick. That's where we camped the previous night. It still smells of rich earth mixed with straw and a faint odor of curdled milk. I am lying on a woven mat placed directly on the ground. A figure leaning over me, like a shadow, wants me to drink; I recognize Saher's voice. He manages to get a few drops of water through my lips, and I try to swallow, but it's impossible; my body, exhausted, immediately rejects the liquid.

Above me, the light seems dazzling, but it's only the sun, already high, infiltrating its rays through the thatch. I try to overcome my suffering; I dream of getting up, for my mother, for Senout, for the twins, for Pharaoh, my father. I present him with the spoils, but as I bow, I falter, I feel like I'm about to faint, I grit my teeth. Saher speaks to me, pronounces my name, pleads for me to stay in this world. I whisper a few words: the nugget, celestial metal... It's placed on the breastplate. He removes it with his knife and gives it to me. I grip it in my right hand.

I am back at Pharaoh's court. He rises, hands me a whip and a cane with a golden-hooped pommel crowned with an ivory lion. I have conquered, I have pacified Nubia up to the fourth cataract, I will be viceroy, pride shines in Senout's eyes.

The pain becomes horrifying, unbearable twinges invade my chest as if a

powerful hand is squeezing my heart to take my life, and at the same time, I feel a sensation of suffocation. Blood rises to my mouth, frothy pink foam escapes my lips. With each inhalation comes a hoarse expulsion, and with each exhalation, it's as if new spears pierce me to finish me off. I can see the red stain spreading inexorably on the bandage, and I feel my heart racing.

Saher is leaning over me, and I hand him the nugget, trying to articulate a few words, beloved, Tomb of Assuan, eternity together, betrayal, Sethar. I am going to die; I realize the extent of the loss. I will never see the fruit of my blood grow. A final desperate hope, I cling to the idea that I will be reunited with Senout and the twins. I imagine them, him strong like me, her beautiful and delicate like her mother. One last image of happiness: the twins with Senout, me with my mother. I suffocate, foam returns to my lips, it's over.

*Immersion: I am Senout, Thebes-Ouaset, mid-June of the year 2528 BC.*

The dreadful news quickly spread to Memphis and to Pharaoh's court. The twins will never know their father, such an unfair fate. He was a warrior, of course, and my father had warned me. Blood calls for blood, cruelty begets cruelty in an infernal cycle, but Kemeth was not cruel. He found no pleasure in massacres and only killed when necessary. He was loyal and never betrayed. Moreover, strange rumors of betrayal circulate in the city. Anger is rumbling in Elephantine; the Nubian archer battalions and the black contingent are threatening to revolt. Just then, a visitor has presented himself and insists on seeing me about this matter. Ranep initially tried to turn him away, but when he opened his hand, she recognized the celestial metal nugget.

I look at myself in the mirror; sadness bathes my face, and tears have left traces; I must regain my composure. I tidy myself up and then ask Ranep to let him in.

- Ranep claims that you have something important to tell me.
- Yes, Princess.
- Is it important ?`
- Very important, Princess, even if it will revive your sorrow, but I must reveal the truth to you.
- But who are you exactly ?
- I am Saher.
- I do not know any officer by that name.
- I never had any title, and I was not at the parade on the day you first

met the prince, but know that Kemeth treated me like his brother.

– What do you have to tell me ? Saher hands me the nugget.

– When the misfortune happened, Princess, I was by his side. He uttered your name before he died, handing me the jewel.

– Go on, I will listen.

– We were about to leave. Most of the contingent was already on the right bank of the river with the loot, downstream of the second cataract, ready to set course for the fortress of Asimbel. It was the final stage before our return to Yeb, and Sethar was supposed to oversee the embarkation. Your husband, the Black Prince, and our leader, had decided to protect our rear with a dozen men, including me.

For that, we had spent the night upstream of the rapids. You must know that at that place, the river and its banks are blocked by a true chaos of granite rocks, extending to the hills. Usually, when the Bedouin raiders attempt an action upon returning from an expedition, they usually come from the other bank, the west side, so that they can retreat more quickly into the sand dunes of the desert. Therefore, we thought we were relatively safe, especially since, as I just told you, the bulk of the loot was already upstream of the cataract.

– I know, Kemeth told me about it, get to the point.

– The last night had been like any other, peaceful. In the morning, at dawn, Sethar had the boats loaded downstream according to Kemeth's instructions. There was no indication of an attack. The main group was ordered to depart. We heard the drumbeat signaling the departure.

It was right after that we were attacked. I had never seen so many turbans. By the time the archers took aim, they were already upon us. They had a leader giving precise orders; this is not their usual way as they usually fight individually and chaotically.

In the chaos, my prince found himself surrounded by many attackers. Instead of worrying about the rest of us, they targeted him. When I realized it, I tried to rally the men and form a shield by closing ranks, but in vain because they were too many. Our axes, spears, and knives worked wonders. Blood spurted from the pierced enemy bodies; they fell upon each other. I myself was injured and fell to the ground.

Then one of them managed to break through. He lunged at Kemeth with a long knife-like weapon and succeeded in striking him. The weapon sank to

the edge of his leather cuirass just above the groin. The assailant then let out a cry of victory mixed with hatred. Afterward, instead of trying to finish us off, they preferred to retreat.

– Did the battle end like that?

– Yes, suddenly and on the leader's orders, their chief. He stayed behind.

– What happened next ?

– I owe my salvation only to the fact that one of them collapsed dead on top of me when I was wounded in the thigh. I got up after they left when my prince called. Another soldier survived. Just knocked out, he quickly regained consciousness. We were the only survivors with Kemeth.

– Did they take anything, any weapons ?

– No. Yet we still had three crates of gold with us. I instructed the soldier to try to catch up with the main troops and return as quickly as possible with the doctor and a few men. I knew how risky it was to remove the dagger. Kemeth knew it too, but the chances of help arriving in time were very slim. So he decided to take the risk and extract the blade himself. Blood gushed out, and he passed out. I carried him to a small mud hut and tried to treat him as best I could. I tightly wrapped a clean linen bandage around his chest.

– So you stayed alone with him ?

– Yes, Princess, that's how it happened. I watched over Kemeth until his last breath.

– Was he able to talk to you ?

– Very little, Princess. He was very weak and delirious most of the time. However, as he gave me the celestial amulet, he uttered a few words: beloved, tomb, Assuan, my mother, eternity together.

– Is that all ?

– Almost, he struggled to speak, drowning in his own blood. He tried to say two more words.

– Which ones ?

– I brought my ear close to his mouth. I thought I heard betrayal and Sethar. Right after that, he took his last breath.

– And then you left ?

– No, not immediately. I covered the body with large stones before knocking down the walls. Only a tumulus remained.

– Did you then return to Yeb ?

– Not to the garrison, I was wary, but to Assuan where I hid in the Nubian quarter. When I tried to get news of the guard I had sent, I learned that he had been assassinated. Sethar never tried to come to our aid. In Yeb,



everyone believed I was dead with the Black Prince. That's what Sethar had told the governor. So, discreetly, I contacted several of my men and made them promise to keep the secret until we could go back to retrieve the body. We left with over thirty men. Sethar claimed it was desertion and promised a reward to those who captured us dead or alive. Upon our return, we sent the crates of gold to the governor and told the truth. Soon the rumor spread that Sethar had orchestrated it all.

– And what about you, Saher, what do you think ?

– I also believe it was a trap. With the nomads, the confrontations were usually just skirmishes, and they were never this numerous. And there's something else. A few days before the tragedy, I myself caught Sethar with a man, neither one of ours nor a Nubian. He wore that beige turban that the nomads wear to protect themselves from the sun; when unfolded over the face, it also serves as protection during sandstorms. Sethar seemed embarrassed when he saw me. He hesitated and then claimed it was a spy, but they don't exist among them, at least I've never seen one.

– If the nomarch doesn't confirm your version, you realize your life would be in danger. Know that it was the high priest of Thebes himself who recommended Sethar. He's his own nephew. I will give you a message for my father, the grand architect and friend of Pharaoh. You must go to Memphis without delay.

Kemeth didn't like the desert. For him, it brought forth evil, just as the night inspired fear. It symbolized betrayal and death, scorpions, venomous snakes. Superstition or premonition, who knows? He hated those Bedouins, jackals, scavengers from the desert. The few heads of cattle that accompanied them were not enough for them. Those who ravaged Nubia would come to plunder the banks of the Nile between the cataracts, and they were as feared as those who operated on the border of Palestine. They lived only through plunder, had no word, respected nothing. Cursed creatures from the realm of Seth! Kemeth would never have let himself be caught off guard. I believe Saher is telling the truth, Sethar is a traitor. Baou, as the high priest of Thebes, knew about the position of vice-king; he knew Pharaoh's plans. And it was precisely he who imposed Sethar. The curse continues!

~

## **black dove**

*Immersion: I am Senout, the funeral of the Black Prince in Souenet-Assouan, 2528 BC, Akhet, the flooding season.*

On the left bank, facing the city, the funeral procession is being organized for the short journey that will take it from the riverbank to the bottom of the grand ramp, the one that leads to the tombs at the top of the hill. By my side, my father looks serious and sad. He must think that history repeats itself endlessly. After him, it's now my turn to be affected. Like him, I will not have a real family. There's also my stepmother, inconsolable, crushed by grief. She now seems so old to me. She is condemned to see her own son rest in the vault that was reserved for him. He is ready now. The works have been resumed, and I have personally supervised them. Workers, sculptors, and painters have accelerated the work. Even though they are barely dry, the hunting and battle paintings and frescoes are finished: on one wall, lions hunting gazelles, a lion defeated by three men, Pharaoh guided by Kemeth crushing an army of Nubians, on another, the primordial mound with its fig tree, the temple surmounted by two stars, the twins.

When we started the ascent, I couldn't help but think about life, happiness, and misfortune so unevenly distributed among people, with no possible explanation. It's as if the world of the living is not the same for everyone, as if the gods take pleasure in mistreating their finest creations to make them understand that only they are the true masters, that men do not need to reward each other. Those whom the gods have decided to protect are often stupid, ugly, cunning, or wicked. Whatever mistakes or injustices they commit, they always succeed. Others who should be considered the best of men are overwhelmed by all kinds of misfortunes. How can one believe in divine justice?

In the tomb, the black granite sarcophagus is already in place. I personally supervised the mummification process in Thebes, in an improvised embalming workshop set up in the annex of my new palace. I recruited a priest who had worked for several years at the grand temple but had not stayed there. He did wonders because I made sure to use the best products, and Thoti advised me. The embalming of the body restored the illusion of life.

At each stage, seeing the poor remains, I cried. I clung to Kemeth's last words, "together for eternity." In the end, when his appearance vanished forever, masked by the linen bandages, I secretly embraced this body that

was so dear to me and had given me so much love, so much happiness. Then I slipped three faience amulets, a lion, a leopard, and a panther, one for me and one for each of the twins. From now on, only memory will remind me of my beloved husband, aided by the few objects from our all-too-brief life together.

It is the end. I am in the vault. The mummy is placed in the nested sycamore wood coffins, arms crossed over the chest, with Kemeth's staff of command. I chose a leonine funerary mask. The priests have just performed the ritual before the tomb is closed forever. Afterwards, I will have to content myself with memories, find the most fitting words to describe their father to the twins as they grow up.

*I am Senout, Thebes, the green house, Chemou, the harvest season, five years later.*

I live in the former queen's palace, on the river's edge, given to me by Pharaoh. Ranep is no longer in my service. Once free, she went to live in Assouan, but she often comes back. As for the twins, they have grown up; they will soon be five years old. Meroet is already playing at war, and Hétémout fruitlessly searches for her father. At night, they still sleep with me.

On the terrace overlooking the Nile, I had the Memphis basin reconstructed exactly as it was, with lotus and papyrus. Every day of my life, when the sun appears and disappears, I think and pray for Kemeth, the only love of my life. I want no other. Time has passed, but I have not forgotten anything. Before the sarcophagus was closed, I made a secret vow never to remarry. Above the entrance porch of the green house, I had a black dove carved in basalt placed. All men can understand what it means. For me, there cannot be two lives. For our brief shared existence, I will never thank the gods enough. I consider that our life together, even if short, was worth living.

The traitor Sethar, who destroyed my life, met an infamous end. As soon as the high priest of Thebes departed to the other world, he lost his protection. Pharaoh's guards arrested him, and he was sentenced to death. His remains, cut into pieces, were scattered in the desert, delivered to the scavengers so that he could never be reborn.

Thoti has departed for the realm of the dead. My father found him one morning, his head bent over an unrolled papyrus. He seemed asleep in his thoughts, but his spirit had truly left. The grand architect hid the text, a sort of satire of society that warned against the priests, denounced the all-powerfulness of the clergy, their pride, all their supposed superior thoughts,

their will to impose sometimes absurd beliefs. The text also vehemently denounced the greed of the high priests, the fact that they profited shamelessly from the credulity of men, ignoring the sweat of the common people. For Thoti, who came from humble origins, all this seemed unbearable and likely to pose serious problems one day. These priests lived in cleanliness, well-being, and often abundance, producing only ideas in their heads. Except for those who practiced medicine, they were nothing more than parasites in his eyes. In my opinion, when entering the underworld, when judging good and evil, none of this will matter anymore. What will remain is the good he has done on Earth.

My father was deeply affected by Thoti's disappearance. It was as if he had suddenly aged several years. In Memphis, on the plateau of the dead, Tozar now oversees the pyramid construction sites. I wish my father would agree to come here to Thebes.

*Immersion: I am Senout, Thebes, Green House, Khemou, the beginning of the month of May in the year 2521 BC.*

Pharaoh did not oppose my father's departure. Here in Thebes, the palace has been expanded with a new wing that also overlooks the river. That's where he now lives, overseeing the education of the twins. In Memphis, Tozar has taken over. He still works in our old house, unaware of its secret, of course. It is said that he will build two new pyramids, this time with bricks. Only the cover will be made of stone. When my father left, he brought a large part of the archives here, leaving only duplicates of those concerning the construction of the Gates of Heaven. So here in Thebes, I have all those that concern pharmacy, medicine, cosmetics, perfumes—a true treasure that contains all kinds of recipes and manufacturing secrets. I know all the plants that heal or relieve various ailments, the barks, seeds, powders, and various salts, their origins, the best way to prepare and preserve them, and their indications, which ailments each one can be prescribed for and their contraindications.

My pharmacopoeia is one of the richest in Egypt. Thoti helped me recruit very promising apprentices who can write. They record the best way to elaborate all these products, the result of numerous trials. I have learned how to heat the reddish-brown balls of hardened myrrh resin to obtain a thick, orangish oil. It works wonders for treating sore throats and digestive problems. I also know how to treat the bark of balsam trees with heated water; the preparation helps heal skin wounds, cure intestinal infections, and

relieve toothaches. It is a lengthy process: heating the water, passing it over the plants, then cooling it, gathering the oil droplets, and placing them in a labeled bottle. I do the same for other plants and then mix the oils according to the diseases to be treated. With juniper, brought from the northern borders of the kingdom, I prepare healing ointments, shampoos, and soaps that cleanse the skin and eliminate redness. With terebinth resin and frankincense, I prepare a paste that makes sweat disappear.

I also produce Kyphi for fumigation. It will burn in censers to perfume the temples and honor the gods. The one from Green House is now known as the best in Egypt. To elaborate it, I macerate no less than a dozen ingredients in wine and honey, including reeds, substances from the land of Kush, and others found only in the land of cedars. For perfumes, I macerate flowers in cold or hot moringa oil and then filter them through fine strips of linen. Finally, I know better than anyone all the products from the great south. I know how to cure incontinence with the bark of a tree from the land of Kush. I know the bitter decoctions made from roots that help fight fever and those that stop diarrhea. I also know cosmetic recipes that firm the skin and revitalize the hair, prepared from shea butter seeds, as well as youth balms that make the complexion radiant and reduce wrinkles. I know how to make subtle shades of makeup that are unknown in Memphis. I am preparing one especially for the Queen, using malachite powder mixed with gold flakes and pearls. The palace is surrounded by a garden where all kinds of plants grow. The servants who work there help me make the preparations. In the shops lining the garden, leaves and flowers dry on racks, perfuming the air with their fragrances; others release their precious aromas and perfumes into oils or alcohols.

I am now recognized, I have gained fame, and people come to consult me at Green House as they used to go to my father to build the most beautiful monuments of the kingdom; they come to me to obtain the best medicines and cosmetics. Such is my life, peaceful and protected by the soul of Kemeth. He watches over me from the mountain of the dead in Aswan. When I go there, I don't even want to look at the beach where we used to swim. My life is now in Thebes, and I don't regret coming here. The Queen comes to stay here more and more often, and grand temple projects have been presented. The city should develop dramatically at Pharaoh's initiative. Ranep has also returned from Aswan. She now sees me as a friend. Always in a cheerful mood, she warms my heart. Her three children have grown up, three boys who all want to be soldiers even though their father has already died in battle.

The twins are also growing up and often ask me where their father is, why they are always told he is under the ground in the realm of the dead. It's too sad for them, so I tell them he is in the sky with the stars and that he watches them from above, loving them just as I love them.

*Immersion: I am Senout, Thebes, Green House, seventh anniversary of Kemeth's death.*

I dread the approaching night. It's the eve of Kemeth's death anniversary. Like every year, I will have to confront terrible memories. Tomorrow will be a sad day; I won't see anyone. It's very hot, and I'm lying on my bed, facing the large opening that overlooks the river. For once, Meroet and Hetemout are sleeping in a room nearby. I'm afraid of waking them up, afraid of scaring them when the nightmare spirits come. On my chest, to protect me, is Kemeth's little piece of star, my small fragment of happiness.

Sleep has finally come. I see large rocks like those blocking the cataract beyond Yeb, a field of dark stones. Hetemout is there, her face smeared with red. She cries as she looks at the ground. Her doll lies dismembered and disheveled, a tear in its side revealing its stuffing of straw and sand. All around are gods, half human and half animal, vulture-scarab, crocodile-ibis, and cynocephalus-cobra. They have their eyes fixed on another god with a cat-like face, but a wild cat with ears that erect like those of beasts, with a cruel and indifferent gaze. He holds a blood-stained dagger in his hand. He contemplates his work, no longer piercing the doll but the leather armor pushed aside with the golden lion. It's Kemeth's chest, the love of my life. Blood spurts from his side, and he tries to stop it. I can't see his face, only the expanding red stain. I suffer. He hands Saher the metal of the stars. A cold sensation, the black-headed dog god has stepped forward. Anubis balances the scales with two identical weights. He then proceeds with weighing, a white goose feather on the right pan, the heart on the left. The balance tilts, and I recognize Thoti. He records the result. Kemeth has earned the right to go to that magnificent land where the water is always fresh and pure, the harvests abundant, the men strong and courageous, the women beautiful and loving. Displeased, a grimacing priest begins to bleat, taking on the appearance of a goat-headed man. A strong wind starts blowing. Kemeth appears and embraces me. He is no longer wounded; my body is his body; my heart is his heart. Around us are columns made of stacked lotus flowers, djed pillars eager to reach the sky. They guide us to the invisible and impenetrable world of souls. We board a stone boat and ascend. Up in the

transparent sky, they are all there, my father and mother, Thoti, me, the twins, Ranep, the Queen, and even Saher, all those we have known. There is also music, wind and string instruments, flutes and harps, instruments echoing each other in harmony, repeating the harmony of our souls. Anxiety, someone or something wants to tear me away from my happiness. I want to get up, but I can't. I command my body to sit up, but it doesn't obey. I need to touch my pendant. I succeeded. A loud noise and fluttering wings, I wake up abruptly. It's nothing, just a frightened large bald mouse bumping and hitting against the walls, going back and forth. It must have been attracted by the moon's reflection on the large bronze mirror and entered. I place a lamp on the terrace, and it scurries out and flees. I have also disturbed the nocturnal life: splash! A large lizard or a crocodile has just plunged into the river in front of the house; barking and hoarse cries come from the other bank. All of that was just a bad dream. Crouched on my bed, I try to do what Thoti taught me, to recall what has happened in my life or in my thoughts in recent days. Hetemout crying near her doll: yesterday, in the courtyard, a cat seized the toy. It bumped and scratched the doll with leaps and bounds. When Hetemout called me, it was calmly licking its paws, unaware of the drama it had triggered. As for her, her face was smeared with the juice of the red figs she had just enjoyed.

Another building block of the dream: of course, the apprehension of the anniversary of that tragic day when Kemeth left me. From sunrise to sunset, I couldn't help thinking about it, the large rocks, the cataracts, Sethar. The latter had just transformed into a cat when it made a grimace. As for the character with the goat-headed appearance and that evil gaze, it is undoubtedly Baou, the high priest of Thebes, the one who recommended Sethar to Kemeth. I could continue and interpret the entirety of my dream. It's no longer interesting; it's not reality, and it's not, as some priests claim, a journey to another world. It's only my heart that no longer controls my feelings and reasoning when I sleep.

### *Midday.*

The queen has thought of me. A message has just been delivered to me, sealed with the royal seal. From this day forth, Meroet and Hetemout will be considered prince and princess of Upper Egypt. The royal decision must be recorded in all the kingdom's archives, both in the north and the south, and they should be treated with the respect due to their rank. They are playing in the garden. My father is on his terrace facing the Nile, lost, wandering in his

thoughts. He can hardly see anymore, speaks of darkness, curses, begins to mix up his memories, confuse names. He often calls Nefti my mother and Thoti, talks about joining them in the realm of the dead. I will wait for a better moment, a few moments of clarity, to announce the good news to him. I want to give him this last pleasure, reassure him about the twins, so he can dream, even for a moment, of the best life for them. Soon, I feel it, he will depart. Then I will be alone, but as Thoti always told me, happiness is in thought, in memory, and in reconstructing the best of what we have known in life, the memory of all those we have loved.

*I am Joy, Underground, Project Nemo, Ocean Dome, the first day of the great journey, April nineteenth of the year 2035, experiment time 2 hours and 11 minutes.*

I emerge, Krawn understands, it's over for today. I'm tired, perhaps it's the emotion. The helmet comes off gently. I ask Krawn about Uncle Luc's return. He still hasn't comeback, maybe tomorrow.

~



## WEST

### SUPREMACY

roots

From East to West

*I am Joy, Underground, Ocean Dome, Project Nemo, day 2 of my time travel journey, April 20th, 2035, experience time: 0h 0min.*

I feel good, ready to take the place of new people in the chosen Third Age by the Machine, the age of the West, a vanished age, just like the two previous ones. I suspect that before that, there will be a recap of some essential features of the vanished civilization, accompanied by comments from Krawn. Indeed, he begins a presentation:

– We will now focus on the history of the West, specifically that of Western Europe. Agriculture and livestock developed there later than in the Fertile Crescent, due to the time it took for people from there to arrive. Why did people who were already settled decide to embark on a new adventure? Perhaps due to a population surge, the lingering desire of many to return to nature, to a life open to vast wild spaces rather than closed urban life, or maybe as a result of conflicts or epidemics that could have led to the abandonment of entire cities.

Perhaps even more simply, it may be attributed to Homo's natural curiosity. In any case, a vast migratory movement from east to west took place, resulting in the settlement of the European continent by particularly skillful, enterprising, ingenious, and intelligent men. Two major migratory routes were taken: one by sea, progressing along the Mediterranean, and another by land, moving up the corridor between the Black and Caspian Seas, more directly through the Bosphorus. The first encounter of these two migratory waves led to the miracle of ancient Greece, a remarkable hub of genius.

These human migrations genetically defined the peoples of Europe through varying degrees of intermixing and sometimes complete replacements of certain groups annihilated as a result of conflicts or the lack of resistance to unknown pathogens brought by the newcomers.

The settlement of Western Europe by maritime routes is very ancient.

Those who departed from the eastern coast of the Mediterranean had successively reached Malta, the Atlantic coast of the Iberian Peninsula, and present-day France, arriving at the Orkney Islands in northern Scotland as early as 4000 BC. The construction of megaliths during this epic adventure attests to it. From the shores, men then spread their culture towards the center of Western Europe or towards England.

The year 2600 BC marks the probable beginning of the construction of Stonehenge. However, the population that built the great circle of megaliths soon gave way to new arrivals, those who had gradually moved from the Danube to the Rhine and then to the Atlantic West Coast. They too had built places of worship and temples along their migratory path, just as their ancestors from the Fertile Crescent had done long before. Where they couldn't find rocks to raise towards the sky, they used logs of wood.

As for Central Europe, by 2500 BC, approximately at the time of Senout, its inhabitants already originated from three-quarters of the migration waves from the East. Greece, Carthage, and Rome had erased from many Western memories the genius and contributions of those who lived within the continent, in the hinterlands. This is how it goes for the victors who always tend to claim all the merits and innovations!

Over time, the genius of the Rhine, an inheritance from the continental migratory routes originating from the Caucasus, finally joined the genius from Italy, the legacy of Rome, itself a legacy of Carthage and ancient Greece. Together, they produced the best. It is surely not a coincidence that so many great minds, so many scientific discoveries emerged in Italy, Germany, France, the Netherlands, England, and Scotland. Always further west... coast of America, from the East Coast to the West Coast of America, the Pacific Ocean, then Asia, beware of being surpassed! The genius expressed by Europeans and their American offspring was the result of ruthless selection, stemming from the harsh conditions imposed on people who came to live on this continent. The children of the West were not sufficiently aware of this at the beginning of the 3rd millennium, otherwise, they would have questioned themselves and perhaps avoided the great catastrophe.

## **forceps**

*I am Joy.*

Krawn continues:

– From the complicated history of Europe, we can highlight a few essential milestones that help us better understand how this part of the world was able to gain a dizzying ascendancy and thus prepare for post-humanity. After the fall of Rome in the late 5th century AD, Europe, in a way, fell into a civilization crisis. This was followed by a long period of hesitation where each people sought their place in a general context of competition between the Christian Church and the kings. The Church of Rome, partly responsible for the fall of the Western Roman Empire, needed the princes to confirm its increasingly authoritarian control over spirituality in Europe, to eliminate all beliefs other than the narrow and unified thinking dictated by the Vatican. The constantly warring princes, under the pretext of royal successions or princely marriages, needed the Pope's approval to justify the incessant wars that ensued. Post-Roman Western Europe was thus martyred. Wars of succession and religious wars fueled by Rome among European Christians were compounded by epidemics of cholera, typhus, and the plague, which regularly decimated populations; people were still unable to understand their origin. Added to this was the war against a conquering Islam that tried to take advantage of the disunity among Europeans. Throughout Europe, it was nothing but suffering and misfortune. However, these afflictions did not herald the apocalypse of the year one thousand that so many magicians had predicted; it did not happen.

Despite religious hatred, epidemics, wars, and the numerous famines resulting from them, Europeans held on. Especially in this turbulent context, many people continued to be passionate about science and technology, and certain factors would soon encourage them to persevere. The Reconquista in the Iberian Peninsula contributed to the emergence of writings from ancient Greece that had been translated into Arabic in the meantime. In fact, these documents often already existed in the West but were buried in Christian monasteries, also in the East, considered dangerous to the dogma, even cursed. The pillaging of Byzantium by the Christian crusaders also brought a significant contribution with the repatriation of precious manuscripts.

Later, in the mid-fifteenth century, when the printing press was developed in the Rhine Valley, these combined factors allowed for the widespread dissemination of a whole range of scientific studies and theories dating back to antiquity. The establishment of universities with broad purposes, not only religious, as in the Islamic world, was facilitated by the existence of this enormous documentary base: [Bologna, Parma, or Modena] from the twelfth century in Italy, [Paris, Oxford, Cambridge, Salamanca, Padua, Naples,

Toulouse, Rome, Siena, Montpellier, Coimbra, Lisbon] in the thirteenth century. These establishments quickly spread throughout the rest of Europe, and the best minds of the continent could begin to flourish in these future temples of knowledge.

– All things considered, the so-called period of obscurantism that was supposed to have followed the fall of Rome should be put into perspective ?

– Yes, if you consider the misfortunes I have just mentioned, a few hundred years don't mean much. The enthusiasm for science and technology has always remained present in the West. As early as 1100, there was a strong economic recovery with extensive land clearance, agricultural development, and population growth. But above all, numerous technological innovations emerged. Windmills were widely spread from 1180 in Normandy or from 1250 in Flanders. The technology involved a vertical wooden shaft of several meters, wind-directional wings (with a wingspan of up to twenty meters), and mechanisms made of metal screws and gears. All of this didn't happen overnight. These were by no means isolated cases. Many engineers, technicians, and skilled craftsmen were at work.

Another example: starting from 1300, most major cities in Europe installed mechanical astronomical clocks. Certainly, in China or Iraq, during the same periods, such mechanisms existed, but they were the exception. I insist, of course, but what I'm trying to make you understand is that the mastery of gears, springs, and metal parts that allowed mechanisms to become increasingly reliable and sophisticated was not the work of a few enthusiasts. Across the entire European continent, there were skills and expertise that couldn't have suddenly appeared.

In truth, genius did not vanish with the fall of Rome. I could also remind you of the fantastic adventure of the Gothic cathedrals. Long misunderstood by historians and scorned in its time by Italy, hence its name 'Gothic', this human masterpiece, worthy of the pyramids, did not emerge suddenly from nothingness either. Initiated in France in the mid-twelfth century, it marked Europe's architectural superiority in the world. In other continents, during the same period, stones continued to be piled up, but nowhere did anyone know or dare to build such technically advanced monuments.

Gothic architecture is a signature of the genius of the continent, a true breakthrough. Until then, places of worship were dark, resembling the sacred places that humanity had frequented until then, such as caves and temples. Light was scarce there. Perhaps to resemble the Church of the Celestial Jerusalem described by John in the Christian Apocalypse (a sanctuary bathed

in light), architects took the risk of opening up the walls widely. They carved stone like lace and strove to make it rise as high as possible. If necessary, they reinforced the stone vessels with iron. Like in the adventure of the pyramids, many attempts ended in disaster; naves or spires collapsed because they were too wide, too tall, too ambitious. Nevertheless, the builders persevered, and overall, the techniques were quickly mastered.



Bing.com / create, prompt : Paris in the Middle Ages, the interior of the Sainte Chapelle.

After the inauguration of the Basilica of Saint-Denis in Île-de-France in the year 1144, the Gothic style quickly spread throughout Europe. Once again, it is evident that it is a global movement in Europe, which means that many architects, technicians, and workers acquired sufficient skills.

### *I am Joy*

The Machine has taken over from Krawn. She mentally injects me with a few brief reminders about the Renaissance era. One man alone will embody everything that the children of Europe will soon achieve, leading to the brilliant destiny of the West. It is, of course, Leonardo da Vinci. Born in 1452, he represents what Europe has been waiting for so long, a man unburdened by complexes toward God, who believes in both art and science. In his time, based on the achievements of previous centuries, everything accelerates for the arts and sciences despite famines, plagues, and ongoing armed struggles. For the artist-engineer from Florence, there is no boundary between science and art in nature, and to unify them, he uses drawing. As for science, it is already a sign of the intense desire to model nature in its entirety, all its components. Of course, drawing alone will not suffice; there are other senses than sight, and music has been known to involve mathematics for a long time. Modeling the world, soon Homo occidentalis will understand that it means mathematizing it.

Scientists progress in measuring quantities, seeking precision above all. Measuring speed is no longer enough; now we want to know precisely how

this speed evolves. The variation of speed in a unit time, in other words, acceleration, becomes an important magnitude that better describes the motion of bodies, dynamics. From 1430 to 1450, a reliable printing technique is developed by Gutenberg. It is an improvement on a technique already known in China, which involves arranging movable characters in a matrix before pressing them onto a support to create a reproducible imprint multiple time. The innovation lies, among other things, in the fact that now the characters are engraved in a lead-tin-antimony alloy, which is much stronger, more precise, and more resistant than the wooden or clay characters used in Asia. In addition, the ink used is oil-based rather than water-based. The dissemination of documents in large quantities becomes possible and facilitates access to knowledge. By 1463, several printing workshops had opened in Paris. Rome, however, would continue to deny the genius of the Rhine for a long time. Thus, the popes would prefer ancient architecture for the construction of the Vatican Basilica, a symbol for many Europeans (especially Protestants) of all the corruptions of the Catholic Church.

*Continuation.*

In the fifteenth and sixteenth centuries, the hinge between the fifteenth and sixteenth centuries also marked the beginning of a phase of exploration of the Americas, which would eventually lead to their complete colonization centuries later. The seventeenth century, in turn, is marked by the mathematical modeling of physical phenomena. The scientific approach itself is nothing new. Brah applied it when he shaped his tools, but he had no means of recording his observations or accurately measuring the force with which he struck a piece of flint to extract a blade from it. Menothep had writing at his disposal. The architectural archives helped him imagine new constructions. He could describe them carefully. Yet, despite his genius, he still did not have sufficiently precise means of measurement to describe an experiment in great detail, nor the appropriate mathematical tool.

The proposal to describe the trajectories of moving bodies in a Cartesian coordinate system with coordinates  $x$ ,  $y$ ,  $z$  will change everything. The increments  $dx$ ,  $dy$ ,  $dz$  over a time interval  $dt$  will allow for the precise tracking of velocity  $dx/dt$ ,  $dy/dt$ ,  $dz/dt$  at every moment, as well as acceleration. Differential calculus (or infinitesimal calculus) will lead to the first major success of modeling, namely the discovery of the universal laws of motion by Newton around 1680. If Galileo had access to this formalism, he might have

been the one remembered by history for this breakthrough.

What is very important on a general level is that humans then demonstrate their ability to demystify the complexity of nature; soon they will dare to mathematize everything. With just a few symbols and equations, they will be able to describe phenomena that previously seemed incredibly complex, some of which were considered divine. The Greek intuition of describing nature through a few numbers and rules will be confirmed.

The calculation of probabilities also emerges in the 17th century with Pascal, Huyghens, Leibniz. Its developments will pave the way for the mathematical or statistical modeling of very large sets of elements. Thus, by the end of the 19th century, Maxwell-Boltzmann statistical thermodynamics will show how simple rules applied at the microscopic level to very large sets of molecules, atoms, or particles can predict macroscopic behavior, such as the relationship between the pressure, volume, and temperature of a gas.

Later, other mathematical advances will demonstrate, if needed, that humans should not be intimidated by the apparent complexity of nature. This is particularly evident in the theory of fractals, which explains the shape of leaves, flowers, many other living beings, or inert elements, as well as chaos theory and catastrophe theory. Finally, another revolution will be the simulation or numerical modeling made possible by the fantastic development of computers in the 20th century. It will no longer be necessary to be born with exceptional mathematical gifts to start modeling nature.

At the beginning of the third millennium, there was only one step left to take: the modeling of human consciousness. The unity of nature, the fact that everything in the infinitely large and the infinitely small can be modeled as vibrational states, the common intuition of all forms of spirituality that everything is connected, supported by the advances in quantum mechanics showing the interdependence of the observer with the observed object – all of this led to the belief that thought itself could one day be modeled.

### **the best and the worst**

fireworks

*I am Joy, Underground, Project Nemo, Ocean Dome, day 2 of my time travel journey, April 20, 2035, experiment time: 0h 6min.*

Krawn continues his historical synthesis:

– From the eighteenth century onwards, the history of Europe becomes so rich in the field of science and the arts that it would be futile to try to summarize it in a few pages. Man will even finally realize the dream of Icarus, to fly! This begins with a rain of discoveries made at a pace that Homo has never experienced before, crushing all previous civilizations. They concern not only ancient fields of research like mechanics, but also new disciplines such as geology, paleontology, and biology. Two fields will particularly disrupt the man's view of his place in nature: chemistry and life sciences. Among the great pioneers of science, those who open new paths, Antoine Lavoisier and Jean-Baptiste Lamarck are prominent.

For the former (treatise on chemistry, 1789), it is the birth of chemistry. Until then, people everywhere on Earth had tried to interpret natural phenomena by imagining a small number of constituent components: five in China (wood, earth, water, fire, and metal), five in India (earth, water, fire, wind, and space), and four in Greece (earth, water, fire, and air), to which they sometimes added the ether bathing the stars. The ancient Greeks also believed in the coexistence of four kingdoms in nature: mineral, vegetable, animal, and human. The discovery of more and more simple elements will disrupt everything and sound the death knell of alchemy, giving birth to chemistry. It is discovered that water is composed of only two atoms, hydrogen (H) and oxygen (O), and that air is also primarily composed of two atoms, oxygen (O) and nitrogen (N). It's a revolution, air and water have a common elemental constituent! It is also discovered that this oxygen atom can be found in a mineral when it is oxidized, as well as in acids like nitric acid ( $\text{HNO}_3$ ), which was highly regarded by alchemists. Their point of view was therefore false.

From then on, there is a race to identify new elements. All natural substances on the planet will be analyzed, and it will quickly be noticed that the number of atoms is limited. By arranging them according to their increasing mass, it will also be noticed that comparable chemical properties reappear periodically. This will allow predicting how an atom is likely to associate with another through a so-called "chemical" reaction. "Nothing is lost, everything is transformed," and this happens according to the affinities or preferences that atoms have for each other. As for man, whom humanity places above all, he is nothing more than a chemical reactor. This is another revolution. The waste expelled only contains the atoms present in what has been absorbed through food after undergoing vulgar chemical transformations within the body. It is discovered that the inhaled air does not



have the same composition as the exhaled air; it contains more carbon. The chemistry of life is born. Living beings, animals or plants, are all made up of fairly simple and therefore lightweight atoms. For the human body, by mass: oxygen 65%, carbon 18%, hydrogen 10%, nitrogen 3%, calcium 2%, phosphorus 1%, and less than 1% each of sulfur, potassium, sodium, chlorine, magnesium, iron, and copper.

The second example of a great pioneer concerns biology, more specifically the theory of evolution. The fixed vision of nature resulting from the sudden creation of the world by a divine hand will be opposed by a so-called transformist vision. In the Enlightenment era, a scientist recognized by history such as Linnaeus was still primarily a fixist naturalist. The species living on Earth, which he classified and to which he attributed names, were considered to have all been created by God at the moment of Genesis as part of a grand and deliberate design. The balance of Nature, 1749, excerpt:

**We count as many species as there were at the beginning of diverse created forms.**

The humble mosses and herbs are at the feet of the tall trees because God has decreed it so during creation. The order of nature is divine. Each species has been programmed to have a given place. Linnaeus' giraffe was created as a giraffe! In contrast, in the transformist view, species continue to evolve. In the ninth and thirteenth centuries, the observation of animal species domesticated by humans and their comparison with neighboring wild species had been sufficient for scholars in the Arab-Muslim world to put forward the transformist hypothesis. However, there had been no systematic study on many species. It is the French scientists who will take the decisive step, even if history often only remembers what it wants! In 1750, Pierre-Louis Moreau de Maupertuis wrote the following in his *Essay on Cosmology / System of Nature*:

**But could one not say that in the fortuitous combination of nature's productions, as there were only those where certain relationships of suitability could survive, it is not surprising that this suitability is found in all currently existing species?" "One could say that chance has produced an innumerable multitude of individuals. A small number is constructed in such a way that the parts of the animal can satisfy its needs. In another infinitely larger number, there is neither suitability nor order. All these latter have perished.**

In other words, chance can create countless species, of which only those that are adapted to the environment survive. The theory of natural selection is announced. One can imagine that chance can create all kinds of giraffes with longer or shorter necks; in an environment where there are only trees and no more vegetation on the ground, only those with a long neck can survive.

Furthermore, the extensive and systematic classification work carried out on various animal and plant species, conducted at the Jardin des Plantes in Paris, led to the publication of Jean Baptiste Lamarck's "Philosophie Zoologique" in 1809; the same year Charles Darwin was born. Lamarck's theory speaks of adaptive diversification and the complexification of organisms:

**Organisms adapt to their environment during their lifetime through more or less pronounced use of their organs: an organ that is extensively used due to the organism's needs tends to become reinforced...**

Function creates the organ! Lamarck's giraffe, through its constant effort to search for food it likes at the top of trees, by consistently raising its head upwards, encourages the elongation of its neck; the characteristic is passed on. These writings have often been misinterpreted, with some thinking that Lamarck completely excluded the role of chance, but this possibility had already been raised by Maupertuis, as mentioned earlier. Moreover, Lamarck uses the concept of evolutionary lineages, but he believes that there are multiple lineages; the state of classifications did not yet allow for the hypothesis of a single trunk.

We must also consider the conscious experience of the giraffe, which would encourage it to continue foraging at the top of trees if it finds the food there pleasing. Conscious experience is already a significant factor in mammalian evolution. Even if it is not explicitly stated, Lamarck's giraffe is a conscious giraffe.

In 1859, Charles Darwin, educated by his father on all theories of evolution, published his theory of the origin of species. He asserts that the appearance of new characteristics occurs spontaneously through mutation. Natural selection then takes care of sorting out and favoring the best-adapted organisms. Darwin's giraffe is somewhat like Maupertuis's and evolves simultaneously with its environment, its habitat. It eats the easiest

plants, the shortest ones; these become scarcer, and it is necessary to feed higher up; therefore, only giraffes that chance has given a longer neck can reach them. After a certain time, the giraffe must be able to eat the tops of trees. On its part, the tree can grow, as a result of the selection of the tallest species that escape predatory giraffes. Thus, two prey-predator species can coevolve, driven by chance and selection.

Discussions and debates on the subject will continue until the eve of the Apocalypse. Some scholars will propose an intermediate model between Lamarck's and Darwin's to explain genome modification. In addition to sudden, spontaneous mutations, there could be facilitated or directed mutations through the repeated and insistent use of a function or organ. Thus, chance plays a role, but so does the repeated utilization of an organ or function, which eventually leaves a trace in the molecules of life. However, no irrefutable evidence of such a mechanism had been provided on the eve of the Apocalypse.

More precisely, for some scientists, the mode of gene transcription leading to the expression of a given characteristic could have been an intermediate step (in the field of epigenetics), a prelude to the subsequent and definitive inscription in the genome (mutation induced by usage). The neo-Lamarckian giraffe would first transmit the transcription of the characteristic leading to a longer neck to the next generation, without the corresponding gene sequence having yet mutated in the genome. After a very large number of generations (beyond our current experimental capabilities), the mutation would occur, definitively inscribing the exceptional length of the neck in the genome. There would be a sort of action-reaction, as in automation (reading the genome during transcription by RNA would eventually influence the genome itself). There would indeed be mutation (after a very large number of generations), as well as selection, but in addition, the idea of the function creating the organ. This compromise hypothesis appealed to those who wanted to imbue this whole affair with a breath of life, a soul. For these 'vitalists,' the soul or life force pushed the giraffe to constantly surpass itself, and the lengthening of the neck was, in a way, the reward.

More generally, the nineteenth and twentieth centuries offer splendid fireworks of fundamental discoveries. They are quickly followed by implementation that will radically transform the way of life for men, with the discovery of all the major laws of physics supported by mathematics, each discipline nourishing the other. The promises of the scientific process with modeling are fulfilled. With free enterprise and capitalism, transitioning from

discovery to application is now only a matter of years. Of course, it is rarely the inventors, engineers, and technicians who benefit financially, but it doesn't matter. They realize their dreams. Their motivation is not greed but the urgent need to express their genius.

The path is open to the industrial revolution. All kinds of new enterprises will be created, encouraged by unlimited trust in science and in the talent of engineers and technicians educated by the educational systems. The nineteenth century is marked by the establishment of gigantic industries in steelmaking and textiles. All sorts of technological product factories flourish. Europe and then the USA inundate the world with manufactured goods. Humanity had never made so much progress in such a short time, even if we too often forget the sweat and tears of Europeans and their children in America, only mentioning the slavery of black people. But I realize, Joy, that I'm not giving you time to react. What do you think about all this?

– That it's a synthesis that reveals genius but in a context of so much brutality. If Europeans hadn't been mistreated by their religious or royal leaders, would they have succeeded as well, as quickly?

– Religious disputes may have accelerated the process, but even without them, technological progress would still have taken place. What I've tried to explain to you is that the revolution that took place in France at the end of the eighteenth century did not mark the beginning of a scientific revolution. It was already underway, an inheritance from previous centuries. The genius of Rome had endured despite what historians have recounted, and it encountered the genius of the Rhine. When I say, 'of the Rhine,' I mean the mixture of all the Central, Eastern, and Western European influences, with a strong genetic influence from the North Caucasus. You only need to look at the timeline of major discoveries to be convinced. As for monarchy, it was not necessarily the enemy of progress.

Essential discoveries and advancements were made in France during the brilliant eighteenth century. What is true is that absolutism often hindered free enterprise and thus the rapid diffusion of technological progress. The development of an innovation depended, in fact, on the goodwill of the princes. Ultimately, it doesn't matter whether Western genius was the result of selecting the best in a context of mistreatment of peoples. But wanting to deny Western genius on the pretext of egalitarianism, as some in the West did before the apocalypse, is a big lie.

Yes, Europeans and their children in North America surpassed everything

humanity had achieved before. Yes, they should have been proud of it and continued the effort instead of wallowing in the mediocrity of a consumerist society. All the dubious explanations about the success of the West, only focusing on the exploitation of peoples from other continents or mere greed, were foolish. It is true that the American colonies allowed for the development of a cotton textile industry and a sugar industry, but that was not decisive, despite what French historians had inherited from the Christian tradition of perpetual self-blame. The transformation of wool was truly European, as was the exploitation of coal with steam engines invented in France and England. As for greed, I'm talking, of course, about the role of capitalism. It could accelerate the development of technology, but it alone could not lead to scientific discoveries.

### **misguided thinking.**

*I am Joy, continuing.*

Krawn:

– Freedom is beautiful, but also dangerous if not contained, and one can get burned by it. The West has given birth to the best with the development of true knowledge, but also to the worst by letting all kinds of individuals babble and write nonsense. These are individuals who are less favored by nature in terms of intelligence, individuals who are mostly ignorant of true science, unaware of the inadequacy and simplification of their own reasoning. All of these will allow the rise of a political class that will take over from princes and priests to mistreat people. Naivety of founding texts! The Constitution of the United States of America in 1787, supplemented by the amendments of 1791, and the Declaration of the Rights of Man and of the Citizen in France in 1789, two founding texts that will be followed in the West by numerous declarations and constitutions, country by country.

All of them aim to guarantee individual liberties equal to all citizens and not just to a privileged, wealthy class, as had been established for English lords a century earlier. The movement culminates in 1948 with the Universal Declaration of Human Rights, which the West would like to apply to all of humanity. According to this text, all men are born free and equal in dignity and rights, which implies that all distinctions of race, sex, skin color, religious affiliation, and intellectual abilities are forgotten. Fine at birth, but

unfortunately, too many nations afterwards will interpret this as demanding equality for their entire lives, which is suicidal for them. Considered as natural and inalienable rights are the freedoms of thought, conscience, opinion, expression, religion, and assembly.

At the same time, the right to property, the right to personal security, the family as a natural and fundamental element of society, the right to work, education, social protection, and leisure are recognized. To enforce all these rights and guarantees, justice must be the same for everyone.

– You say that freedom can be dangerous ?

– Yes, a utopia of enlightenment, the assertion of simplistic principles ! Values and freedoms come into conflict with each other. To enforce the principle of equal opportunities, it is evident that inheritance should be prohibited! Claiming that one can express their convictions without limitations is an open invitation to all excesses. Freedom of opinion cannot be conceived wisely without moderation.

On closer examination, everything needs to be reconsidered. Building a new world required deeper thinking than simply stating the principle of equality for all and individual liberties. Safety barriers needed to be established, beliefs and religions needed to be contained, and the promotion of obscurantist beliefs should not have been allowed. By failing to establish safeguards, it was evident that humanity would fall back into its old patterns of wars, inequalities, and abuses of power, and that's exactly what happened.

The separation of executive and judicial powers is all well and good, but that is not the essential question. Under the pretext of equality, all men were considered in the West to be equally capable of judging or defending a litigant. Those involved in the justice system were recruited solely based on their knowledge of increasingly numerous and complex arbitrary rules and their charisma. What absurdity it is to entrust the role of a judge to individuals without ensuring their wisdom and morality! "In my conscience," what a fine expression! Absurd, which conscience, which soul, are they all equal? What do we think of a judgment made by a homosexual judge in a case involving the divorce of a natural family? The judgment will inevitably be tainted by subjectivity!

The reality lies in diversity, the diversity of all men who are different, unequal in intelligence but also in consciousness, unequal in wisdom, morality, and skills. By neglecting and forgetting these truths, the thinkers of the Enlightenment proposed a utopia. Democracy is an example of this. Allowing anyone to participate in an election, whether to vote or be elected,

inevitably leads to a catastrophe. A mediocre chatterbox, corrupt, deceitful, and incompetent person can rise to high political positions.

About property:

Not limiting it from the start, just like individual wealth, was an absurdity, the seed of all inequalities that would reproduce those of the time of princes and priests! What naivety! It was obviously unacceptable in the long run. This, inevitably, led to the reaction of collectivism !

– But among all that was proposed, there was still the affirmation of natural liberties. That was clearly positive, right?

– Yes, an undeniable progress. The freedom to breathe, live, move, and no longer be enslaved by anyone. Moreover, these rights could have been extended to the rest of nature, animals, and plants! Nevertheless, in the same vein, there is an aberrant freedom, the freedom to reproduce without limits. It is unbearable! Can we allow men and women who are already incapable of taking care of themselves to reproduce without even worrying about how they will feed their children or educate them? Can we allow men and women with genetic defects to reproduce when we know that they have every chance of passing them on to the next generation?

But let's also talk about work if you don't mind. The freedom to undertake should have been regulated by a criterion of common interest to society, a planning process by wise individuals to verify the validity of the decision to create a new activity. It is absurd and dangerous for everyone to be able to pursue their interests in any field they please. That's how all kinds of activities, not only useless to the community but also harmful to the environment, were able to develop, winter sports leading to the destruction of entire mountain ranges, water sports disfiguring coastal areas. Instead of convincing everyone that they would find happiness by sliding on snow or waves with a resin board, shouldn't the priority have been to encourage a return to rural life?

With all the money squandered on building stadiums and other sports infrastructure, especially the Olympics, we could have funded the establishment of a colony on the planet Mars! In 2018, debt-ridden France committed to organizing the Olympic Games six years later, which would cost three to four times more than the financial effort dedicated to artificial intelligence. The democratically elected President who made this decision was elected by only about one in seven French people. A joke? Unfortunately, not!

In the West, Mr. Dupont's word was as valuable as Mr. Durant's. Anyone could defend any project and implement it as long as they had sufficient

financial means. Censorship was prohibited.

- That would have limited freedom of speech !

- There are different types of censorship, a wide range between total prohibition and simply limiting communication on a given subject. Once again, wisdom and reason should prevail. Western society had become a big aviary where everyone could chirp at will to attract the attention of others.



Bing .com, images, create, prompt : politicians and monkeys looking at each other, watching facial expressions and gesture / intelligence qualified as affective allows individuals of mediocre pure (mathematical) intelligence to dominate others. Journalists, actors, politicians, shamans, gurus, prophets are examples.

Among these untimely chatterers were representatives of what was called civil society, common people without any knowledge or expertise, without political responsibility, but who allowed themselves to discuss any subject, including scientific ones, as if they were specialists!

One person shouted to anyone who would listen that it would be good to stop eating meat. In doing so, he disregarded the fact that Homo has been consuming animal proteins for hundreds of thousands of years. Another eccentric wanted to change his sex in the name of an allegedly inalienable and fundamental right to self-determine as a man or a woman.

Among the unconditional chatterers of Western society, journalists stood out. Instead of simply informing, they passed judgment on any topic. Priests were a dying breed in many European countries two to three decades before the apocalypse. Journalists replaced them! Along with judges, they dictated morality.

In the name of editorial freedom, they decided for themselves which subjects to cover and how much importance to give them. A completely



minor event could thus have a much greater impact than another, which was very important. Infantilization, guilt-tripping, misinformation, coordinated manipulation with politicians, nothing stopped them.

The remedy was within reach, though. It would have been enough to limit the means of distribution while providing accessible displays for everyone. Each person would have to seek information from the means of distribution on this board. Everything could be said with the only obligation to indicate one's identity and professional profile. Wide access to the internet would have ensured that no one was ignored.

### **the true power**

*I am Joy, I'm twenty-three years old, Dome Ocean, Project Nemo, April 20, 2035, day 2 of my time journey, experimental time: 0 hours 15 minutes.*

Krawn continues his critical presentation of the West:

– Let's now talk about the power of nations. Since we're approaching the cataclysm, it's interesting to revisit the strengths of the Western and Asian advanced countries. The indicators used by economists did not reflect the true power of nations: demographics, levels of production and consumption, quantity of consumed or produced goods, gold or currency financial reserves, underground resources such as hydrocarbons, volume of monetary exchanges including overvalued real estate values. All these beautiful indicators of so-called prosperity could be misleading. Thus, demographic power only existed within the prism of post-Christian West, where all peoples were free to reproduce at will and where an undeniable duty was to help and share. This demographic power had no value for a country that had renounced Western values. The threat of a migrant invasion was negligible. In a matter of seconds, the West could have annihilated them. So, what value did that demographic indicator hold?

Another example: on the eve of the apocalypse, Middle Eastern countries still had considerable reserves of oil and gas. They were rich and powerful only if we acknowledged that these reserves were their property. Consequently, they continued to exchange them for finished products, planes, cars, medicines, chickens, cheeses at a good price. From a more reasonable perspective, one could consider that the resources of the blue planet did not belong at all to those who sat on them but rather to those

who could transform them or, more charitably, to all of humanity. In this case, the indicator of natural resource reserves was also worth very little! Was it so difficult to think that other countries, especially in Asia, could start thinking differently? Why would they be wrong, and the West be right? What we must remember from history is that brutality has always paid off in the end. The Western "Occidenticide" theses about good and evil, turning the other cheek when slapped on one, forgiving, excusing, and always sharing—of course, that cannot work!

– And what are the factors of true power, according to you ?

– Joy, the very first factor is, of course, the cohesion of the nation, the esprit de corps, the feeling of being one, of belonging to a group, the certainty that everyone will be defended by others against foreigners who would show hostility without limits, the ability to act against hostile or harmful foreigners without any qualms, the evil of others for one's own good. The cohesion of diverse peoples within a nation can be achieved through war, constantly inventing new enemies (as France has always done until the Second World War), or peacefully through a great mobilizing project (building pyramids or cathedrals, walking on the Moon). In the early third millennium, a country like France on the old continent had rejected any prior selection of the very large number of African nationals welcomed on its territory, both Maghrebis and blacks.

As a result, entire neighborhoods in some cities had become areas exempt from French law, outgrowths of their countries of origin, dangerous metastases compromising the daily security of native Europeans. There was nothing to prevent these minorities from one day claiming extraterritorial status. What deterred them was simply that, producing no wealth, they needed to live at the expense of the host country. During the same period, a country like China, which was constantly growing in power, wisely rejected communitarianism. It was impossible to imagine there that any rapper would dare to sing "Fuck White President."

Among the other factors of power, we can mention the will to be the best, the first in all fields, never to let oneself be surpassed by any other nation. History is there to warn us. The annihilation of the native populations of North and South America upon the arrival of Europeans may be the result of the ferocity of a few hundred enraged invaders, helmeted and horse-mounted Hispanic soldiers, Anglo-Saxon settlers obsessed with land, or perhaps more likely, the action of newly imported bacteria, salmonella, and viruses. It matters little to know the main factor, but what we must remember

is that ultimately, the deficit of knowledge is at fault, the ignorance of the capabilities of other peoples, ignorance of diseases and how to treat them.

The same goes for the trade of ebony in Africa or the collapse of the mandarin China. The West had crushed the world with its technology. Was it so hard to understand that it could itself suffer the same fate if it let its guard down? At the beginning of the third millennium, it became evident that henceforth, hegemony would belong to the country or human group that possessed the best technology and no longer to those who held simple natural resources. Science and technology as sources of true power! This was even truer as progress allowed for the creation of increasingly powerful weapons.

When two human groups reach a deadlock, weapons ultimately remain. That should have been reason enough for all those naive individuals who thought they could survive by imposing rules and restrictions that others did not want to apply. Banning nuclear power on their own to build water and wind contraptions was irresponsible, but some European countries persisted. It would have been essential to allocate increasingly larger resources to theoretical and applied research, to create or maintain enthusiasm for science and technology, to attract the best talent to the country's laboratories, to protect discoveries without giving them away cheaply or worse, with nothing in return, as Europe had done with China. All of this, the United States of America had implemented.

When all the previous conditions are met, then strength is present. The group can have confidence. There is consensus, and the people follow, embracing the social model. They can accept the sacrifices that will lead the nation to supremacy, a supremacy that will guarantee peace.

### **the end of civilizations.**

*Continuation.*

I ask a question to Krawn:

– But before the apocalypse, was supremacy still in the West or rather in Asia?

– After every catastrophe, people always ask the same question. How could this have happened? Afterwards, historians give all sorts of

explanations. In fact, the trigger is often mistrust, doubt about the intentions of others. One also wonders how entire peoples could have been plunged into misery by a few leaders. The answer is obvious: too much power given to just a few individuals, sometimes only one, the question of choosing the elites.

Ignorance or forgetting the horrors of war, glorification of past military achievements, the deeply ingrained belief that wars would be inevitable, and that every empire, every civilization should have a tragic end, all play a role. Throughout history, men have always been fascinated by the subject of the end of times. Fascination, morbid attraction to catastrophes. The prophets of decline, deceitful malingerers, oracles, mages, astrologers, and other fanatics have taken advantage of it in the past, repeatedly predicting the apocalypse. Throughout time, eccentric individuals have capitalized on or thrived on the idea of the end of times. In the West, disaster novels and films were successful. The misfortune of others reassures, it can help make one's own condition more acceptable.

More seriously, there are predictable factors that trigger conflicts, excluding environmental catastrophes. One of the best-known is the blindness of a powerful people, the beast that falls asleep once satiated, the king too confident in himself and his army, the fatal mistake of those who forget the past efforts made by their ancestors or are convinced of the superiority of their own values, who forget that brutality has always shaped history. Thus, on the eve of the apocalypse, old Europe still imagined that its values were necessarily those of all humanity. It was so immoral and destructive to use nuclear or biological weapons that, consequently, no one would ever dare to use them one day. That's what Europe as a whole thought, which is why it gave up developing them. Once again, Europeans imagined that everyone thought like them. To preserve peace, prepare for war. Europe had forgotten this proverb.

In general, for a particular civilization to endure, apart from unpredictable factors such as natural or biological disasters, it is better for it to have a clear and superior guiding principle, pushing everyone to surpass themselves. Often throughout history, this principle has been religious in nature. Shortly before the apocalypse, the West no longer had a transcendent objective. Undermined by obscurantist currents, it had not yet dared to choose Transhumanism. As for China, the fact that it managed to catch up in such a short time had convinced it that it could itself propel humanity forward in remarkable scientific and technological leaps. Instead, being complacent in

its certainties, especially its own greatness, it allowed the West to do it all alone. After losing the monopoly on silk production and trade, which had long opened the routes to the West, the Opium Wars (1839-1860) humiliated China, forcing the Empire to open to Western trade, ultimately leading to the fall of the Qing dynasty in 1911.

All of this, the Chinese had not forgotten. Theo's grandfather, born in the late 19th century, would occasionally speak of the Yellow Peril, a time when China would seek revenge. Indeed, some Chinese began to dream of taking the leadership of humanity and replacing the USA. They understood that one of the strengths of the West in its success had been its values, but at the same time, they could also be its weak link, a matter of interpretation; the comparison of the respective evolutions of the USA and France was proof of that. If there was a need for proof of the mindset of the top Chinese leaders, one only needed to consider their attitude towards Taiwan, which was geographically separate (unlike Hong Kong). They tolerate the principle of two Koreas but not that of two Chinas.



Bing.com / create, prompt : the opium war between China and West.

When the covid-19 pandemic reached the West, many thought it was some kind of test and were immediately labeled conspiracy theorists.

– I remember that. However, to my knowledge, no one had managed to prove that the coronavirus in question was a man-made creation, I mean a deliberate creation with the intention to harm, a prelude to a future biological war.

– In the context of China at that time, it's true that there were many enthusiastic young researchers who were ready to conduct all sorts of experiments without paying much attention to the ethical rules or moral barriers of the West. So, during the invention of the first gene-editing scissors, they engaged in experiments aimed at improving humans by modifying certain genes, even though the technique was not fully mastered.

Furthermore, France, one of the leading Western countries in microbiology research, had engaged in technology transfer, once again giving away its know-how at a low cost. The political power had refused to

consider the warnings from French and American experts regarding bacteriological warfare. Thus, the Shanghai or Wuhan structures were established. The latter laboratory, built near the wild animal market (selling snakes, civets, bats, pangolins, etc.), had 250 Chinese researchers who were supposed to be supported by 50 French researchers from 2017 to 2019. At the last moment, this provision of the Franco-Chinese agreement was not respected, with the Chinese side no longer considering it necessary! It was very strange to deprive oneself of these remarkable and low-cost skills if the purpose of the research was exclusively civilian!

However, the current French president had not worried about the issue; the French specialists from the Pasteur Institute and the "Mérieux Institute" involved in the technology transfer were therefore unable to control the safety rules or verify the objective of the research conducted. These two institutions were specialized, among other things, in research on mosaic viruses, chimeras, and the question of interspecies transmission.

In the specific case of the pandemic, we are talking about, the hypothesis of the pangolin as an intermediate host had been proposed (the civet in a previous pandemic). The hypotheses of an accidental manipulation in the laboratories of Wuhan or a 100% natural contact at the wild animal market would have led to the mutation of the virus, enabling it to attack humans.

However, nothing prevented us from thinking that human intervention could have facilitated this mutation by bringing together multiple viruses in the laboratory, in other words, injecting two viruses, one from bats and the other from pangolins (if it was indeed the culprit), into the same cell. It is understood that the question of human responsibility was generally misinterpreted.

### **the eagle and the rooster**

*I am Joy, Underground, Project Nemo, the second day of my time travel journey, experiment time: 0h 18min.*

Krawn:

– Twenty years before the great catastrophe, in the West, liberal democracy was the norm, but with very different variations. Among them, two countries were at the extremes in terms of democratic vision: France with its egalitarian cult, and the United States of America with its cult of success.

Beheading those who stand out, even if they are geniuses, was the approach of the former, while encouraging creativity and allowing significant inequalities was the approach of the latter. The punishment was harsh. After a final surge of genius in the years following the Second World War, France began to decline year after year, while the USA consolidated their technological and military leadership.

For France, the decline had started in the 1980s. The responsibility could be attributed to the new President who came to power and to the consequences of the disorders that had occurred a decade earlier, which were, in fact, interconnected. Within a generation, during your grandfather Théo's time, a large part of the industrial jewels had disappeared, either sold or dismantled. Politicians always found a good explanation to harm the industrial interests of France. Elsewhere in the world, all of this would have been inconceivable; a thorough investigation would have been conducted; politicians would have been brought to justice and prosecuted.

In 2018, only ten percent of France's Gross Domestic Product could be attributed to production, compared to fifteen percent in Italy and twenty percent in Germany. Some aspects were even more worrying, such as seventy percent of the active ingredients of drugs now being manufactured abroad, most often outside of Europe, another act of betrayal.

– How was such blindness possible ?

– It was mainly due to the French political system. Once elected, the president of what was called a republic ruled as he pleased, almost like an absolute monarch. What mattered to the political class was to be reelected. The situation wasn't better at the local level. Idiots allowed themselves to finance sports facilities with local taxes collected from industrial companies established there, simply wasting money that should have been left with the companies to finance their development and create new jobs.

– Was it better in the United States? To be elected, one had to be able to mobilize a lot of money, right?

– Undoubtedly, but effective checks and balances were in place. Moreover, a member of the House of Representatives or the Senate was not alone. They had advisors in all the fields of technology.

~

## feet in the manure

*I am Joy, as I mentioned before, I'm listening to Krawn.*

– Your grandfather Theo spoke about the French rooster that sings loudly without caring about having its feet in the manure, a bird that claimed sole credit for bringing freedom to the world. At the same time, the country refused to acknowledge the alarming decline in the quality of its educational and healthcare systems. In certain disciplines, France had fallen to the bottom ranks in Europe as early as 2015. What was alarming was that it particularly affected an area where the country had always excelled. France had always been known as the country of mathematics. Either the young native French suddenly became stupid, which was genetically inconceivable, or the teachers had suddenly become bad. It was only the predictable result of a systematic attack on excellence by the destructive egalitarianism advocated by the political class, the media, and the judiciary, all supported by the generation of pseudo-intellectuals from the so-called “May 68 movement”. A media oppression had gradually taken hold. It had led to granting access to higher education to all young French people regardless of their abilities, systematically defending any primitive people, and pushing the entire society toward mediocrity. Massive insertion of children from immigration from the south into school classes, teachers being obliged to give good grades to all students regardless of their actual results, and the prohibition of maintaining discipline.

– Was he exaggerating ?

– He had taught his whole life in France and Africa at all levels. So, it was difficult to challenge his expertise. In France, your grandfather had taught at the middle school and high school levels, then at the university, in both classical and technological fields, and even in top engineering schools, one of the few remaining jewels of the French education system according to him, one of the last places where one could only enter with real abilities. These places of excellence were constantly under attack by those in power. Unable to dismantle them immediately, as Theo always said, politicians focused on undermining the teaching of real sciences, especially at the high school level. Perhaps it was a joke, but he sometimes said that at this rate, successive governments would end up condemning or relegating mathematics and physical, chemical, and biological sciences to second-tier status! How? By adopting a kind of soft-core curriculum consisting of French language, philosophy, history (except for the history of science, of course!), geography,



foreign languages, and, of course, sports, while offering mathematics, physics, or biology as elective courses!

– So, according to my grandfather, politicians were the main culprits ?

– Without a doubt. Artificially keeping young people in the education system meant they were no longer counted as unemployed. This helped to hide the loss of production jobs. Gradually, a devastating cycle had been established. Secondary school graduates trained in useless or artificial fields demanded to continue at the university, and there too, it became necessary to create fields of study that served no purpose. To top it all off, the world of work was also pushed to create jobs that were pointless. What else could be done with all these sociologists, psychologists, specialists in all kinds of human relations, or other soft-skilled graduates? The most pitiable were the members of the middle class, the driving force of the country: educators, doctors, nurses, researchers, engineers, technicians, not to mention farmers. Work and intelligence stifled by the chaff! A simple nanny or housekeeper was paid almost as much as a novice nurse. A hospital doctor was subject to the whims of a small administrator with no medical knowledge!

– So, is it indeed egalitarianism combined with too rapid African immigration that was responsible for the decline ?

– Yes, and in the name of ideas received from an intellectually corrupted education system, I mean ideologically speaking. When everything is considered equal, everything that is written or said, when we must respect all political choices, when all cultures, religions, and beliefs must be put on an equal footing, when the raw beat of primitive peoples' drums or the rap of failures are admired just as much as the classical symphony of a great German composer, when we are enthralled by a raw object from Oceania or Africa just as much as by a sculpture by Michelangelo or Rodin, when all professions are considered equal, when a researcher or academic is not respected any more than a tattoo artist or banker, when the mere assertion of factual differences, some of which are scientifically measurable, can become an offense punishable by law, when everything is considered the same, what becomes of excellence? Of course, Theo was right.

*I am Joy, the Machine propels me into a French polling station in May 2017.*

Sunday, in a public primary school. The queue stretches out onto the street, with women and men, more elderly than young. Inside, on the side, the head of the polling station and the assessors. In the middle, a transparent plastic ballot box. One of the assistants is carefully examining the identity

papers of an elderly lady. He checks her presence on the voter list, she takes the paper ballots featuring each of the candidates one by one, then enters one of the individual voting booths. With the curtain drawn, she places the chosen ballot in an envelope, exits, and slides the envelope into the ballot box. The assessor then utters the customary phrase: 'voted'. She signs the register, and her identity papers are returned to her. The same ritual takes place in all cities and villages in France. The old lady is aware that she has fulfilled her duty. On leaving the polling station, she talks to a friend, lamenting the absenteeism of the young. At least she made the effort to come and vote. Truth be told, she would be completely incapable of describing the program of the candidate she chose, but that is the case for most voters, unable to explain how this program, assuming it is implemented, would improve their own situation, that of their children or grandchildren. In politics, a promise binds only those who believe in it. In any case, the old lady doesn't have sufficient knowledge to understand.

She is not very wealthy, cared for but modest, probably a retired middle-class person, part of the generation that the past left-wing and right-wing presidents have consistently mistreated. The candidate she opted for claims not to be left-wing or right-wing. That's reason enough. She doesn't want the far left, remnants of communism, horrors of the Gulag, the terrible deeds of Stalin, bad manners, and besides, the left is well-known for squandering public finances, being economically inept. On the other side of the world, the far right, racists, Nazis.

She knows well that immigrants from Africa are a disaster for France, that the poor academic performance of students is partly because of them. They often disrupt classes, misbehave, show no interest in anything, and are even rude to educators. They are uncontrollable, and her grandchildren suffer from them every day. If her daughter could afford it, of course, she would choose a private school.

The old lady also knows that drugs, at eighty percent, are also their doing, and that North Africans and Black people are predominantly represented in French prisons, even though it is forbidden to say so. The justice system that easily acquits them would immediately pursue charges of racism! However, she is a Christian; she must love her neighbor. She has been constantly made to feel guilty about slavery and the Algerian War.

She does not want to acknowledge that there are cultures that encourage mediocrity or even wickedness. In short, these far-right people are bad French citizens. At least the young man running for office looks promising.

In any case, they all lie, promising mountains and miracles. For all these reasons, she finally voted for him. What she does not even want to consider is that it will not fundamentally change the way France is governed. Very soon, the young and new president, like his predecessors, will crush the middle class and retirees, continue to mistreat civil servants, the state agents who ensure education, security, or health, continue to destroy the healthcare system, the education system, and the army, and further indebt France to please the financial elites. Soon enough, he will explain that wealth is necessary and a guarantee of the future.

Of course, he will take great care not to distinguish between the wealth generated by finance or trade and the wealth linked to genuine production or cutting-edge industries. The old lady is unaware that he was behind the scenes, orchestrating things during the time of his predecessor when decisions were made against the long-term industrial interests of France. He will continue not to differentiate between promising sectors and luxury products. He will know how to maintain control over the main media outlets by buying off wealthy owners of major press groups as well as the journalists themselves. The latter will enjoy privileged tax regimes, while the owners of major media outlets, the press, television, will be exempt from paying wealth tax as a reward for their well-aligned editorial choices.

By the end of 2018, the old lady will witness spontaneous gatherings in cities across France, bringing together white men and women in their forties and fifties of old European descent. At least they have understood the media scam of the presidential election. They are also humiliated by the lying speeches of a president who calls them privileged in front of their children. He seems to ignore that they worked much harder than today's youth. The latter couldn't care less. In these manifestations of despair from forgotten, squeezed middle classes, the old lady might also notice that there are no Blacks or North Africans, the big winners of the new French society, but also no young French people of old European descent. Ingratitude!

At the same time, healthcare personnel will continue to sound the alarm, but always in vain, about the catastrophic situation in hospitals. By voting like this, the old lady never imagined what would happen to her at the beginning of 2020. In late 2019, while the pandemic was raging in Wuhan, the president was busy privatizing the French lottery company (Loto), an operation presented to the people as a blessing.

In January, he was now trying to persuade the French that selling off other gems like the state's stake in the company "Aéroports de Paris" or "les

chantiers de l'Atlantique," which was then building the world's largest cruise ships, would be a good deal for them. The appetite of the strangers and wealthy supporters of the French government was insatiable. Its predecessors had sacrificed, destroyed Pechiney, world leader in aluminum, Alcatel leader in telecommunications, as well as other French jewels.

Common sense would have dictated privatizing the national railway company and keeping the previously profitable activities. It was clearly a case of predation, surrendering everything that was profitable at the time to private interests, acting like a king! At the beginning of the pandemic, faced with urgency and in a panic, the government failed to take the necessary measures, including a total lockdown, for both staff and residents in facilities caring for the elderly. The elderly would pay a heavy price, especially her. The old lady, infected, eventually died herself, without even being allowed to see her loved ones, abandoned and without any palliative care.

## **domination**

### *I am Joy*

Krawn continues to comment on the spectacle provided by the Machine, with images of America's greatness, prestigious universities, research laboratories, hangars where space rockets are assembled, the enormity of the facilities, economic and military domination.

– After the rooster, the eagle and its cult of success. Being the first everywhere. It was not only about individual success, often highlighted by observers of American society, but about the success of all because this country still had a very strong cohesion. In the United States, even those who hadn't succeeded could rejoice in the overall success because they knew it would benefit their children. America first, by any means necessary, whether through brutality or money, it came down to the same thing. At the beginning of the twenty-first century, the USA was an unrivaled superpower, dominating the world, *pax Americana*. For what reasons? A lot of intelligence, genius, inherited from their ancestors from the Old Continent, but also brutality, even though it was preferred to be called strength in America.

From their arrival in what would become the USA, European settlers had shown great brutality. It became ingrained in their customs and behavior. Every citizen could possess a weapon to defend their property and family,

and the police were respected. Those who did not comply quickly during checks knew exactly what to expect, as did those who attacked a police officer.

This situation was the opposite of France, where thugs of diversity systematically refused to obey, had no fear of assaulting law enforcement, firefighters, or healthcare personnel in entire neighborhoods, those of the "dark France." There, the state hardly intervened except to distribute various social aids and support various associations. In exchange, one could hope for no riots.

This difference between the USA and European countries was visible in various areas. In sports, American football was much more physical than English soccer. In cinema and television series, the era of Westerns with cavalry charges and massacred Native Americans, settlers' wagons racing across the plains, had been succeeded by car rodeos and increasingly brutal scenarios. However, despite their violent content, most films or series ended with a moral lesson, unlike European productions, defending America, defending the weak or family.

There could be no domestic order and no international leadership without a certain level of force, often involving brutality. The USA understood this well. Winning at all costs in every domain. When another country offered a better product or one not yet developed in the USA, they would do what was necessary to boycott it, allowing time to copy and improve upon it. Extreme brutality in a democracy whose mechanisms were lubricated by money. Your grandfather Theo called it a "moneycracy."

– Yes, I remember. He attributed certain characteristics to different Western countries: brutality and pragmatism for the United States of America, egalitarianism and ridiculous pride for France, discipline and stubbornness for Germany."

– One application of American pragmatism was the need for wealthy and powerful individuals for the nation to be powerful. Therefore, they allowed large fortunes to accumulate, even turning a blind eye to the different tax rates between states if necessary. Political leaders knew very well that they needed billionaires to finance their upcoming election campaigns. In doing so, candidates of all political stripes depended on the wealthy. Americans were not fooled, but the system worked."

The country was powerful; every American, wherever they were on the planet, was defended; their life was worth more than the life of any other citizen in the world. At the beginning of the third millennium of the West,

they could be proud and confident, just as a citizen of Rome had been at the height of the empire, in stark contrast to the European citizen, worried and humiliated. Being born in North America was a stroke of luck. The economic results were there, thanks to triumphant laissez-faire capitalism, superpower by the super-rich, money as the main catalyst for mobilizing energies. Despite this realization, according to Théo, the capitalism was just a detail in human history, a stage like any other that, when pushed to the extreme, would lead to a dead end. What mattered more to him was the consideration North America gave to science.

– But getting back to the main point, you still haven't clearly answered me about the question of supremacy.

– About ten years after the COVID-19 pandemic, China and the USA were roughly on the same level militarily concerning weapons of mass destruction. In the event of a global conflict, the Yellow Dragon believed it had a chance to prevail. It all started around 1980 with a massive catch-up program targeting the West. The entire country was set in motion. This was made easy given the grip of the Communist Party that kept the country in line. The various succession disputes among the red princes, sons of previous leaders, did not compromise the adopted strategy: a form of capitalism with party-planned development directions.

The successes came quickly. Initially, it was mainly technological plundering at the expense of a profit-obsessed West. Occasionally, the masters of China would give some reassurance about eventually adopting a democracy model like that of the West. This allowed Western leaders to appease populations faced with the disappearance of entire industries due to unfair competition. Smoke and mirrors! None of the top Chinese officials had changed their minds. Their goal remained the same: to seize leadership from the USA.

In the economic realm, China's project of opening new Silk Roads was meant to firmly establish its trade. On the military front, an extremely ambitious program had also been launched. From 2017 onwards, China began asserting its power on the international stage, even opening a military base in East Africa, in Djibouti. This was the first alarm, as presidents and general secretaries of the People's Republic of China had previously stated that they did not seek to establish bridgeheads beyond their territory.

Another worrying sign had been the revelation of an internal document attributed to the incumbent president, openly criticizing the Western democratic model, its foundations, and values. The hope of seeing China

adopt democracy had vanished. The Chinese president had also promised his citizens that China would surpass the United States by the year 2049.

– And did the Chinese population support this project ?

– Yes, overall. Opponents were pursued, but the standard of living was increasing. The program was progressing even faster than originally anticipated, as by the 2030s, based on the count of land, naval, aerial, and space weapons, China and North America possessed comparable forces.

As for Europe, it simply faded away in the military domain. You know that after World War II, the US took advantage of the rivalry between the two superpowers, America and Russia, to create NATO, the North Atlantic Treaty Organization. The defense organization led by the US brought together the main countries of Western Europe and was supposed to protect them from a communist Russian invasion. Germany, once so powerful but responsible for Europe's decline due to its warmongering madness, had discovered a pacifist vocation.

After the disintegration of the former Soviet bloc, the US managed to maintain the treaty even though it no longer had a reason to exist, as a means to prolong the vassalization of Europeans. It was also a way to sell American weapons under the pretext of necessary standardization of combat units that should operate together in case of conflict. The United States regularly criticized certain European countries for not sufficiently funding NATO while intentionally omitting to mention the American sales made at the expense of the European defense industry.

– And the economic domination ?

– At the beginning of the twenty-first century, it was no longer possible to dissociate the economy from research. Innovation had become essential, and the US understood this perfectly, so science was cherished. Enormous resources were mobilized for both civilian and military research. Universities operated like businesses, collecting tuition fees, donations, and research contracts. All of this contributed to providing them with immense means, to the point that it was not uncommon for a large American university to have an annual budget equivalent to that of all the universities in a small or medium-sized European country.

Research of all kinds was conducted, with thematic freedom and the possibility of expression in all areas, and it was often from previously neglected fields that advancements emerged. North America was an extremely effective talent attractor; it had replaced the European countries during times when everything was invented in Italy, France, the Netherlands,

England, or Germany. Mass European immigration had ended, but many graduates from the best scientific programs in Europe continued to flock to the US. Numerous talents from India also joined them. In addition to attracting the best minds, there was systematic espionage of the main scientific and technological research laboratories in Europe.

– Could Europe have had a chance again with artificial intelligence ?

Undoubtedly, but once again, it did not react sufficiently, led by a blind political class. A reversal of history! The forgotten and damned from all over Europe who had left for the Americas in the holds of transatlantic ships had returned as conquerors. After the war of '39-'45, they had gained control over the European economy directly or indirectly. It began with the reconstruction of an often-dilapidated industrial tool, and American capital took control of numerous production sites. In the minds of American leaders, Western Europe was now destined to be a market, a consumption zone for products from companies controlled by them, nothing more.

The grandfather of Theo used to manufacture silk stockings in a factory in eastern France before the last war, stockings with a seam at the back of the leg. After the war, stockings made in North America no longer had a seam. Disqualified, he had to sell to an American group that acquired the brand and customer base. Before the war, he himself had contributed to the disappearance of artisanal weaving in countries like Tunisia, where he sold cotton shrouds, among other things. History repeats itself !

– In the end, Europe would almost have had an interest in aligning itself with the American banner.

– A dream, it would have been unmanageable, especially with the French rooster criticizing the American eagle at every opportunity! The United States of America did not want to participate in certain international programs on the environment, but at the same time, renewable energies were considerably more developed in California than in France as early as 2017. Electric vehicle production was about to explode.

International agreements are made for the weak, as is well known! America knew what it had to do. Everything worked with money, so what? In the absence of a clear position, France began a phase of accelerated decline. The French believed they could enjoy the benefits of capitalism in terms of material well-being and those of collectivism in terms of social protection. In a context of fierce international competition, this could only lead to impoverishment.

– Only one winner in all of this, of course.



– In the West, yes, and while American capitalism may have seemed odious in some respects, there was, however, a new class of billionaires interested in science, a new hope for humanity.

*I am Joy, just Joy, outside of immersion.*

It seems like, yes, of course! It's some kind of test. The Machine is testing me; it wants to know what I think, it encourages me to react. Moreover, I can't even lie to it anymore. A name is injected into me, Alexis de Tocqueville. Ignored in his time in his own country, France, which was one of the main attractors of genius in Western Europe, he delivered a relevant analysis of the American mentality. Rereading some of his sentences, I realize that it is indeed the impossible balance between the concepts of individual freedom and equality that explains the accelerated decline of France since the 1980s. If I were asked to summarize the assessment of the West in a few words, I would describe it as remarkable in terms of the advancement of knowledge but catastrophic in terms of the consequences of the unlimited application of the foundational values of equality and individual liberties held in the 18th century, the Age of Enlightenment. No civilization has contributed so much to humanity in such a short time; however, the almost limitless individual freedoms have allowed the capitalist system to accelerate the destruction of the blue planet by humans. The Western system has led humanity to a dead end and ultimately to an apocalypse. The West stubbornly refused to question its values. The rising Asia saw this and planned to take advantage of it. This confirmed its belief that the 21st century would be theirs.

Two centuries after Tocqueville, it was indeed the way of achieving the impossible compromise between equality and freedom that made the difference between the triumphant USA and the rapidly declining France.

**Nations nowadays cannot exist without equal conditions within them; however, it depends on them whether equality leads them to servitude or freedom, to enlightenment or barbarism, to prosperity or misery.**

(From *Democracy in America*, 1835).

In 2020, French democracy had become a dictatorship of the majority, one of the risks highlighted by Tocqueville at his time, a mediocracy crushing the best.

**Indeed, there is a noble and legitimate passion for equality that incites people to want to be strong and esteemed. This passion tends to elevate the weak to**

**the level of the great, but there is also a depraved taste for equality in the human heart, which leads the weak to want to bring the strong down to their level and reduces people to preferring equality in servitude over inequality in freedom.**

(same source).

The relentless pursuit of egalitarianism since the 1980s had led France to an unprecedented decline. On the other side of the Atlantic, the USA had prioritized freedom, allowing Western excellence and genius to continue to thrive. The Machine still challenges me with another quote.

**The European race has received from heaven or acquired through its efforts such undeniable superiority over all the other races that make up the great human family that man placed among us, by his vices and ignorance, at the lowest rung of the social ladder is still the first among savages.**

For my part, I acknowledge that the genius of the West has indeed been acquired through terrible trials, which have selected particularly intelligent, enterprising, and efficient peoples on the old continent; their American offspring continued the same path. But the European peoples have not received anything from heaven; they have only endured so many trials that only the best have survived.

The COVID-19 pandemic had allowed the resurgent China to test the resilience of the West. It already suspected the state of decay in France. The catastrophic handling of the crisis only confirmed this reality. In a major conflict, the country wouldn't even resist. On the other hand, China also understood that it wouldn't be as easy with the USA. While it is true that 400,000 young Americans had skipped the pleasure of witnessing the first steps on the Moon, opting instead for easy pleasures at the Woodstock festival, they eventually came to understand the remarkable effort made by the other 400,000 adults, their parents, who participated with NASA in this unprecedented adventure. The America of 2020, affected by the pandemic, still knew how to dream and believed in science; it also knew that a certain level of brutality was still necessary, the importance of military power and technological leadership. This America would not easily yield if one day it became the target of China. The French youth, on the other hand, had never recovered from the upheaval of May '68.

*Here are some thoughts from Theo, small pieces of paper written in Pointe Rouge on the theme of equality or freedom, highlighting the differences between the USA and France.*

France, the welfare state, infantilization. The principle of donations is essential for Americans. It is a means to exercise their responsibility, to choose whom they want to help; donation is an individual decision. This act retains its moral value. In contrast, in France, one could consider that it is the state that decides on most of the aid provided, worse still, a state increasingly influenced by egalitarian thinking. The volume of voluntary donations decided by the French remains minimal. There is no longer any means to exercise any control since ultimately only the president-king decides who will be helped or not. This automatically leads to widespread aid that is often undeserved. The state replaces the citizens, decides for them, and infantilizes them; it is a reduction of individual liberties contrary to the essence of democracy, which would suggest that everyone should be able to express their opinion and choose. The welfare state is a form of socialism, inspired by egalitarian thinking, which, when taken to the extreme, leads to communism, the dictatorship of a few imposing sharing, a sort of deviant (non-individual) Christian charity monopolized, confiscated, and exercised by the sole leaders of a country who then believe themselves to be messiahs! Another negative effect of overly generous social distribution is the diminishing importance of traditional family ties.

USA, excessive individualism? The French rooster regularly denounces the possibility for every American to own a firearm, citing various acts of violence. French journalists show malice and lack of understanding when dealing with the subject. If they were willing to consider acts of violence in France, the number of innocent people injured or killed by criminals because they couldn't defend themselves, attacked simply because they are unarmed, then perhaps they would start to doubt. Once again, French citizens are deprived by the state of a natural right, the right to self-defense, under the hypocritical pretext that the state effectively defends them, which it no longer does. In 1940, unarmed French civilians had to flee from German troops due to the cowardice of politicians who practically orchestrated the defeat. An armed France could have organized resistance around the few courageous generals who refused to surrender. The cult of individual success is a driving force behind American behavior. Knowing that one can succeed alone, without the help of a welfare state, is essential, even if it is just a humble small restaurant or business. There is pride in having succeeded on one's own. Once again, it

is a matter of morality. At the same time, the French have an increasing tendency to expect help from the state; what is alarming is that they no longer consider this humiliating. The French citizens of 2020 are like domesticated animals who only obey. However, a negative aspect of the entrepreneurial freedom necessary for the realization of the American dream is the possibility of engaging in any activity. This is where the federal government must intervene by defining major projects for the country, as was done during the conquest of the moon.

~

## WEST

### IN BLACK AND WHITE

*I am Joy, I'm twenty-three years old, Underground, Project Nemo, Ocean Dome, April 20, 2035. Day two of my time travel, experiment time: 0 hours 23 minutes.*

Aunt Jill disconnected me. I am myself and only myself, still semi-lying on one of the two seats in the ocean dome. She enters the room, pale complexion, large bluish circles under her eyes as if she had been crying; she kisses me.

– Are you okay, Joy? Are you not feeling tired?

– No, don't worry.

– I ask you because what follows will be more personal. It's your own family that will be involved now, you will explore the thoughts of some of our relatives. You will immerse yourself in the life of Theo, your maternal grandfather, but also your own parents.

I reassure her with a smile. I feel strong and I have no intention of stopping, I want to go all the way. Suddenly, all of this seems much more significant, much more important than a simple initiation trip meant to introduce me to the Machine, even though I still don't know exactly what it is.

– So I'll leave you again with Krawn, or rather his appearance. He will continue to monitor the progress of your journey with me, I'm going back to my post.

Aunt Jill returns to the control room. The brightness of the room starts to change and takes on a pearly purple color that highlights the details of Krawn's avatar even better. The diving indicator activates. I feel the impatience of the Machine within me, enough talking! It's time to dive again. Could it be possible that it's starting to exhibit human-like reactions? I almost feel like replying that I'm ready, but I keep silent, and so does Krawn. Some very slight tingling, nothing to worry about. All vital signs are in the green. Here we go again, and this time to immerse myself for a few moments in the life of my grandfather Theo.

## Oubangui

Brutal Africa.

*A major avenue in the middle of the city, at the edge of the administrative district just after the government buildings.*

It's 9 PM. A bar with a large terrace that extends onto the sidewalk. Theo is sitting at a table, across from him another white man, Jean-Michel, all the other customers are Africans. Nowadays, white people stay at home, and besides, it rained in the afternoon, a brief storm signaling the start of the rainy season. A few cars drive on the road. Tens of thousands of winged termites swarm around the few streetlights that are still working. The children are having a party, most of them ragged. They rush to grab the insects, tearing off their wings and stuffing them into plastic bottles. Occasionally, they eat one, the rest will end up grilled with salt and chili. Jean-Michel has only been stationed in the country for six months. Like Theo, he works for the French technical assistance program set up in the 1960s after the country gained independence. Both oversee education support projects funded by France, with a few dozen other French assistants working alongside them. Jean-Michel is involved in secondary education up to pre-university level, and Theo is responsible for a higher education support project. In France, the two comrades probably wouldn't have interacted, too different! It's only their status as expatriates that brought them together. Jean-Michel, a graduate in English literature, previously held cultural leadership positions in East Africa, he loves theater, especially Shakespeare. Theo is a physicist, an academic with research experience. I'm witnessing their conversation. Jean-Michel is the one speaking.

- The first serious storm ?
- Yes, the rainy season is coming.
- Do you come here often ?
- I used to come from time to time with your predecessor. Back then, it was very lively, but that was before the events.
- I ask you that because there are no white people here except us.
- They stay holed up at home.
- I was told about a horrible situation, but I think I'm going to like it here. People seem friendly on the streets and at work. I don't feel the rejection of France that is often talked about.

– It's true : the population as a whole is not hostile. French journalists only want to focus on the authorities' statements, and it's almost a game here, whenever there's a difficulty, it's France's fault. To get back to what you were saying, it's true, the population is welcoming. If you could travel to the provinces, you'll see that it's even more true. The people here are not difficult; they appreciate order and mostly aspire to civil peace. They experienced a relatively happy period after independence, like all the other countries decolonized by France. I'm talking about the years from the 1960s to the 1990s. It probably wasn't democracy; military regimes succeeded one another through coups d'état. You had to obey, but overall, people lived well.

– You can't defend those harsh regimes, though. They were harsh, but France tried to moderate their excesses as much as possible. It was still better than what followed. Despite some often-exaggerated missteps in the French press, the country was doing relatively well. There were functioning high schools and hospitals in the capital and major provincial cities, and there were dispensaries throughout the country. The French army ensured the security of remote areas. They eliminated the "zaraguinas," those road-cutting assassins who wreaked havoc in the bush and terrorized villagers. There was also some economic activity, small businesses, boilermaking, metal construction, and building, often led by French people. The Lebanese were in trade, very useful as well because they knew how to activate corruption networks, something the French were reluctant to do themselves, but in certain cases, it was unavoidable. Furthermore, at that time, French technical assistance was present in all important sectors to support African executives who often had studied in France. People believed in development and in Africa's future. Everything deteriorated when France itself started doing whatever it pleased in the 1970s and 1980s after the "little revolution.

– You mean the events of May 1968 ?

– Exactly.

– I gather you weren't out on the streets.

– I was, and I can assure you that there were hardly any physics, chemistry, or life sciences students. Those causing the disorder had read too much and misunderstood Rousseau, Zola, or even Victor Hugo. There were also some math enthusiasts among them, but you know how it is, they were often disconnected from reality. All these protesters thought they were denouncing the unacceptable, fueled by philosophers detached from reality, incapable of shining in academia but who had found favor with the new media, especially television, where ignorant and stupid journalists were

impressed by their speeches. They understood that they could thus make a name for themselves at little cost. Mediocrity began to raise its voice, including in the political world.

– But what does that have to do with the situation here ?

– It's quite simple, really. For me, the May 1968 movement can be summed up as an eruption of mediocrity, the first one after the war. It paved the way, about ten years later, for the arrival in power in France of narcissistic, cynical, mediocre, and incompetent politicians. As soon as they took office, they started manipulating the concept of equality, distorting it into egalitarianism. Their objective was clearly, when you look at the state of France today, to level everything down, gradually removing the French people's capacity for decision-making or demonstrating their own excellence. As for the former colonies in Black Africa, successive French presidents demanded, in exchange for continued French aid, that democracy be applied to the letter. According to them, a resident of an underdeveloped country was supposed to behave like an average French person. Whether they came from the bush or had been educated, it didn't matter. One man, one vote! What had to happen, happened, as in France but in a more serious manner. The most mediocre or the easiest to deceive voted for a mediocre president, and the entire country's balance was challenged. France's African policy has also largely served political maneuvers during presidential elections.

– You're thinking about the Bangui diamond affair, I suppose ?

– A non-issue exploited with the complicity of the French media, sidewalk rumors as there have always been recurrently in Bangui. In France, you know very well that there are no real sanctions against journalists who spread lies; they can act with complete impunity.

– So, you think it was a setup ?

– Of course ! Everyone here knew certain habits of the president. In the past, when the country was prosperous, it was common for the head of state to offer a "sweet" like Coca-Cola with a small, usually low-quality rough stone at the bottom of the bottle. This gesture did not affect the country's resources in any way. When a foreign president came with his wife, it also happened that he would offer a diamond. It was natural for him. At the same time, French presidents themselves gave gifts to their counterparts. From there to handing over suitcases full of gems to the French president, it's even more ridiculous considering that the supposedly generous donor died penniless. Would he have distributed without thinking about himself and his family first?



What is serious in this case is that in France, it tipped the election. The accuser without evidence became the head of the French state.

– That's how democracy works.

– But it makes no sense ! Every time an abnormal or doubtful event occurs, as serious as questioning the integrity of one of the candidates, then the election should be postponed until all controversies are settled, unfounded rumors are denied, and even better, until the justice system can make a ruling. Otherwise, elections are just a farce, and the elected person may be the legitimate president, but not the ethical and moral leader of the state. They can always claim the election, but it's more like a coup d'état, especially serious in France where power is concentrated in the hands of the head of state, with the French Parliament having a minor role.

– Getting back to the situation here, what do you think ? At the Ministry of Foreign Affairs in Paris, I was told that everything should work out.

– If the salaries are regularly paid to the civil servants, probably yes, half the city depends on that. But there are uncertainties, the pie to be shared is small. The mines produce magnificent gems but are difficult to control. To enrich themselves personally, the president and his close associates could decide to directly deal with specialized private foreign companies in the diamond trade, such as those from South Africa, for example. In such a case, there will be almost nothing left to redistribute to the population. Another risk is that the current president is obsessed with coups d'état. According to certain sources, he even believes that the former president from the dominant ethnic group in the country is trying to overthrow him.

– And how was it last year ?

– What could I tell you that you don't already know, at least in general terms ? When he came to power in 1993, the president revealed himself to be involved in shady dealings. He changed the composition of the presidential guard by favoring his own ethnic group. The military from the former dominant ethnic group felt marginalized and held resentment. Furthermore, there were recurring salary delays, and everything exploded. In April 1996, there were widespread looting. Many French people lost everything – their homes, personal belongings, businesses. The economic infrastructure was largely destroyed, and French technical assistants were evacuated. Some had to take refuge for hours in bathtubs, which were still made of steel at that time, to escape the indiscriminate gunfire aimed at various targets! Calm was only restored with the intervention of the French

army. The contingent based at the airport intervened, and there were bombings targeting the city center where the mutineers were located. In addition, a one-time financial aid was promised to partially pay the salary arrears. However, it couldn't solve anything in the medium and long term. The departure of French business leaders would have catastrophic consequences for employment.

– I also heard that the French cultural center was destroyed.

– Yes, it was a strong symbol that greatly contributed to the discouragement. The building was looted, set on fire, and destroyed down to its foundations, even for the purpose of extracting underground pipes! The surviving French books were scattered in the streets, soiled in the gutters. You can imagine the reaction at the embassy since you have worked in the cultural services yourself.

– But you returned after just a few months.

– I came back for observation, along with a few other technical assistants. We could be counted on one hand, nothing like the hundreds of cooperants who used to work in the capital.

– It must have been tense when you arrived.

– Do you want to know what awaits you ? I'm just kidding, of course. As you have probably read, they repeated the same scenario. The third mutiny broke out in mid-November, a few weeks after I arrived. French reinforcements were sent from Chad. There were probably two thousand French soldiers deployed here in Bangui. The situation was deteriorating day by day. Some isolated sporadic actions took place. For example, in early December 1996, there were rocket launcher attacks on the grand hotel by the river and hostile demonstrations against France in the city center. But it was in January that everything went off the rails with a much more serious incident. It's hard to say if it was provocation or frustration, but in any case, two French soldiers who had come to negotiate in a civilian vehicle were shot in the back. It happened not far from here, in the neighborhood between the Ministry of Education where our ministerial advisor offices are located, and the river. The area is bordered to the east by the river port, the brewery, and the telecommunications center, all controlled by the mutineers. The French reaction was strong. For several days, fighter jets and helicopters had been flying low over the city, serving as both intimidation and aerial reconnaissance of the enemy positions. One evening, the electricity was cut off, and the commandos attacked, supported by one or more combat helicopters. The problem was resolved very quickly. After that, calm was

restored.

– You lived in the city center ?

– Yes, and in early December, heavy machine gun bullets, caliber 12.7, were whizzing around the building. The mutineers were shooting from the hill just above the French embassy. At the bottom of my building, there were French commandos supported by an armored column. Some soldiers were so young that it felt like being in a war movie. They asked us to take refuge in the concrete stairwells. The mutineers also fired mortars from the northern suburbs of Ouango, in an arc, reaching the maximum distance possible. One shell hit the French officers' mess, another hit the courtyard of the French school, both located right in the city. Fortunately, most of the other projectiles fell into the river.

– In such a context, were you still able to work ?

– I won't tell you it was easy ; that would be a pure lie.

– Why ?

– In addition to the ongoing civil war, my relations with the university rector started off on the wrong foot. They were tense even though I wasn't responsible in any way. He felt superior and didn't understand why they assigned a French advisor to him. Moreover, he had received his training in Quebec. Competition in the field of development! Our "cousins from the cold" were assisting with very targeted projects, providing the necessary resources, including compensation for local African collaborators. I must say it was a good strategy, a pragmatic point of view.

On the contrary, the French technical assistance aimed to intervene in all areas, with an increasingly meager financial allocation. The rector knew it, the French cooperation did not provide any possibility of compensation for the African academic colleagues involved in our development projects. At first, I didn't even have a decent office. It was like talking to God instead of his saints!

From the day I was appointed as an advisor to the Minister of Higher Education, the rector changed his attitude. I believe he also understood that my only motivation was to truly support the development of the university. No one believed in it anymore, neither in Paris nor on site, but I still prepared the project. We had to find premises, which was the counterpart of the country for the French financial aid. It wasn't easy. At one point, the rector thought of using what was then called the "Palais de la Roumaine," the residence of one of the wives of the former Emperor Bokassa, located on the edge of the river, south of the city. There were large wooden buildings in

fairly good condition; they could have easily housed educational structures.

– I heard about it, the lions, the cold rooms, the luxury.

– As usual, the journalists were talking nonsense. In terms of luxury, apart from the marble bathtub shaped like a seashell, there was a swimming pool that could have belonged to many expatriates in Bangui and a small animal park with two big cat cages. There was really nothing remarkable, just an exotic setting where four or five large wooden buildings were nestled.

We abandoned this site after the mutiny the year before you arrived, for two reasons: it was in a so-called rebel zone, and it seemed too remote for the students. While waiting to find other premises, I focused on organizing continuing education modules for medical and paramedical personnel. We had to organize dozens and dozens of internships under difficult conditions.

Even the Dean of the Faculty of Medicine was constantly threatened because he belonged to the ethnic group from the river. It was very serious. I remember one day when I went to see him in his office. When I arrived, I found his door partially smashed. Very shaken, he explained to me that a soldier from the presidential guard had come to threaten him. After forcing his way in, holding a grenade in his hand, the soldier demanded that one of his cousins, who had failed the exams, be declared passed, just like that!

The aggressive behavior of the presidential guard was no secret to anyone. In fact, a little later, there was a tragedy right next to the building where I lived. One evening, a captain who had played and lost his soldiers' pay at the casino came to see one of the white owners of the establishment. It was in one of the neighboring warehouses. He came to reclaim his lost bet, also with a grenade in his hand. The white man refused and grabbed his hand. He died because the grenade exploded; it also blew off the guard's hand. But a year later, he was free; it was commonplace at the time!

– Did the ministry eventually fund your project ?

– Yes, and new technical assistants came a year later to support its functioning. On the cultural side, we also injected financial resources to build a new structure to replace the old French cultural center. The situation has calmed down so far, and you can hope to work under good conditions, except that salary arrears are likely to affect the functioning of high schools and therefore your own activities.

*Immersion: I am Théo, my grandfather, Bangui, Central African Republic, May 28, 2001.*

I am at home. The reception is over. The garden is still illuminated, the

lawn, the flower beds with hibiscus, lantanas, and bird of paradise flowers. In the background, there's a dugout transformed into a planter overflowing with exotic flowers. To its left, a large grove of bamboo frequented by small, bright green and highly venomous snakes. To its right, a soursop tree.

Everything went well. I don't like invitations, but as a project leader, I feel obliged to host at least one or two every year, with about forty guests each time. Now, there are barely a dozen left, spread between the terrace and the spacious living room, which is wide open to the garden for the occasion. The cultural advisor from the embassy has already left.

While I'm talking to the Minister of Higher Education, he receives a call, apologizes, and walks away into the garden with his bodyguard. A few minutes later, he returns and takes his leave. He explains that he needs to go to the presidency. It's quite late, though! We will meet tomorrow morning at the ministry as planned. Jean-Michel has also left.

The servers start cleaning up. In the kitchen, my boy Valéry helps the extra chef hired for the evening distribute the surplus meat and fish skewers. As always, they deliberately prepared more than necessary. They know they can share all the leftovers from the reception among themselves. I play along, like those who have lived in black Africa for a long time. It works out well because it's Mother's Day. As soon as the last guests leave, they will return to the outlying neighborhoods where they live. For most of them, it will be a walk back home, towards "PK5," the kilometer point 5, five kilometers from downtown, the starting point at "PK0."

The last guests have finally decided to go home. The overnight flight of Air France has just left, bringing back a statistics professor who came on a mission as part of the project. I am alone. Moïse, the night guard, is at his post near the entrance. As he is locking the gate with a chain, explosions are heard, several sharp and loud bangs.

For a moment, I think it's fireworks, a display for Mother's Day. The noise seems to be coming from the stadium, which is close to the presidential palace and the university, about a mile from here. I call Jean-Michel. He is at home and answers me. He heard it too and is worried. He also informs me that right next door, at the Minister of Communication's residence, everything is illuminated and there is commotion. We now clearly hear bursts of machine gun fire.

A few minutes later, a call from the French embassy confirms that an unknown action is taking place. We must stay at home, not go out under any circumstances. Explosions are heard from the direction of the presidency, as

well as sporadic gunfire, clearly for intimidation; they are coming from the presidential guard barracks, a few hundred meters from here. Soon, the whole city seems to be in a feverish state. I turn off all the lights and ask Moïse to take shelter in the garage. The exchange of fire lasts quite a long time; rocket launchers have come into play.

*Next morning.*

New call from the embassy. We know more now. According to the presidency, it's an attempted coup that failed, a nocturnal assault led by a commando loyal to the former president. The attackers were reportedly repelled, and a counterattack is underway. For me, it's like a bad story repeating itself. It has been six months already since salaries have not been regularly paid to civil servants. It's even more unbearable considering that I often see a South African helicopter landing near the palace. It's coming back from the diamond mines in the north, and one can imagine it's not empty.

We are starting to understand how the country is being managed: concessions of wood and mines granted to interests close to the president, frontmen for companies that effectively belong to him. The fuel distribution and telecommunications sectors are also mentioned. The country is grinding to a halt. Middle managers, civil servants, and a large part of the population had hoped that wounds could be healed.

In this turbulent context, I have been able to successfully carry out a significant part of my development aid mission. As part of the health component of the project, at least three hundred healthcare personnel at various levels stationed in Bangui and throughout the country have been able to benefit from ongoing training. A business management institute has been established. An IT structure has facilitated the training of dozens of students in computer-aided design, now used in the city for creating plans. There is a free internet access center for students at the university, fully funded by the French project. But now, all these efforts could once again be swept away by the greed and stupidity of one man.

It has already been two days. I'm living in seclusion at home. I have a few cans of sardines and beers left. The French colleagues living inside the neighboring concession of the Pasteur Institute are better off. They received supplies from an embassy vehicle. There is one positive point, though: the electricity is still on, as well as the phone.

My guard, Moïse, finally took the risk of joining his family. I couldn't dissuade him, but I'm worried about his fate. Little do I know that I will never

see him again. The situation is serious. Just a few hundred meters away, on the avenue along the cathedral, my neighbor informs me that there are already three abandoned corpses, and nobody dares to retrieve them ; it's too dangerous! The whistling of missile salvos from the mobile launchers mounted on Chadian or Libyan pickup trucks called in as reinforcements by the president can be heard constantly. Random shots, an atmosphere of terror over the city!

News from Jean-Michel: like other French expatriates, he managed to take refuge at Bangui M'poko, the French military base at the airport. On my part, I decide to call the cultural affairs advisor at the French embassy. He doesn't live far, just after the French school. It seems I can go to his place without danger. When I arrive, I find him on the phone. His wife is present, as well as an embassy secretary.

We are listening live to the attack on the ambassador's residence located upstream of Bangui, by the river. The guards talk about canoes filled with child soldiers who crossed the river from the town of Zongo, just opposite Bangui, in the Democratic Republic of Congo. They are currently repelling those who are trying to forcefully enter the residence by climbing over the walls.

It's incredible, the recklessness of the president, calling upon both Libyans and Chadians, as well as small-time thugs, seeds of assassins. Ethnic tensions between the northern Ouham and the Yakoma people from the river can only worsen. It's a new level in the country's disintegration, the magnificent result of the thoughtless implementation of democracy. Fortunately, the neighboring Cameroon did not let itself be convinced.

Worse yet, there's a worrying new development: the religious factor is getting involved! Christians and Muslims used to live in harmony before. It's true that there are more and more small prayer rooms in the neighborhoods. I have never understood the relationship between black people and Islam, how they could forgive. They continue to rightfully denounce the past ebony wood trade by Europeans and their American offspring, but they remain silent about the even greater horror of slavery in Islamic lands, which left no descendants, and we know why! The path to East Africa and Zanzibar! How can they embrace beliefs that have caused so much harm to their own ancestors? It's a mystery!

I also don't understand France's attitude. But even in Ivory Coast, it clearly took sides: favoring the Muslim north over the Christian south, exporting the complacency that is daily applied in France towards anything related to Islam.

*A few days later.*

The situation has calmed down. The embassy's crisis cell asks us to be very cautious in our movements and to stay confined to the city center. I intend to go to the Ministry of Higher Education; I'm eager to see if the project offices haven't been looted. Beforehand, I call the minister to warn him. He will join me. Jean-Michel, whose offices are nearby, prefers to wait.

We take the external emergency staircase. We climb the three floors and discover the extent of the damage: water cascades in the stairwells, puddles in the corridors, everything is flooded. As before, sinks, faucets, and pipes have been literally torn from the walls, not even cut, just brutal and primitive plundering. Of course, the computers, power backups, air conditioners, and photocopiers are gone. The documents are scattered on the floor. They were hastily removed from the metal filing cabinets, which were also taken away. In my office, only the wooden furniture remains, of little value here.

In the minister's office, the scene is the same: the two wooden elephants on the shelf on the back wall didn't interest the looters, but the chairs are overturned, the windows are shattered, as well as the thick glass cover on the desk. The frame containing the photo of the minister's wife and children suffered the same fate. He says nothing; he knows and expected it, and I don't condemn him either, but as the project leader, I'm only worried about the reaction of the cultural service of the French embassy.

I start mentally tallying the damage, counting the stolen computers and air conditioners, assessing the vandalized furniture, estimating the cost of future repairs. I have to downplay it to have a chance of getting everything back on track, explaining that it's not so serious, not an easy task! A guard arrives at the scene and informs us that military trucks took the plunder from the ministry to be transported on boats to the opposite bank, in the DRC. Who steals from whom ? Hard to tell !

I initially didn't understand the extent of the fighting, but gradually the testimonies are accumulating, and the information is corroborating. The president, out of hatred and fear, refused to negotiate despite vehement protests from the former president, who denies being the instigator of the plot. After everything, it doesn't seem impossible to me that this is the case. Some officers from his ethnic group, degraded and humiliated by the new president, may have acted alone. But why target the population? It is within the ranks of the river ethnic group that the highest number of doctors, pharmacists, executives, technicians, and entrepreneurs were found.



Terrorizing the neighborhoods where all these people lived with their families through indiscriminate bombings was certainly not the solution. It was an ill-considered reaction!

The toll of the recent events is terrible. There have been hundreds and hundreds of deaths, sweeps in the neighborhoods, summary executions, and an exodus of tens of thousands of terrified people who went into hiding in the bush south of the city, leaving with nothing, left to fend for themselves. In the outskirts of Ouango, to the north, upstream from the waterfalls, hundreds of child soldiers speaking Swahili spread terror for weeks, looting, killing, and shamelessly raping.

This time we have taken another step towards a civil war. Many professionals, due to their ethnic background, will prefer to leave the country. This is the case for the dean of the medical school and many African doctors and academics I work with. At home, I sense a shame beyond the fatalism so common to the African soul, an abandonment resulting from fatigue and moral exhaustion when too many misfortunes befall you, when everything you have built collapses.

All these valuable African professionals we have trained could very well have stayed in France and found an enviable position instead of choosing to live in one of the poorest and most backward countries in the world. They have nothing to do with most of those mediocre black immigrants who only live off social assistance in Paris and the major cities of France. One of those who supported me in the project was previously a clinical head in Strasbourg specializing in urology, and another was a civil engineer. They chose to return with uncertain salaries. Even the Minister of Higher Education himself did not receive regular remuneration. All these elites loved their country, far from the caricature often presented in France. Once again, they felt betrayed.

A slight military intervention by France, as has often been the case before, would have protected the population. When lives are in danger, excuses such as the presence of African forces incapable of deciding don't matter. Disengagement, perhaps, yes, it was France's right, but then do it properly and completely, not in a series of hesitations felt by African elites as abandonment. Shouldn't morality take precedence over international law?

Once again, I ask myself the question, as I do after every mutiny in this country: What will France do with Black Africa? It seems like it wants to get rid of a burdensome load. By acting as it does, it is undoubtedly losing in the long run. Its exports will dwindle. While they may not be significant here, in countries like Senegal or Ivory Coast, they are a considerable stake. Natural

resources will be exploited by other countries—cocoa here, palm oil there, oil elsewhere—even if initially it was French entrepreneurs who were behind their exploitation. Chinese, Americans, and other opportunists have rejoiced at France constantly denouncing corruption in Franco-African affairs—a good opportunity to take over. Moreover, most of the time, the alleged wrongdoings are insignificant compared to the great wastefulness of the French state.

Times have changed, and France no longer has an ambitious international policy. It is only a reflection of a well-established economic decline. Now that the Berlin Wall has fallen and with it the Soviet Union, political support for this small African country at the UN is no longer of interest. France is now uninterested in Black Africa. After abandoning the expatriate whites who had settled there, it has in turn abandoned the first African elites who had believed in development with France. What a waste!

Most of the population trusts the French military to restore order, even if French journalists persistently tarnish their army's reputation. The real problem is that France is trapped by the foolish speeches of its presidents about democratic openness. Once again, they have worked against the country's interests. Why? Initially, it was clearly for electoral calculations, but later it became fanatical egalitarianism.

The people in the bush and many in the African cities were incapable of electing a president given their level of knowledge. It was a charade, a bad joke of local elections that allowed the current president to embellish his curriculum vitae, declaring himself a researcher and inventor of new cereal species. Lies, theater, and power, but isn't that what we have been doing in France for several presidential terms?

Continuing a development policy that would have borne fruit was possible. The evidence is there with what had been done just before and just after independence. We shouldn't have listened to the nonsense spread by all those white Europeans, journalists, pseudo-thinkers, and ignorant bobos about African realities. To truly know a people, you must live with them. What a waste and betrayal !

Immersion: deep-diving mode, I'm still Théo, my grandfather, Bangui, facing the river, July 14, 2002, French National Day, experience time 28 minutes.

The hotel is wonderfully located on the right bank, facing the waterfalls.

Jean-Michel is sitting at the table with me on the terrace. We have just left the nearby French embassy. At fifty-two years old, I am on the eve of a permanent departure from this country where I have lived and worked for six years. I initiate the conversation :

– It's both beautiful and ugly.

– What do you mean ?

– This concrete barrier above us is what's ugly, the river, the waterfalls, and the opposite bank are what's beautiful. How many times have I dreamed that this huge thing didn't exist!

– It's a symbol. Africa trying to catch up, each capital has made it a priority to build one.

– You know that we're probably sitting on the first French settlement in the country. Behind you, above the French embassy, where the military camp is, is the former Panther Hill. At the beginning of colonization, the only feasible solution to develop the country was to ensure river transport on the Oubangui. In certain seasons, the river is navigable from the south at least up to here. With all these rocks arranged like a harrow across the river, steamboats couldn't go any further. Upstream, it's even worse, the obstacles become insurmountable. So, a post was set up with a few dozen officials, officers, and African auxiliaries. Apart from some raids in the beginning, there was no real hostility. Later on, the capital was built a little further downstream and south of the hill.

– Did you want nothing to change ?

– I didn't say that, but this large vertical concrete barrier seems incongruous here, even though, I'm willing to believe, it is a symbol of the will of the first post-independence African leaders to catch up and adopt the Western model. They were convinced at the time that they could make it. The water trickles between the rocks. On the opposite side, to the east, on the left bank, lies the town of Zongo at the foot of a green hill, in the DRC, the former Belgian empire. With canoes, one can freely cross the river. On our side, just past the hotel, I see the facilities of the nautical club built by the white people, then the curtain of vegetation hiding the nearby city center, at PK0. Jean-Michel changes the subject.

– How did you find the reception at the embassy ?

– If you want to compare it to previous years, of course, it's not the same, but year after year, it was getting worse anyway. Ten years ago, champagne was still flowing abundantly in all the French embassies in Africa. Sometimes

we witnessed picturesque scenes. African veterans who fought for France could drink pure pastis and quickly become intoxicated. Others talked about their military careers. They all wanted to believe that they were almost real Frenchmen. Overall, they added a touch of joy and humor to these receptions that every expatriate attended. I suppose that today, beyond the question of budget constraints, there is a concern for restraint. Too many people on the ground have suffered from recent events.

– You must be happy. We showed the film made about the country, the one that was part of your project. Why did you make it, by the way? It wasn't really part of your responsibilities.

– Yes, but one of the technical assistants on the project was passionate about multimedia pedagogy. Besides, during my first year here, I witnessed the disappearance of many archives, particularly those held by local photographers, treasures forever lost. Without having the perspective, without being as aware as today, I felt the need to capture a testimony, that of one of the poorest countries in the world, if not the poorest, embracing what we call civilization, or rather the Western way of life. Making a documentary about the country could very well be part of a student IT project, and I had some freedom in the use of allocated resources.

– The colleague you're talking about, is he the one who wanted to become the president of the French school parents' association ?

– It seems so, but I didn't really follow the matter, although someone else had approached me about it in a way.

– The Algerian pilot ?

– I see that you knew about it. For my part, I wasn't involved in that issue ; I was too busy with other things.

– You're telling me he approached you?

– Yes, that infamous day when the mutiny started, you know, the reception at my place with the minister ?

– How can I forget !

– He came the day before to talk to me about the election. He wanted to know what we thought of him at the French embassy, probably to assess his chances.

– But why you ?

– My daughter and his were in the same class at the school. He knew that I was heading one of the main French technical assistance projects, and it was difficult for him to penetrate the French embassy milieu. He and his family lived on the fringes, so to speak. They rarely ventured outside the

compound where they resided.

– Do you know what they said after the attacks on September 11th last year ? Those trips he made to the Middle East...

– In such a closed community like that of the expatriates, rumors spread quickly. I understood that working in Africa on medium-haul flights was a way for him to pay for the expensive Boeing certification courses. His wife had also tried to establish a flight school in France, in Lyon, but she didn't get the necessary authorizations, so it was a temporary solution for him. With all these events, I don't know what became of him.

– But tell me, to change the subject, I saw the ambassador talking to you. What did he say to you?

It's Jean-Michel's usual curiosity, always hungry for information, alert, jealous for no reason of a few exchanged phrases with the ambassador.

– I remember, a corruption case at the Ministry of Public Works where he used to work. Missing computers or something like that. But in addition, he was accused of all sorts of excesses in his private life.

– His wife was African, and I believe she was close to the former oil minister from a neighboring country. That is probably not unrelated to the fact that the embassy wanted to relocate him to another position. I won't hide from you that the technical assistants on my project were hostile to his arrival. They reproached me for it in private.

– In the end, he was convicted.

– Yes, for incitement to debauchery, with a ridiculous and recurring accusation in Bangui : white men delivering young African women to dogs. I have to say it because it was in the newspapers, it was as outrageous as that. The impromptu witnesses even specified their breed, not those poor yellow scabby dogs that roam the neighborhoods, no, fantasies require it, wolves, German or Austrian shepherds. Can you imagine how common they are here! The bigger the lie, the more it passes. If the French journalists had heard about this case, they would have rushed to tarnish France again, good blacks and evil whites, thank you Jean-Jacques!

– But then, what was it about ?

– In my opinion, he simply tried to seduce the wrong girl. He was a notorious womanizer, as my grandmother would have said, but I don't think it went any further. In any case, there was no representative from the French consulate at his trial. So I went to the hearing at Jarlon's request, even though

I had a terrible bout of malaria that day. Once convicted, he was thrown into prison, and I went to see him regularly. The facility was guarded by the presidential guard because among the inmates were former ministers or politicians.

– Were you allowed to enter ?

– Every time I came to visit him, the guards pointed their machine guns at my belly, but in a good-natured way, like a good prank played on a white guy! They let me in. Jarlon was held in a small cell with a Lebanese and another white man. I brought him books and food. I also gave updates to his wife who was abroad.

The waiter finally brings the beers and opens them. He places one of those awful plastic Chinese bowls with salted roasted peanuts. The beer is good, locally brewed by a large French beverage company, cold, not too strong, and pleasant to drink like in all other Francophone countries. It hasn't been lacking even during the episodes of mutiny. Ultimately, I'm not far from thinking that a good brewery is just as effective for France's image as anything we can do within our development projects. A few French engineers, technicians, and executives, and that's it! The image of beer, like the image of Coca-Cola that carries North American culture. I suppose Jean-Michel wouldn't like that; he believes that the future of France in Africa lies in Francophone culture. So I refrain from sharing this thought! He continues :

– When are you taking the plane ?

– In a few days ?

– You'll have to stay in France for at least two years, that's the rule. Do you hope to leave again afterwards?

– Yes, even though positions are becoming scarcer. You know, I've just completed thirteen consecutive years when you're not supposed to exceed six in a row! In total, I already have over twenty years of career on the continent... More importantly, I have no specific connections or affiliations, and I'm approaching retirement. All of this makes me rather uninteresting. Jean-Michel finishes his beer and looks at his watch.

– I have to leave, a meeting in half an hour.

– No problem.

– We'll meet tomorrow for dinner, my treat, at Les Boukarous, is that okay ? Let's say around 7:30 p.m.?

– Very well, see you tomorrow and have a good evening.

## freestyle conversation

*Immersed in the scene: I am Théo, in Bangui, at the restaurant 'Les Boukarous,' 7:30 p.m., on July 15, 2002.*

Jean-Michel is already there, and there aren't many people around. The curfew has been lifted, but the nightlife hasn't resumed as it was before the fourth mutiny. I miss the time when there were so many small dance bars where Congolese music would escape, small roadside stalls offering grilled chicken. Jean-Michel :

– What will you have? The menu is always the same, chicken and skewers with Maggi bouillon cube flavor.

– I'll go for the fried skewers and plantains.

– So, where were we in our conversation yesterday ?

– We were talking about my departure and yours next year.

– But by the way, why did you leave France ?

– It wasn't in my plans, even though I wanted to travel. It was just the randomness of life, some would call it destiny. Initially, I wanted to pursue academic research, even though my family looked down on that activity, claiming it was the state's domain in France. In their eyes, I would always be just a civil servant in a family dominated by industrialists, officers, doctors, and various notables.

– I suppose you were educated by the Jesuits like me ?

– Yes, at the 'jèses,' the Jesuits, at a time when these men embodied excellence, far from the pale copy presented by Pope Francis, elected in March 2013.

– It seems you don't appreciate him.

– Not at all, that's true. He represents weakness itself and encourages attacks on the West. How can one systematically defend African migrants who, most of the time, leave their countries out of cowardice, abandoning their parents and families? Speaking of the teachers I had, they were remarkable. The history teacher came from a family where one of its members had distinguished himself as a Marshal of France during World War I. The one who taught me mathematics and physics was a graduate of the prestigious Polytechnique school. It was him who pushed me towards exact sciences because until then, I was also doing very well in literature. These teachers never felt the need to constantly repeat that they were intellectuals, as the petty certified teachers in secular high schools often did with

pretension.

– So, you excelled in everything.

– Let's not exaggerate, but it was somewhat like that. In my second year of high school, three years ahead, I could recite poems by Ronsard...

Rosa, rosae rosam... Sweetheart, let's see if the rose that this morning unfolded its purple robe to the sun has not lost, this evening, the folds of its purple robe, and its complexion similar to yours...

Maybe that's when I started to love Italy. It was only in philosophy that I had bad grades because of my leftist and anticlerical ideas. I often avoided participating in religious services. At the same time, I couldn't help but be moved by the worship. The chapel was magnificent, with a very pure Gothic style made of white stone, with a skillfully suspended golden cross above the altar, almost invisible threads of steel. Sometimes I dreamed at night that I was floating inside. The school itself was a real labyrinth, and I would sometimes escape for a few hours outside through one of those dark, forgotten chapels that were part of it.

– And what did the Jesuit fathers, the "Jèses" as you call them, think about it?

– Looking back, I am surprised myself. Nothing bad, just indirect remarks. There was a lot of tolerance, but only in that regard. Some of them had probably discovered faith late in life, as a refuge for intelligent and aware people, Pascal's wager. So they understood, and perhaps they thought that entering into spirituality was above all a personal journey, and that the decision should never be forced. Overall, their attitude was a constant encouragement for excellence, but with discipline.

– But on your part, you surely chose humanities early on, at least during high school, right ?

– Yes, and from a young age, I already wanted to be a theater actor.

– Why didn't you do it ?

– We were not wealthy. I didn't have the chance to know my father. Becoming an "Agrégé" was a safety net for my mother. You know, she had to work hard to raise me. One of my aunts took care of me when she had to go to work.

– What did she do ?

– Without any particular training, she took whatever she could find, a



telephone operator, a repetitive and boring job at the time that involved removing and inserting plugs into electrical terminals all day long. All for a meager salary. Still, she managed to put me in a private Catholic school. The priests practiced a more effective social policy than today's welfare state. When a child seemed bright and promising to them, they made an effort and reduced the tuition fees. After graduating, I started teaching English in a high school for two years as a literature "agrégé". Then I learned that the French Ministry of Foreign Affairs was looking to recruit an agent with responsibilities in the cultural sector, particularly in Anglophone East Africa. There would inevitably be theatrical activities, dancing, performances, and networking, everything I liked.

– I applied, and my application was accepted. Later, I took on various positions, occasionally returning to France for teaching. You see, there's nothing surprising about this career path. But in your case, it's more unusual.

– It was the context of the time. After defending my first doctoral thesis, I was supposed to enter higher education, join the laboratory where I was introduced to research as a teacher-researcher. It was going well until the student protests of May 1968 came and jeopardized any chance of recruitment.

– You've already told me that you didn't participate in the movement, what did you call it? Oh yes, a "little revolution."

– Anyway, it was certainly a detail that doesn't deserve the numerous books and analyses that have dealt with the subject. The context? An economy that was booming, normal salary demands that could have been met without breaking the system, numerous scholarships granted to students from all backgrounds,

An agitation within the sterile academic fields of sociology, psychology, philosophy, and literature was brewing. There were foolish, silly, biased, and borderline idiotic remarks and chatter coming from students who had neither knowledge nor work experience. Many of the protesting students had just entered university. It's worth revisiting what one of the main leaders, a redhead, was saying. In hindsight, one can only be astonished by the ordinary, flat nature of his words, devoid of any substance, pure and simple provocation.

To add to that, there was the irresponsible behavior of those who proclaimed themselves as the new philosophers. They were hardly any better than the rowdy students and only appeared in the media because they couldn't shine through their academic work. They were merely spreading an

easy, simplistic, and libertarian ideology. They fueled the flames solely for self-promotion.

Nevertheless, the students and workers had united to push the government to grant them benefits without considering that the economy was not limited to France alone.

– How is all of this related to your career ?

– It's quite simple to explain. As soon as salary increases were granted to them, which was only fair given the prosperity of France at the time, the workers abandoned the student movement. The state had almost won. To fully restore order, the students needed to be calmed down. We bought off the leaders by handing out positions left and right. Those who were unionized naturally benefited the most. Often, they were recruited with only a bachelor's degree or even just a master's, while at the same time, individuals with a Ph.D. or a postgraduate degree were sidelined. It was a dirty political game that led to the saturation of universities. Recruitment in higher education was blocked for several years. The loudmouths who had shouted in the streets, those who had thrown bricks at the police, ended up with lifelong positions in the civil service.

For many of them from the softer sciences, it was an unexpected windfall. In fields such as sociology, it would have been very difficult for them to find employment. At that time, fake and parasitic jobs designed solely for their recruitment had not yet been invented.

– But at the same time, you said that students in the exact sciences had participated little.

– Initially, yes, but later on, opportunists joined the union, and you can imagine that they were not the brightest students. We quickly reached saturation, and recruiting new researchers became nearly impossible. The position I was supposed to apply for was eliminated due to budget regulations at the ministry level. Aware of the situation, the laboratory director offered me a temporary solution: to go abroad as part of development aid, while waiting for the situation to improve. That's also when Émilie and I decided to build our life together. She was just as broke as I was. Leaving for a few years seemed like a good temporary solution to us.

– And then you got trapped, you succumbed like me to the charm of Africa. But with your family, it was difficult, right?

– At first, no, but over time, it became increasingly difficult. The living conditions deteriorated, and we chose to live separately, with Émilie and the children in France and me here. I managed to go back to France at least three

times a year, and she would come with the children during the holidays.

– And your children, where are they now ?

– Claire is following in her mother's footsteps, studying biology in Paris. After that, she intends to pursue a career in research. As for Luc, he's finishing his studies at an engineering school and then plans to do a Ph.D. in either England or Scotland, with the ultimate goal of joining the United States.

*Jean-Michel takes over:*

– Alright, so let's get back to evaluating your actions here. I certainly won't let myself get drawn into this discussion. It's a recurring debate between us. Why did I, Théo, stay in Black Africa? Life is great for embassy personnel, especially those involved in cultural affairs. It seems perfectly normal to spend considerable sums in that field, in Francophonie, but what about science and technology! Wouldn't that be a waste? Preconceived ideas are persistent! Nevertheless, I have to admit that when it comes to the true sciences and technology, it still doesn't sit well with black people. It's even a notorious failure when considering the low number of highly skilled black technicians and engineers, despite all the training programs.

What should console me is that it's not much better among black populations who have long been integrated into Western countries, whether they are French exotic enclaves or Afro-American subgroups. Consequently, this doesn't mean that the poor results I achieved at my modest level are systematically due to incompetence! Under these circumstances, how should I respond to Jean-Michel?

– Of course, the outcome is disappointing, but there are other factors to consider besides mere education. If there is no technological environment in society, it seems difficult for a few graduates to thrive and for young people to be attracted to technical and engineering programs. One observation frequently made throughout my career is that black individuals tend to imitate too much. The university is not there to provide recipes but to teach how to question things in the best way, prepare for research, and innovate. Too many black students tend to mimic. The worst example I can give you is that of a first-year student who asked me to bring him a manual from France that would enable him to build from scratch one of the best-selling car models by Renault at that time.

As if white people had received industrial revelations in addition to sacred texts! To be honest, this dates to the seventies and is certainly no longer

relevant. Nevertheless, when it comes to chatting, debating, discussing, and using subtle arguments, black individuals excel, which could explain why they are so numerous in these international organizations that only produce empty words. It might also be an inheritance from populations that did not use writing! Another confirmation of these poor skills in true sciences can be found in the dismal results obtained by students pursuing scientific doctoral programs in France. Often, they become burdens for laboratories. Instead of hastily crying racism, which would be the reaction of those who listen to our words, at least mine, we should seek out the factors that could cause this situation. Even before that, we should ask those who contest this truth to look at the statistics rather than bombarding the names of certain scientists. Of course, there are black individuals who demonstrate genius, but statistically, in the field of true sciences, and up to this day, they are fewer in number compared to whites in Europe or the USA.

Yet, overall (aside from the Neanderthal genes absent in black Africans), all humans have the same genetic background and, in theory, the same potential. The explanation lies more in epigenetics, how genes coding for a given trait are interpreted. In this case, it's a matter of habit, and the translation can be passed down from generation to generation without the genome mutating. For example, resistance to diabetes can pass from generation to generation; a human group subjected to long-term dietary restrictions becomes more resistant over generations, while another group living in a more privileged environment with a rich diet becomes predisposed to disease. You may also remember the case of certain infant formulas manufactured in Europe that were poorly tolerated by black babies. On the same subject, 80% of Europeans carry a mutation that enables their bodies to produce lactase, an enzyme capable of breaking down the sugar present in milk. This mutation made those who possess it more capable of surviving and having offspring.

- But this time you're talking about mutation !

- The topic is complex. Sometimes journalists confuse genetics (which is inscribed in the genetic framework for a long time) and epigenetics (the transcription of a specific sequence of the genome defining a trait). But in the specific case of intelligence, some researchers are certain and claim that there are mutations favorable to intelligence. Moreover, there has always been this dispute between Darwinists and Lamarckists. The former only want to consider chance and selection, while the latter insist on the importance of effort, where function creates the organ. Some neo-Lamarckists believe that

the repeated use of a function or organ could favor a particular mutation. They are encouraged by the vitalist current close to spirituality, which suggests that the soul, the breath of life, could induce these transformations.

– But what you're telling me could be considered racist. Certain peoples might be predisposed, for better or worse, some to research and others to violence?

– In the case of epigenetics, it's not a problem. Once we know a particular predisposition of a human group, we can correct it if necessary, for example, through education. With a given genetic background, we can enhance intelligence through education. So, if you want my opinion, we should have continued supporting African universities for much longer than we did. We acted like those piano teachers who, frustrated by the lack of talent in some of their students, prefer to give up, claiming that they don't have a musical ear.

– In this regard, black individuals are particularly gifted.

– Certainly, statistically speaking, they demonstrate an obvious superiority over whites in certain dances and music where improvisation is essential, such as jazz. However, when it comes to following sheet music or adhering to complex choreography, the situation often reverses. Finding the origin of these differences after accepting and acknowledging them is a process in which the human species has much to gain. Agree with me that racism is outdated; we are not all identical. Now, if we must go back to our initial subject, whether my life in black Africa has served any purpose, I could point out that in terms of literature or soft sciences, it doesn't seem remarkable either as an outcome. The low number of black authors is proof of that. Considering their abilities, the current opportunities, and the enormous sums wasted in the Francophonie, I believe we could have expected better!

– Are you certain about what you're saying ?

– If you doubt it, go into a bookstore in France or simply search on the internet.

– What if it's something else, and they simply prefer to live peacefully without having to rack their brains or ask questions all day long ?

– If they aspire to live freely, to live in harmony with nature, then they would be right. There's probably some truth to that, and I believe Western economists are mistaken when they think that black Africa will be the next hunting ground for capitalism. I hope they won't let that happen, at least until robots replace mind-numbing jobs. They will have saved themselves

from generations of slaves confined to factories, shops, or offices.

– So, if you had known all this or had reflected on it from the beginning, you wouldn't have come to manage development projects ?

– I couldn't have known from the start that France would withdraw its aid so quickly. Leading a development project in Asia would have been much more rewarding and easier. After spending two years on-site, local executives would already be ready to take over, and they would have asked us to leave. Here, on the Black continent, the cultural handicap was underestimated. I admit that I may have avoided asking the real questions for too long, probably because of my upbringing. Whenever the results of a project appeared disappointing, the blame was always placed on the technical assistance by the ministry in Paris. We were never good enough. No wonder! Those who judged us had received the same education, believing that black people were capable and should be as competent as young Westerners in excelling in science and technology. So, I always tried to be better, with fewer and fewer resources provided by France.

It's a copy-paste of the widespread opinion in France, asserting that academic failure is mainly due to social factors, a denial of innate differences. I must admit that I took it too personally, unlike many others. I should have opened my eyes much earlier. But let's leave simple intelligence where it is. It's human consciousness that matters. Only white "bobos" and black deniers would be offended by the assertion that the success of the United States of America is primarily that of white America, itself the product of a white Europe. It is the success of Western descendants who were not "wretched refuse, teeming shores" but often promising young talents that Europe refused to recognize, trapped by its insistence on maintaining privileges. Similarly, those who had left Portugal or Spain long before them to colonize South America were not simply leftovers from the West.

The fact that black people have not participated in the progress of science and technology in recent millennia is both a reality and a detail of human history. For my part, that doesn't prevent me from loving and considering black people just as much as white people. White or black humanity, we're all on the same train. The most important thing is not intelligence but consciousness, and it has no color; it is at least as developed among black Africans as among white people. When artificial intelligence is sufficiently advanced, and it's coming soon, no white person will be able to look down on a black person on the pretext that they excel less in science. The future of humanity will then be chosen primarily based on consciousness, by all

people, without any consideration of origin or skin color. The only problem that bothers me is the departure of black youth to Europe, a true desertion that is the consequence of uncontrolled demographics rather than a supposed incapacity of African leaders.

*Continuation of the discussion. Jean-Michel:*

– But getting back to your life and knowing you as I do now, before getting married, I imagine you had a preconceived idea of the ideal woman. Tell me if I'm wrong? Is that why you chose a natural science graduate?

– No, I knew Emilie as a child. As she grew up, I liked her.

– And when your wife divorced so late, did she have someone else in her life?

– Not at all. It was more like a challenge, to show me that she didn't need me and also to punish me for not coming back to France. Claire and Luc disapproved of this decision, which, in their opinion, made no sense for either of us.

A pause, and then I continue:

– When you finish your career, what are your plans ?

– I think I will retire in Kenya. I have already investigated buying an apartment in Nairobi. It's getting late. The customers have all left, and the last waiter is discreetly observing us from the bar; he is clearly waiting for us to leave.

– We should go. I'll get in touch when I return to France.

– Of course, I'll be glad to hear from you.

Just polite phrases. All these friends, if that word is appropriate, they are more like relationships confined to the narrow white circle in Africa. Once you're gone, everyone goes their own way without much concern for others. It's almost a rule. Jean-Michel, that's for sure, he's alone, alone in life as it is difficult to imagine. A few professional relationships, and that's it. He doesn't have real friends, and in my opinion, he has never tried to have any. He expresses his sensitivity and sociability through theater.

~

## France 2015

Goodbye Emilie

*I am Joy, Underground, Ocean Dome, Project Nemo, day 2 of my time travel journey, April 20, 2035, experiment time: 0h 38min.*

Krawn:

- Everything okay, are you ready to continue ?
- Yes, don't worry. The 'deep-diving mode' indicator has turned back on.

Let's go!

Immersion: I am Theo, my maternal grandfather, Paris, Emilie's apartment. I am accompanied by Claire and Luc, who have just arrived from Boston, Sunday, January 8, 2012, Epiphany.

Claire, distraught, preferred to go to her room. Once inside, her past life resurfaced. Emilie hasn't touched anything; everything is still here: the stuffed animals, the orange wooden horse from Sweden with painted stripes, the early book collections, teenage posters and carnival masks on the walls, in one corner the game console and a music synthesizer, some basic biology textbooks, numerous handwritten university course materials piled on the floor. Luc is with me in the office, or I should say, my former office before our divorce, two meters by two meters forty arranged in a corner of the living room. Nothing has changed in the layout. Emilie hasn't touched anything, just placed her computer and some administrative papers in a drawer.

It's a veritable cabinet of curiosities with an overwhelming decoration that extends to the ceiling. You can find an eclectic selection of various rare and authentic African objects mixed with family mementos placed on the walls or on shelves, among them: a light gray wooden mask with elephant tusks as ears, another zoomorphic mask with antelope horns and a monkey's jaw, this time from the south, a Fan mask, two ancient bronze warriors from Benin, a shield made of animal skin surrounded by two spears, a throwing knife, boxes of rare Central African butterflies surrounding a Goliath beetle, naive paintings, ostrich eggs and feathers, an elephant molar, teeth from hippopotamus and warthogs, bronze bells from northern Cameroon surrounded by two ivory figurines, a display case with Sao objects in clay: a horse's head with a mane, fishing weights, miniature vases and bowls, a hippopotamus and a catfish, all from the south of Chad.



An ebony crocodile is placed on the radiator shelf. To the right, on a coffee table, a wicker bowl contains a composition of exotic fruits made of ivory and ebony. Next to it, an ivory chessboard and a bowl filled with small malachite eggs. A mahogany console brightens up the room because its surface is covered with a mosaic of glued and polished ostrich eggshell fragments. The shelf just above holds a Baccarat crystal sulphide, a bowl with silver thalers, souvenirs from the German colonization in Cameroon, and a pink quartz skull. An engraved head from Cross River in Nigeria is placed directly on the floor, in the corner of the desk. All these objects, of course, have a story and a meaning for me. They are like a summary of my life.

Mixed with them, in simply placed or hung frames, are various photos bearing witness to my life on the African continent. One of them, in silver, is a gift I gave to Emilie for our first wedding anniversary, a photo of her by the seaside, a frangipani flower in her hair. A little further, in a small glass frame, another photo shows Claire as a child in a safari lodge. On a shelf, there is a pair of cloisonné enamel vases brought back last century by one of my ancestors, a navy fauvist painting between them. An old engraving depicting the first hot air balloon ascents is hung at mid-height. Luc silently observes these objects. He knows that it's my past, a tiny part of his and Claire's when they used to come and visit me, but the happy childhood days count double. Now, the most important thing for him is his life in America with Jill and Justin, born in 2009. Life goes on, another generation. He finally decides to speak.

– I never understood why you got divorced.

– What a question !

– It's because I see that our mother hasn't touched anything, so she must have cared about these memories.

– I searched for reasons, a depressive state, your departure to America the previous year, my prolonged absence, the feeling that nothing had gone as planned in her professional life.

– But she was still teaching at the high school ?

– Only part-time and waiting for her retirement. She did it mechanically, without any enthusiasm, with the feeling that her life was over. Your mother seemed to have lost interest in everything. One day, she announced her decision; the sooner I left, the better it would be. I didn't try to understand or argue. The separation was amicable, and I left her the apartment, which was practically our only asset.

– So you didn't try to dissuade her ?

– It was too late, and then I realized that for her, it was a way to challenge, to shout out her disillusionment. A little later, she informed me that she was going to Boston to see Justin.

– She didn't come.

– It was only at the very last moment that she decided to cancel after a call from her doctor, an anomaly in a blood test that was supposed to be a routine check-up. The count revealed a high level of lymphocytes. Nevertheless, the doctors were confident, and they reassured her. According to them, the chemotherapy was very effective. She started the treatment.

– And then ?

– Despite nausea and loss of taste in the spring of 2011, she seemed to be getting much better. She even insisted that Claire go back to Boston to be with Ray.

*Immersion: I am still Theo, Paris, Emilie's apartment, later in the day.*

Emilie wanted to rest with her parents in the southeast of France. I just got back from Gare de Lyon.

– It's done, I have the train tickets.

Luc:

– Regarding our mother's illness, I still don't understand how it happened so quickly. The news you gave to Claire didn't seem that serious.

– I understand your surprise. I myself was surprised to receive a phone call at my hotel; it was at the beginning of September 2011. Your mother explained to me that her health was not good at all. Since both of you were in Boston and I had just retired, I offered to temporarily move into the apartment. She agreed to avoid Claire coming back; she was preparing for her wedding with Ray. According to the doctors, it was a second relapse. They restarted the treatment, but with increasingly frequent hospital stays. Eventually, she stayed there. The medical team who was treating her explained to me that she had developed an autoimmune disease, in other words, her immune system was breaking down. Several times, she had to be put on respiratory support or intravenous infusion with broad-spectrum antibiotics. I didn't want to alarm you, but she was getting weaker week after week. It was just on New Year's Eve that a doctor warned me that her major organs could soon stop functioning.

– Was she aware of her condition ?

– She was very pale but not in pain. Sometimes I lied to her, assuring her that she would soon be coming home or that you would come, but she reacted very little. Then, everything happened very quickly. One morning, when I entered her room, I had a very bad feeling. It was almost over. I kissed her, talked to her about both of you and Justin, but I'm not even sure if she heard me.

*Immersion: I am Joy, on the train, Monday, January 9, 2012, the Machine is sharing Theo's thoughts with me*

I have already known this valley that the train travels through, 38,000 years ago, in the time of Ogh and Ela. Luc is immersed in his computer, probably busy writing a report or preparing a presentation for an upcoming conference. Insomnia, grief, and sadness have reddened Claire's eyes. The train is moving at full speed, between 250 and 300 kilometers per hour. All the seats in the car are taken. Middle or upper-level executives are working on their computers, young and old are playing or watching movies on tablets, others are on the phone. The automatic door at the entrance slides; even if he wasn't wearing his uniform, I would easily recognize him as a ticket inspector. He moves confidently but with an annoyed look, as if working is too much for him. It's the eve of the weekend, and he had counted on a strike to extend it. Unfortunately for him, his union changed their minds at the last moment, in exchange for an additional benefit promised by the authorities. The French state has a monopoly on railway transportation, and it is a common practice for rail employees to blackmail the government by holding French citizens hostage.

Do the employees of the French National Railway Company consider themselves privileged? They don't think so because they are completely disconnected from reality. Yet, they earn twenty to thirty percent more in average salary than other comparable level employees. There is no justification for it; their job is less difficult than those in construction, less technical and stressful than the paramedical staff working in hospitals. Considering the abyssal debt accumulated by this public company, it is evident that it should be privatized. I would be willing to bet that it won't happen. Once again, the state will bail them out with a mechanism acceptable to the European Union. The President will further indebt France, private banks will feast, and average French citizens will pay through taxes. Other categories will continue to be underpaid, such as nurses in public

hospitals. The ticket inspector is getting closer. In the row of seats just in front of me, he is dealing with a regularization; it's a young student who forgot her ticket. She pays and will be reimbursed later, an easy customer unlike those diverse travelers, black or Maghrebi; the inspector avoids them, pretends not to see them, too complicated.

Outside, the landscape unfolds, fields, groves, and meadows where herds of cows graze, now too rare. Livestock farming is intensive, the cattle exist, but the animals are hidden, tightly packed together, confined in industrial sheds called barns. They are pumped full of antibiotics and fed with feed infested with pesticides or genetically modified rapeseed or soybean meal, all so that the French can eat meat every day. Fortunately, that should change. In the future, there might be fewer cows! It turns out that these animals release a significant amount of carbon dioxide when they fart! It's bad for the planet, say the eco-bobo types. Instead of reducing the number of humans, we'll reduce the number of livestock!

France doesn't care about its farmers; it leaves them in misery, another proof of the complete immorality of its leaders! The political class despises them to the point of daring to suggest that they become servants to city dwellers, another humiliation. They suggest that they supplement their meager income by turning their farms into bed and breakfasts for city residents in need of nature. Disregarding small farms is a dramatic mistake. If the country were ever faced with a conflict, France would quickly starve. Those who govern the country have listened to history lessons in schools and high schools, in literary sub-specialties before studying law, administration, or philosophy; not being intelligent enough, they didn't understand them, content to repeat them like parrots; if the French survived during the last war, it was thanks to the rural world. Maybe the teacher didn't say it explicitly, but if they had been truly intelligent, they would have understood.

The train slows down, the last station before the destination, crowded platforms, many Parisians. From here, you can access the ski resorts in the alpine massif. The country has never been so indebted, train travel is very expensive, so the French are supposed to be poor, and yet winter tourism in the mountains thrives. I hate those tourists who think they can claim the mountains.

Capitalism has spread its sores on most of France's mountain ranges, just as it has spoiled a large part of the coast by allowing the construction of marinas and harbors. What is these artificial vacations worth compared to those of my childhood? Back then, during the summer holidays, all the

cousins would gather in a family house. In those childhood days, we would sometimes make jam with the cook or grandmother, stirring it in a large copper basin, pink raspberry foam for the girls, blue-purple bilberry foam for the boys. During breakfast, we would devour jars of jam or jelly. Many city children still experienced that time after the last war, not just the rich ones; almost all French people still had family in the countryside. The youth got to know nature much better than in these paid hotel parks that are now scattered everywhere in nature. In the streams, there were still native species, crayfish not yet replaced by those from Louisiana, and salamanders not yet decimated by fungi from Asia.

The small wildlife of France no longer interests anyone. For vertebrates, it's dramatic; in the short time of my life, I have witnessed sixty percent of vertebrate species disappear from the face of the planet, and that's assuming they have all been documented. When I was a child at my parents' home in the southeast of France, there were still large light green lizards and capricorn beetles, but now they're gone! In general, insects have largely disappeared today.

In the 1970s, driving a few dozen kilometers would require cleaning the windshield, which was covered in insect debris. Today, it's no longer necessary. Bees are the first victims of massive pesticide spraying. At this rate, an entire branch of the tree of life will soon disappear, followed by a significant portion of bird species. To add to this sad observation, in rural areas, fields and woods are now often off-limits to children, marked as private property, and mushroom picking is prohibited! Everything is for sale, and city children are not allowed to venture into nature.

*It's early afternoon, time for an experience: 41 minutes.*

We have arrived at our destination. It has been about twenty years since I last came here; it was for Emilie's father's funeral. Like her, I spent a good part of my childhood in this small provincial town. Memories come flooding back as soon as I step out of the train station; the general layout of the place is familiar to me. Among the changes, in the middle of the square by the train station, there's a bronze statue. It seems quite well-crafted and could honor a person who has contributed something important to humanity, like Pasteur or another scientist. I approach it, and there's a bronze plaque on the white marble pedestal. The name means absolutely nothing to me, and for good reason; it's an obscure deputy, at least according to my values.

Why all this honor? It was the mayor's decision to erect the monument

using public funds, following a stupid provision introduced long before by an egotistical Minister of Culture. Since then, every municipality in France has to allocate a certain percentage of its revenue to culture and art. Instead of entrusting this money to museums or the ministry responsible for monuments, it's the simple mayor and his councilors who decide on the embellishments. He deemed it more important to honor an obscure politician than to honor a scientist or great writer. Just another example of the absurdities generated by decentralization and democracy taken to the extreme, welcome to French ochlocracy!

A prosperous society mobilizes resources for a limited number of projects, while a declining society squanders them in numerous, unnecessary, and mediocre sectors.

Something else has changed in this square by the train station. The facades of residential buildings and hotels have a gloomy look. The pale January sun fails to revive their dirty colors. Where there used to be a high-end hotel called 'Terminus' and a large brasserie serving grilled dishes, cassoulet, or even sauerkraut in winter, there are now only fast-food establishments offering unappetizing kebabs or burgers. The outdoor seating areas encroach too much on the sidewalks, but the municipality turns a blind eye; the clientele here is primarily what is discreetly referred to in France as "diversity," Black and Maghrebi Africans. I have made a reservation at a hotel a few hundred meters further down. We walk there with our rolling suitcases. Along the way, we pass bakery-pastry shop windows. They sell a local specialty called a 'Suisse,' named after the guards who ensure the Vatican's security (a pope stayed in the small town a long time ago). It's a simple shortbread pastry lightly flavored with orange blossom water and shaped like a clown.

Claire is surprised by the displayed prices! They are completely out of touch with the average purchasing power of the town's residents, four to five times the price of an Italian brioche like panettone for the same weight, and without any decorative packaging! The comparison is justified because historically, the Dauphiné region in France and the Milanese region in Italy, located on either side of the Alps, have many similarities. Personally, I'm not surprised. Having lived in underdeveloped countries, I am aware of the tendency of inhabitants to overvalue even their smallest achievements. The poorer the country, the more any accomplishment is considered exceptional. We settle into our rooms. While Claire and Luc stay at the hotel, I make my

way to the old town.

I want to make sure everything is ready with the funeral home. Along the way, in many places, the municipality has replaced the trees. Instead of the local varieties like plane trees, mulberries, or maples, they have chosen palm trees, a nonsensical idea. It's true that plane trees had suffered from diseases, but did they need to be replaced with palm trees? What would people think of an African mayor who decided to plant oaks, beeches, or lime trees in his city? They would ridicule him or immediately suspect him of corruption. Gardening companies created to beautify cities have replaced the roundabouts and traffic lights that previous generations of French mayors were so fond of.

Instead of the former upscale fashion store, there is now a private bank, one of the largest groups in the country, displaying insolent prosperity on its facade. It offers bank loans at a rate it considers very favorable, 2.7%, almost a gift to French borrowers! One might shed tears of gratitude, except that this money comes from the European Central Bank at a zero-interest rate, in other words, money derived from the tax levies on Europeans. A private bank fattening itself with taxpayers' money! Ironically, not far from there, the former Bank of France is closed.

*I arrive in front of an association's premises.*

It focuses on activities for seniors and receives a small annual grant. Wasting public money is a great French specialty. The town is in a state of decline, having lost a significant part of its productive activities. Despite this, in addition to unnecessary expenses aimed at excessively beautifying the city, it provides aid in the form of subsidies to all sorts of mostly useless associations, whether sports or pseudo-cultural. Moreover, these benefits only reach a minority of citizens; most French people are not affected. The real objective for the mayor is to make the entire population believe that he is concerned about their well-being. It's only meant to secure re-election, so that the rat remains in the cheese. There are associations for every taste, those that bring together Argentine tango aficionados, "pétanque" players, stamp collectors, hedgehog defenders, and many others.

I have arrived at the funeral home, a somber place. Everything seems to be in order as I had requested. I return through a small street. I pass by a café exclusively frequented by native Maghrebi Muslims. Whether they are French or not, they all speak Arabic, and of course, no women are allowed in the

establishment. Gender equality only concerns white Europeans; silently, Islam imposes its law. I walk by without even glancing inside; it would be frowned upon; this is no longer France.

*I am Theo, Tuesday, January 10, 2012, early afternoon.*

Luc and Claire are sitting in the back. The taxi drives around a large, ugly urban area, consisting of sad concrete cubes mixing social housing, public buildings, and sports fields. Among other things, I can see a dance school, a university annex dedicated to humanities and soft sciences, sociology, psychology, philosophy, all fields that obviously will not restore the former glory of the city; they will only further condemn a city ruined once by deindustrialization and a second time by the crazy indebtedness contracted with banks by successive mayors. The vehicle enters the street I used to take every morning to go to school. Childhood memories come back: I recognize the austere facade of the prison made of large white limestone stones. It is cut by a rounded porch closed by a black gate. In front of the adjacent gate, many women are waiting on the sidewalk for husbands or partners often involved in drug-related matters. Other citizens are detained only for minor reasons, or at least that's what one would think in other countries. They will have to wait for the French justice system to decide their fate, and that can take a long time. Good news for all the thugs and crooks: they will soon be better treated, housed in an ultra-modern prison set up on former orchards near the city. As for the old buildings, there is talk of transforming them into a nursing school; they don't deserve anything better than that in today's French society.

Just after the prison, on the right, I recognize the old grocery store where I used to buy marshmallow lizards, seashells filled with caramel, and when I could afford it, a 'Turc.' That's the name the Armenian merchant gave to his cakes, two layers of short crust pastry separated by a layer of raspberry jam. The top layer, covered with white powdered sugar and cut with a cookie cutter, revealed a beautiful blood-red color, a reminder of the genocide.

We finally enter the neighborhood where Claire's parents used to live, a bit away from downtown. The houses are mostly modest, with the kind of post-war French urbanism that leaves one indifferent. Decorations are rare, no money to waste. Typical house: an unremarkable facade covered in a sad cement-colored plaster, on the ground floor, two windows framing a door, upstairs, two more windows and metal shutters, cold in winter and scorching in summer, a double-sloped roof covered in flat tiles cheaper than the round



Roman ones, a small garden. Only nature knows how to bring a bit of cheerfulness to this architecture. Clumps of blue irises and yellow forsythias bloom in spring, during the season of climbing plants, ivy, bindweed, Virginia creeper, wisteria, and morning glories colonize the walls. As for the tamarisks, they turn orange pink in summer. On the street side, most iron gates are poorly maintained. The occupants are often elderly, forgotten. Many children have left; with the city's economic decline, there is no work for them locally. So why bother repainting, why bother maintaining?

*At the church.*

The small church hasn't changed. It was built in the 1950s, right after the war, on a budget. It was a time when people still believed that Christianity always had a future in France. From the outside, it looks like a shed if it weren't for a cramped tower attached to the central block, serving as a bell tower; at its base, there are a few poorly maintained concrete flowerpots. It's one of those places of worship that are only open from time to time; they are becoming fewer and fewer; priests go from church to church to hold a few masses or ceremonies. That's the case today for Emilie. Under the large awning, two elderly people are talking, old-timers from the neighborhood. The hearse is parked on the side. We enter. The funeral home employees are finishing the placement of the coffin; it is already placed in the central aisle just before the steps leading to the altar. They place a large cross made of natural flowers on top, which I ordered myself, in shades of pink and mauve, the colors Emilie liked. On each side, there are two large wreaths of white lilies, flowers that I don't like, with a lingering smell, also a symbol of the oppression of priests and kings. A parishioner comes to meet us. He, along with a few others, prepared the songs and prayers.

The priest arrives and greets us. In total, we must be no more than a dozen. It's as if Emilie had never lived in this neighborhood, as if we had nothing left to do here. The only element that brings a bit of joy is the large stained-glass window at the back, behind the altar. Modern and bright, it emits an orangish light, rays of spirituality. It makes you forget the ugliness of the concrete nave. The service is short, with songs and prayers in French. Gone is the magic of Latin, what stupidity! Once translated, the phrases only reveal the naive, silly, and hollow aspect of worship. They freeze into everyday normality a vocal practice to which everyone could give their own mystical interpretation. What would become of a secret society whose every meeting could be attended by everyone? The Christian religion gets bogged down in

its own contradictions, led by a pope and cardinals who are increasingly mediocre. Deprived of the support of intellectual excellence, the Christian Church turns to the most disadvantaged, gullible, or least intelligent humans. Claire and Luc sing and pray; I abstain, I've never been good at that. After half an hour, it's communion time. Two old women consume a communion wafer, I will never know if they knew Emilie or not. The ceremony ends. The participants file one by one at the back of the coffin, sprinkle it with holy water using a holy water sprinkler, sometimes make the sign of the cross before returning to their seats. The coffin is carried away by the funeral home employees, accompanied to the church entrance by the priest, as if to signify that Emilie will never return. The Christian Church will have definitively lost one of its earthly sheep, gone to heaven. Claire, Luc, and I follow them and stop at the porch. The last painful obligation is for the faithful to file one by one, shaking our hands, sometimes murmuring a few words of condolence that we don't listen to. I discreetly slip an envelope to the priest, and then we head to the cemetery.

*at the cemetery.*

It overlooks the city. It's a grid of pathways lined with tombstones, funeral chapels, and some imposing vaults. Every inch of ground seems counted and cataloged. Emilie's family vault is open. The undertakers have moved the heavy granite lid on rollers. The coffin is already there. One last tribute. Once again, the priest hands us the holy water sprinkler, and one by one, we sprinkle the wood with sacred water. Claire cries, Luc struggles to hold back tears. They prefer to step aside. I wait until the end. The coffin is lowered with ropes. An employee goes down a ladder into the depths of the vault to make the final adjustments. Once done, he climbs back up and removes the ladder. The heavy granite slab is put back in place. It all smells of despair, the antechamber of purgatory, but that's what Christianity wanted: to remind man that he is nothing, nothing before the greatness of God. For me, it's like the end of a time, the time of our childhoods, Emilie's and mine. At this moment, I think of our dreams of youth, which we will not have fulfilled. She would be happy to know that Luc and Claire are about to do so on the Atlantic West Coast. The priest and undertakers have bid their farewells after the final condolences. A few more moments of reflection.

Luc approaches. He points out to me that the tombstone has not been engraved yet. It's planned, I assure him. The cemetery is sad; I find myself dreaming of those American cemeteries, with tall, majestic trees, lawns,

modest tombstones scattered as if at random, the calm and serene nature. It's in such a setting that I would have wanted to see Emilie rest. Here, there are too many neglected graves and so many inequalities among the dead, grand stone chapels of the wealthy families from the previous century, small humble graves, a slab, a cross for the poorest. The only real vegetation, close to the ground, are withered heathers, sinister cypresses pointing towards the sky; at least they don't take up much space. As for the dreadful plastic flowers "made in China," their faded color is an insult to nature. In one pathway, the graves are no longer maintained: broken porcelain, rusted ironwork, displaced slabs. I try to decipher the inscriptions eaten away by rain and wind, covered with lichens or ivy. Next to one of them, a military medal is engraved. The Great War of 1914-1918 that decimated so many French families, dealt the first fatal blow to France's past glory! Many of these dead had no descendants; they didn't even have a life! Today, it's a boon for the city hall because there's a waiting list. Those without perpetual concessions will go to the common grave, heroes or not!

*A note from Theo written in Pointe Rouge.*

How can we forget Germany's frightful responsibility in the decline of Europe? How could such a brilliant people come to this, allowing themselves to be intoxicated by power? It's impossible not to recognize the reality: the carnage, the massacre of European youth who were about to lead humanity into an age where everything seemed and would become possible. How can we silence the responsibility of the princes still in power, that of politicians, the cowardice of religious authorities who should have immediately condemned and acted by asking everyone to lay down their weapons. A crime against evolution. Let all these murderers and cowards, princes, priests, or politicians be forever discredited! They deserve to be prominently displayed on a monument of shame, even if it's virtual.

To leave, we head towards the lower part of the cemetery. The state of the graves is even worse there. Near dislocated tombs, in the shade of a few cypresses enriched by water runoff, many chapels have been stripped of their sculptures or wrought iron gates. The antique dealers have helped themselves! The fact that many cemeteries are neglected no longer interests anyone in France. In the past, during my childhood, on All Saints' Day, November 1st, the French would go to cemeteries and leave flowers. The night of the dead existed long before Christianity. The departed were honored on this occasion in the oldest civilizations of the Fertile Crescent, in Senout's time, for example. Much later, on the night from October 31st to

November 1st, the start of the new year and winter, the Celts honored their dead. All these impious people claimed to communicate with their dead, heresy for Christianity! Let the living wait for the end of time for that! In the 8th century, the papacy finally substituted a feast of all saints for the cult of the dead, simultaneously abolishing ancestral rites and customs. As for France today, it fears death. It refuses to talk about it and hides it, the spiritual misery of the West!



Dall-E prompt : Zeus, Jesus in a stormy sky with lightning, watercolor.

## Paris

*Immersion: I am Theo, Paris, Emilie's apartment, Thursday, January 19, 2012, duration of the experience 44 minutes.*

I find myself alone in Emilie's room; Claire and Luc have just left for Boston. I have to start a painful task, the administrative formalities; it involves removing Emilie from society, notifying her death to the pension department, the health services and mutual insurance companies that provide compensatory benefits, the public treasury, and canceling her phone subscription. I open the wide and deep middle drawer of her desk and start looking for the various addresses. I will also have to take care of the utilities for the water, electricity, and gas in the apartment. After that, for Emilie, it will truly be over; I will be truly alone. Even though we were separated, in my heart, I was with her. Claire and Luc would like me to spend a few months with them in Boston, and the rest of the time, I could live here in Paris. I'm still hesitant. I go to the kitchen with the intention of making myself a coffee. It's a very small room that faces the inner courtyard. This courtyard, like so many others in Paris, is a simple rectangular space with a paved floor, a garbage bin, cats, and bicycles. The old "Philips Radiola" radio that withstood the African climate is still working; I listen to the news, switching from one channel to another. French journalists have their preferences, recurring themes: the unfortunate migrants, the priests and their sexual deviances, in France, they still "eat up the priest," the disabled for whom we can never do enough, women earning lower wages than men, lazy and incompetent civil

servants! On the contrary, they excessively praise sports; listen to them, and soon the French could retrace the course of evolution, climb back up the trees, become monkeys again! They never mention the best things about France, for example, technological achievements, it doesn't interest them or rather it doesn't interest them anymore, as it did in the time of their ancestors, proof of the incredible decline of the country. If I want to know what's happening in the world, it's better to go on the internet, even though the French version of Google is also biased, as is the case in every country; not displeasing the local authorities too much! However, I like this old radio and I continue to gather information from channel to channel.

A piece of news has been making headlines for two days; according to journalists, it's a remarkable feat, the crossing of the English Channel by a man who is double amputee. To accompany him, there's a boat, divers, a helicopter, and television crews! I can't help but think of all the disabled people in life and this absurd non-event. Supposedly a response from society to the issue of disability, it's nothing more than a cruel joke. A disabled person turned into a sideshow attraction, just like the amputees crawling on the parvis of Notre Dame in the Middle Ages. Voyeurism! The answer certainly isn't there. A truly supportive and generous society would instead focus on funding a rehabilitation institute, a research center aiming for artificial limb transplants; disabled individuals would find employment there. There is no doubt that in this new life, they would feel valued and useful.

All in the name of equality, what an aberration! Yet all French people follow, admire, mentally conditioned, mediocre sheep of Panurge! Confirming what I think, another news is announced, also supposed to be of great interest, a new case of pedophilia among Catholic priests! In France in 2012, the media attack teachers, police officers, and the Church, while showing benevolence towards Islam. Political authorities take great care to distinguish between evil Salafist Islamists and other good Muslims, and as for the terrorist attacks that take place on French soil, these same authorities try to make it seem like they are solely the work of Muslim countries. But what do they care about France? It's China that matters to them now, and of course, the USA! They're trying to make us forget that these attacks are most often carried out by Maghreb immigrants who couldn't integrate into society, one of the results of the senseless immigration policy pursued for the past twenty to thirty years. The best Maghreb individuals, overall, have found their place back home, in Tunisia, Algeria, and Morocco; the same goes for Black

African nationals.

*Past midnight.*

I tune into the radio to find a not too mediocre station and a good surprise, I find one, "France Culture." Quality and interesting programs. Could all not be lost?

*Immersed: I am Theo, Emilie's apartment, summer 2015, August.*

Since Emilie's death, I've been living in Africa, and like every year in August, I'm back in Paris in the apartment I bought from the children. The center of Paris in the summer: I wander the streets, but not the ones favored by tourists. Are Parisians happy? I doubt it! Many of them seem sad and ugly, worn out, tired even before they start working in the morning, exhausted from the commute from the suburbs in dirty and overcrowded metro cars. I wish the mayor of Paris had to take this means of transportation every morning; maybe then he would understand the reality of things. Ordinary people have been driven out of the center by greed.

When I was young, the middle class could still afford housing in the capital. The price of housing was allowed to rise freely, under both left and right-wing governments. The result: four months of average salary needed to acquire just one square meter, over three years for ten square meters, over nine years while dedicating only thirty percent of the salary, forty-five years for fifty square meters, more than a lifetime of work. These numbers alone show the extent of the scandal. Again, I would like all politicians to be banned from living in Paris so that they truly understand what they have done.

This France, which signed the Universal Declaration of Human Rights, constantly playing the role of a moralizer, has not respected the right to housing of Parisians driven to the suburbs. And don't dare say that nothing could be done. In France, the elected president is a king for the few years of power they exercise. Perhaps that is where one should look for one of the origins of this scandal!

Is Paris such a beautiful city? I have my doubts. Are we being chauvinistic? Many gardens are poorly maintained, the city is dirty, infested with rats. The Eiffel Tower and museums are practically forbidden to French people, overrun by foreign tourists. Yet it's presented as good news; international tourism would be essential for the country's financial salvation. So, if that's true, poor France! Treasures like the Sainte Chapelle, yes, and the grand museums, but also many mistakes and ugliness, the hideous mass of pipes

installed near the former central market, those incongruous and even ridiculous columns placed in a courtyard of the Louvre, the congestion of unsightly barges on the Seine. And then there's what is not mentioned, only dared to be denounced by foreign media, namely all those neighborhoods off-limits to native Europeans. So yes, the city may seem beautiful to the wealthy, but only to them. Paris, an overly praised capital, Paris Bobo, Paris not beautiful!

*One o'clock.*

I'm going out to visit Bernard; he runs a bar on the corner of the street where I live and the main boulevard that leads to the Seine. I must be one of his oldest customers; I used to come here when I was a student. He stands behind the small tobacconist counter that complements the brasserie corner; as soon as he sees me, he throws a "hey, the African is back?" I reply, "like every year," ask how business is going, "meh, not great!" He shouldn't count on me to pity him! One day, he had the opportunity to buy the bar, lucky break, the owner-operator was leaving the premises. At that time, acquiring a business in Paris was still possible without having to spend a fortune. A few years later, he obtained a license to sell tobacco and lottery tickets; the business thrived.

After getting divorced, he also bought another vacant business further down the street; he placed the former waitress who worked with him at the bar there, his mistress and the cause of the divorce! Most of the time, the American candy store is closed, but it doesn't matter; Bernard explained to me one day that the losses from the store are deducted from his taxes. His partner has a salary without hardly working, plus social benefits. He has already planned to declare bankruptcy in two years; she will be entitled to unemployment benefits, while Bernard opens another business, and they start over. It's not more complicated than that. Bernard is cunning. On top of it all, the French government pays him a subsidy to compensate for the decline in cigarette sales, the consequence of an anti-tobacco campaign funded by the same government! France is good, and not just for Maghreb or black immigrants!

His next business? Clothing. He has already calculated everything. He will declare ten items sold to the tax authorities, when, in truth, he sold thirty. Moreover, for all the undeclared items, in addition to the profit from the sale price, he will pocket the value-added tax that the customer has paid him. If I point out to him that it's cheating, he responds that others do much worse.

He knows well that a locksmith or a plumber charge twice as much per hour than a teacher. And then there are all these "blacks," those in France and those from faraway islands like the French Antilles and the island of Réunion; according to him, they mostly live off welfare. Despite being part of France for a long time, nothing good has come out of them, no engineers, no researchers, they are a burden! Bernard, on the other hand, is a true Frenchman, a Breton for generations. He could almost be more French than people from Alsace or Provence! So why shouldn't he cheat too? He is even proud of his success; his mother came to work in Paris before the war as a simple maid for an affluent family.

I order a ham and butter baguette sandwich with a coffee, just like when I was a student. It's a rare miracle in Paris—the sandwich is still good, the baguette is crispy, the butter is fresh, and the ham is real ham, not the low-quality shoulder from a canned box like you find in the big brasseries in Paris. I even get some pickles! That's the good side of France: an incredible variety of food and recipes, the result of the convergence of all European cultures.

Suddenly, I think about all the excesses, aberrations, and injustices of French society, the lost legacy of 1789. Has France become a haven for cheaters and parasites? Quite possibly. When you look at the standard of living of the French, you wonder how they manage to pay for all their expenses. It would be interesting to freeze everything in an instant and ask everyone how they finance their lifestyle. How can one afford to drive a luxury German car that costs thirty times their declared monthly income? How can another person take their whole family on a skiing trip while being unemployed? It would also be interesting to ask employees of the Treasury Department why they turn a blind eye to all the trafficking and cheating, why they don't intervene. Fewer and fewer French people engage in useful work, yet they are the least well-paid. It's undoubtedly a sign of a society in severe decline!

The many French people who manage to live well most of the time do so through more or less legal means. Under these conditions, few people would be willing to denounce the real excesses of a society in decline. When will France stop mocking the banana republics of the African subcontinent? It has become one itself! A thorough cleaning of the Augean stables is necessary.

Who is truly useful in France, where are the driving forces? Except for the underpaid state civil service that handles essential tasks such as education, health, justice, police, the military, and a few others, except for the workers, technicians, and engineers who are also poorly paid, and the farmers, all



other French people receive much more than they contribute to the country. Many enjoy unjustifiable privileges, from employees of the national railway company to journalists, and even the most recent layer of parasites, the so-called local civil service, with lifelong employees hired primarily through local connections rather than national merit. Most of the time, these are low-skilled jobs that would normally belong to the private sector as cleaning staff, secretaries, receptionists, municipal employees, gardeners, garbage collectors. It's a way for local politicians to ensure their re-election. The French-style decentralization is a stupidity, an aberration, a waste, piling on an additional layer of administrative parasites! Initially presented as a means of empowering the French people, it has done the complete opposite (empowering only a few additional rats that nibble on the common cheese).

### *Two o'clock*

I leave the bar and head back to the apartment. Once I arrive, I continue to ponder the sad state of France. The collapse of the education system is largely due to the insane immigration policy that continues to bring North Africans and Blacks into France. Their poor academic performance and lack of discipline have contributed to the decline in the quality of schools and high schools. Anyone who has been a teacher knows that one or two troublemakers are enough to compromise the work of an entire class. Measures should have been taken to crack down or place the young newcomers in special, more supervised classes. The decision to allow all students to access all levels of education is the second essential factor in the decline, specific to France within Europe. Forced immigration, a worm in the fruit, the result of egalitarian ideology—welcome to bobo-land-Paris, the land of self-righteous people who have turned the South American Che into a god. Associate with them, and they'll explain to you that a well-trained poodle could guard sheep just as well as a Pyrenean shepherd dog.

The education of children has become one of the main challenges for the middle class, who strive to access private education at all costs. At least private schools still have the courage to fight against drugs and expel the wolves that sneak into the flock. Today, France has by far the highest number of cannabis smokers in Europe and the highest number of North Africans! How can we be surprised that the most talented young people leave for America or Asia?

Those who remain in France are those who can obtain desirable positions through inheritance or connections. However, politicians refuse to admit this

reality; they even distort statistics by claiming that as many French people come as those who leave. When an African enters, a white European leaves the continent; for them, we have a balance ! Any attempt to reason with them is immediately labeled as a racist attitude. The writings of some sociologists about primitive peoples in South America are admired by French philosophers: rejecting any foreigner beyond a threshold of a few percent to preserve one's own culture is considered wise. It's good for savages, but France knows how to integrate!

Regarding the healthcare system, it's not much better, progressive delisting of numerous medications, the prospect of mandatory supplementary health insurance from a private company for everyone, fewer and fewer hospital beds, a glaring lack of scanners and other specialized equipment in hospitals, staff shortages, hospital administration entrusted to administrators who are not doctors. Healthcare professionals constantly call for help, they raise alarms, but no one listens. If a pandemic were to occur, I'm not at all sure that France would be able to handle it. Will there be enough oxygen in the intensive care units in Lavoisier's country? Will there be sufficient means of protection and testing in Pasteur's country? It's a real risk associated with the increasing proximity of our contemporary human societies.

### *Seventeen o'clock.*

I'm listening to the radio, news from Bangui on a specialized French station. Unbelievable, they're talking about a case of French soldiers who allegedly delivered young African girls to dogs. Can't believe it, it sounds like the Jarlon affair! Journalists suggest that the French army is trying to cover up the case. Even worse, the French President himself feels compelled to react, adding his own stupidity to that of the journalist. Horrified, he declares to the press that the honor of France would be tarnished if the accusations turned out to be true. How did we come to this point? Where has the honor of France gone, the morality of our leaders?

To get back to French journalists, as the previous example shows, one of their favorite topics is anti-white racism. They put on the cloak of moralizers who defend equality, fight against skin color racism and religious racism, although they can't distinguish one from the other. Any subject involving an immigrant of African origin is treated from a benevolent perspective. On the other hand, topics concerning native French people are approached with a malicious bias.

The self-censorship of journalists even leads them to not mention or write the names of delinquents when they come from African immigration; the ignorance of journalists about the realities of the Black continent is appalling! The few white people who used to go on safaris in the past made the management of considerable wildlife reserves viable. The operators of these areas effectively fought against African poachers, protecting endangered species, particularly the last rhinoceroses. I was able to see it for myself when I was invited by them, even though I only took pictures. Since most of the white managers have left, the massacre of wildlife is ongoing, but these same journalists who denounced safaris are now silent, concealing the massacre of elephants in the large parks of Central Africa and, more generally, the wildlife in Black Africa. It's not much better for smaller species. Pangolins are being slaughtered, and their scales are being shipped by hundreds of kilos to China.

Returning to French journalists or aspiring journalists and to further emphasize the point, their immorality seems to be a common characteristic among many of them, and it's not something new. We can remember the filthy libels against the queen during the time of the monarchy, the zoophile sexual fantasies of journalists accusing the last Shah of Iran of delivering women to bears... One would think that in this environment, nothing is forbidden when vice meets stupidity! But these sad characters are always convinced that Iranians live better under the current regime of the Ayatollahs.

More recently, some irresponsible journalists targeted, so easily, the image of the Prophet Muhammad, with serious consequences. These narrow-minded people never consider themselves responsible for anything; worse, they claim to guide society. When decent people denounce their behavior, they immediately wave the Declaration of Human Rights, invoking freedom of opinion! Their immorality is unbearable and will inevitably lead sooner or later to the restoration of a certain form of censorship; they will be the first ones responsible for it.

### *Twenty-two o'clock.*

An American series on television. Our French intellectuals criticize American productions; according to them, they are ridiculous, with Marvels, Spider-Men climbing skyscrapers, Batmen, mutants, naive storylines. However, it's hard not to admire the production, even the supporting actors play well, better than any lead actor in France. It's clear that they have been trained in excellent institutions, far from the amateurism of French cinema. There are too many public subsidies that help friends! When it comes to

exporting, French production is crushed.

As for the Cannes Film Festival, which takes place every year on the French Riviera, it blatantly and deliberately ignores a significant portion of Anglo-Saxon film production that doesn't seem intellectual enough to them!

## **seaside**

### Pointe Rouge

*I am Joy, Underground, Project Nemo, elapsed time: 0 hours 46 minutes. Immersion: deep-diving mode. I am Luc, my uncle, in Black Africa, Gulf of Guinea, near the equator, on Saturday, December 5th, 2015.*

It's evening; the flight from Paris is on time. A long queue, I wait at passport control. Some privileged individuals enjoy a fast track, embassy personnel, NGO employees, African dignitaries, and simply acquaintances of the control agents. I collect my luggage and exit. The atmosphere is familiar, a crowd of black people jostling; some raise their arms, holding roughly made signs with the names of visitors or hotels, while others offer taxi services directly to isolated and disoriented white individuals amidst the chaos. It's the joy of African family reunions, noise, colors, and good spirits, heat, humidity, and local smells. I spot my father and signal to him; he makes his way through the crowd and embraces me.

### *Hibiscus Hotel.*

The large compound is delimited by three long whitewashed walls, internally lined with mango trees; the last side is fully open to the sea. I used to come here often as a child. It's surprising that the establishment still exists, a true little corner of tropical paradise as the white people in Africa knew how to create before and just after independence. Round huts, enlarged and rebuilt with concrete pillars and breeze blocks, are scattered in the exotic greenery; they are covered with a thick light brown plaster. The small windows of the suites they house are emphasized by prominent white frames, and even though the old slat glass panes have been replaced by modern ones, I don't feel out of place. Thatched roofs complete the impression of authenticity; they are now securely attached to a proper corrugated galvanized iron roof. Circular concentric pipes placed above with sprinklers ensure fire safety.

We walk among the rooms through a labyrinth of small concrete paths; large lime-whitened stones line them until the wider alleys near the pool. Everything is impeccably clean, including the water in the vast basin; at the bottom, blue mosaics depict dolphins, mermaids, and the god Neptune. Behind the pool and set back is a very large rectangular hut, the restaurant.

Our room is one of the best located, facing the sea. It also overlooks the large lawn lined with coconut trees that separates the beach from the pool. After dropping off my luggage, we meet up for dinner. It's the end of the dining service, the band has almost finished their repertoire, playing lounge background music. The table reserved by my father is by the poolside. Like all the others, it is covered with a white cloth made of "bazin" fabric with shiny satin flower patterns on a matte background. A small bouquet of white frangipani flowers mixed with a pink-purple bougainvillea twig adds a touch of color. Everything is tasteful, and the evening clientele, a mix of locals and foreigners, is discreet. Here, they can forget the bustling life of the big city and enjoy peace and tranquility. The waiter in a white uniform takes the order. We'll have shrimp cocktail and pizzas for the two of us, along with two local beers.

*My father:*

– I didn't want you to drive at night, and I thought you would prefer to stay here rather than in downtown's impersonal hotels in the administrative district. But you're probably surprised that the establishment still exists?

– Yes, and pleasantly surprised, to be honest, I didn't expect it. You've kept your habits. I also notice that it's not crowded.

– You're mistaken ; the hotel is full. Right now, there's an agronomy seminar organized by the Ministry of Agriculture. When I arrived yesterday at noon, there were easily a hundred guests. Thankfully, I had reserved a room in advance. Tonight, it is special; there's a cultural event in town, so they've all gone there. Tomorrow morning, you'll see how busy it gets during breakfast.

– Is it still managed by a white person ?

– No, he sold it three years ago to an African who is managing it quite well. I thought it would go downhill, but not at all. Even though expatriates hardly come here anymore, except for a few old-timers like me. The white or Asian business clientele prefers international chains, with the same rooms as in London, New York, or Berlin, standard carpets, seaweed soap, muesli for

breakfast, a small, carpeted cube in a stupid concrete monolith that disfigures Africa, with two coconut trees by the pool. But that way, foreigners don't feel out of place and consider themselves safe. Even NGO employees are staying here now. So, to compensate, the new owner tried to attract a share of the conference clientele, both local and regional.

The business seems to be doing well. Moreover, major booking websites send tourists here. And, most importantly, if you like it, that's what matters. I forgot another advantage; we're north of the capital, so by leaving tomorrow morning, we can avoid the traffic congestion.

The pizzas are excellent, cooked just right in the wood-fired oven. My father explains to me that in the past, the chef used to replace mozzarella or Gruyère with Cantal cheese. By the time we finish, the restaurant is almost empty.

– Tomorrow for breakfast, it would be best if you come before seven or after eight-thirty.

– Why ?

– You'll see for yourself about the seminar I mentioned. In the morning, it's chaotic. Until eight-thirty, when the meetings start, the buffet is swarmed. After that, the staff provides a second service for tourists. But now I suppose you need to rest. You'll decide what time you want to wake up tomorrow; the drive isn't long.

We leave the restaurant.

*Immersion: Inside Theo's thoughts.*

Luckily, Luc wasn't there yesterday afternoon when I was sitting under the large rectangular hut, away from the big table of conference attendees. He would have had to endure the hateful and provocative remarks of a mixed-race Black man, with a fairly light complexion and a thin face, undoubtedly Rwandan, both physically and politically. His president is one of those who only know how to govern through hatred of others, an age-old recipe. For both the conference attendee and his president, the usual target is France. His version of the truth is that white people orchestrated the genocide, the inter-ethnic massacres that occurred in Rwanda about twenty years ago. For what reason? It's hard to find a good one, considering how uninteresting the country is, except perhaps from a tourist perspective. Nevertheless, he started speaking louder and louder, as if to challenge me. He didn't hesitate

to assert in a peremptory tone, loud enough for me to hear, that Africa's true challenge would be to rid itself of France, that the latter could never be a solution to underdevelopment because it was itself the heart of the problem, and he spouted all kinds of other provocative nonsense and falsehoods.

France was undoubtedly a country of debauchery where a man could sleep with a man, and a woman with a woman, where a child could insult their father and mother without consequences and even have them imprisoned, a country where old parents were locked up in retirement homes when they were no longer useful, a country where a young man could live with a woman the age of his mother. No, Africans certainly didn't need any lessons from France. Africa was by far the richest continent in the world with its enormous mineral wealth. What held the continent back was the large-scale pillaging of the country's resources organized by major powers, with France at the forefront.

More peremptory and ridiculous still, this arrogant country would be nothing without Africa, and the day African countries turned their backs on it, it would plunge into chaos. It was a psychotic delusion to which there was no response. Certainly, with such leaders, the country would not develop for a long time. If Europe had not come to Africa, it probably would not even have come into existence like many other children on the continent saved by white medicine. Instead of a billion Black people in sub-Saharan Africa, there would be at most a hundred million! He forgot about that, worse still, perhaps he would never understand it.

The demonstration was not over yet! A tall Black man in a boubou, probably jealous of not capturing the audience's attention, launched into a diatribe about African superiority. He praised the intelligence of his fellow Africans and declared that Africa would soon have many Nobel Prize-winning scientists. He too was signed in his remarks, with excessive pride and arrogance, very characteristic this time of a Francophone country in West Africa. The hosts and, more generally, the representatives of Central Africa had tried in vain to temper the two speakers. They were not fooled, knowing that they too were despised by these countries at both ends of the continent.

On my first arrival in the country with Emilie, newlyweds at the time, we were accommodated in a comparable hotel. It was so long ago and yet the memory is so vivid. It was September 1973, just before the start of the academic year. It was my first contact with the country, descending from the airplane through a classic staircase, not one of those air-conditioned tunnels

that now allow you to go directly from the airplane cabin to the airport arrival halls. With each step on the aluminum staircase leading down to the airport tarmac, the hot and humid air crept further up my light beige alpaca pants and under Emilie's light dress. Once we reached the bottom, we felt like we were in a damp bathroom.

Both of us were convinced that our work would help the country develop. In our childhood, the national education system had made it clear: Black people were the good ones, and we, the white ones, were the villains of history. Coming here was, in a way, a way to make up for the mistakes of our parents! To our pleasant surprise, the Africans didn't care about all these considerations; the welcome had been excellent. From the humblest to the most powerful residents, we had been welcomed.

Emilie had recorded in her journal her impressions of a day in 1973, a Saturday, the anniversary of the country's independence: a grand reception, a crowd at the presidential palace, guests crowding the large hall around the buffets, large trestle tables covered with white tablecloths and decorated with flowers, trays of food, Parisian-style canapés, skewers, meat dishes, abundant drinks, fruit juices and alcohol, Blacks and whites mixed together, lots of good humor and simplicity. We had never perceived any resentment or animosity towards us due to the shared history of France and Black Africa.

*Immersion: I am Luc, Hibiscus Hotel, main thatched-roof hut, Sunday, December 6, 2015, 8:45 am.*

My father must have forgotten that it's Sunday because only a few tables are occupied by Africans in boubous; I suppose the other conference attendees prefer to rest a bit longer. The staff is busy preparing omelets, scrambled eggs, bacon, and pancakes. Morning is the time for birds; some take the opportunity to quench their thirst in the pool, making rapid dives. I see gray-pink turtle doves with mottled throats, sparrows, metallic-colored hummingbirds busy among the profusion of plant species, frangipani, succulents, hibiscus, and datura with large bell-shaped white flowers. A gardener waters the paths lined with green croton plants speckled with white, elephant ears, and pink and white Madagascan periwinkles. Yellow and black weaverbirds fly off with twigs from the roofs to bring them back to their nests in the tall, red-flowered tulip trees and jacarandas. Glossy blue and black rollers come to peck at crumbs on the terrace near the tables. On the ground, brightly colored geckos, orange and blue, also await food, fond of



breadcrumbs. The sight is enchanting. Just as I have finished a fruit salad, one of the weaverbirds ventures onto my plate and pecks at a leftover piece of soft pancake. Emboldened, others hop onto the table with the intention of doing the same. Meanwhile, by the pool, a couple of white sexagenarians have just settled into the Jacuzzi and begin to splash around in the mix of water and air bubbles. Both are very large, with multiple folds of pinkish skin, the stereotype that one associates with German, Swiss, or Austrian tourists. Finally, my father arrives.

- Did you sleep well ?
- Like an angel !
- With the time difference, I preferred not to wake you up; in fact, I've already had breakfast.

My father's cellphone rings. He answers.

- Hello ! Yes, of course, it's still on. Let me pass you to Luc. I take the phone.
- Luc, hello.

The tone of the voice sounds familiar to me. While I search my memory, my father comes to my aid: Olympe! I remember, the former housekeeper of Theo when he was in Bangui. She had a daughter, a mischievous little girl, what was her name? Ah yes, Ayana, that's it. I reply:

- Olympe, hello, how are you ? This is quite a surprise.
- We will see each other later.
- That's good news, I'll be pleased. I look at my father and hand him the phone.
- No problem, we'll do that ; we'll wait for you for lunch.

He explains to me:

- Ayana can't free herself before eleven o'clock. They will both take a taxi to join us at Pointe Rouge and have lunch with us. I suppose you don't mind ?

Memories of Ayana resurface. Thirteen years ago, a stay in Bangui. Emilie

stayed in Paris with Claire. Olympe worked for my father and took care of the housekeeping. What a funny name for a black woman! Sometimes she would come with her daughter, Ayana. She must have been around eight years old, a mischievous girl with a mischievous look. It wasn't uncommon for Theo to take her with us on weekends because Olympe had no family around. I particularly remember an excursion to the banks of the Oubangui where we went to see the hippos. We also went picnicking several times on the sandbanks in the middle of the river, between Bangui and Zongo. I even started teaching Ayana how to swim.

My father interrupts my memories:

– In the summer of 2002, I had to leave Bangui after six years of stay. My contract with the French Ministry of Foreign Affairs was over. Olympe's situation became complicated. I had recommended her to an employee of the French embassy, but they didn't get along well; maybe I had given her bad habits. She ended up without a job in a country where insecurity was growing. In addition to recurring mutinies, a new danger emerged, a problem that didn't exist before, that of religious tensions: a creeping Islamization. Improvised muezzins appeared everywhere in the neighborhoods.

Moreover, the education system was in bad shape. Teachers were absent half the time, demotivated by the irregularity and meagerness of their salaries. You know how much importance and respect black people have for education, at least in Africa. Olympe was worried about Ayana, and she took the risk of returning to her home country without being sure of finding work there. I didn't hear from her until 2005, the year I signed a final work contract as part of technical assistance. Of course, here, we all know each other, and she quickly learned that I was stationed here. She came to see me and explained her situation. So, I helped her. We enrolled the little girl in school during the six years I was there with the nuns at the Catholic mission. Ayana quickly caught up. At the same time, I made a small financial advance to Olympe, who wanted to open a sewing workshop in the neighborhood. It was a good idea, and it worked well enough to support both. In 2011, I had to retire, and right after that, there was your mother's problem. You know the rest, I decided to spend a few more years on the continent.

– How old is Ayana now, around twenty-one ?

– Exactly. She has changed physically, but she still has that charm she had as a little girl. I sometimes tease her about it.

– And after high school, I imagine she continued her studies or got married ?

– In 2011, after obtaining her diploma, she enrolled in an insurance agent training program, a private course. She seemed to enjoy it, and she obtained her diploma at the end of the studies. Now she is working. As for marriage, no, even though there are plenty of opportunities.

– It's amazing !

– She is very attached to Olympe, and above all, she has many principles, thanks to the education from the nuns at the Catholic mission !

– Do you see them often ?

– Yes, they come regularly to my seaside retreat since I started occupying it in 2006. I thought it would please you to see them again. Anyway, over there, everyone does what they want, and you have no obligation, except maybe to help me watch the barbecue, and even that depends on whether Olympe lets us! While her mother takes care of the chores, which she can't help doing, Ayana goes swimming. As for me, apart from some maintenance and occasional repairs, I usually settle on the terrace facing the sea. Sometimes I go to the village to get fish and fruits. The house is quite big, there is enough space for everyone.

– I thought it was just a fisherman's shack.

– No, not really. I said that as a joke. When Greeks and Lebanese were still numerous in the country, it was their weekend residence. They practiced big-game fishing. Pointe Rouge, where it is located, is about sixty kilometers north of here. There is a river and on the other side a fishing village. You might remember, that's where we took the canoe to visit the Pygmies?

– It's been a long time, but I remember something.

### *Nine o'clock in the morning.*

We're leaving. The exit from the capital towards the north is easy. The buildings gradually change; concrete block walls give way to earth walls, tin roofs to thatched roofs. The more remote neighborhoods still have access to water and electricity, but through makeshift connections, a tangle of poles and electric cables connected to the national electricity company's installation along the roadside. The sides of the road are getting dirtier, and only the main streets are paved with asphalt; the side streets are made of rough, undulating laterite. Once or twice a year, earthmoving equipment

comes to scrape them clean. Beyond the suburbs, the road is almost entirely straight; on the right, here and there, there are huts surrounded by cassava crops, and further on, vegetable crops. On the seaside, there are clusters of reeds, fig trees, and coconut trees. The only reminder of modernity, apart from the power line running alongside the road, are large billboards extolling the virtues of laundry detergent, cocoa mixes for children, basic medicines, or mobile phone services. As in many other countries in Black Africa, paying phone bills has become a priority long before water or electricity bills. The coastline becomes increasingly wild and monotonous. It has already been an hour since I've been shaken in the old, burgundy-colored Japanese pickup truck. The beach is littered with plant debris brought in by the sea, coconut palm fronds, leaves, and branches, piled up to form lines and curves. The forest gradually approaches the shoreline, almost reaching it in some places. My father reassures me:

– We're almost there.

At the end of a very long beach, the coast curves slightly westward, and I catch sight of some reddish rocky outcrops dominated by a building. The river is still hidden, but a little further back, surrounded by the rainforest, we can make out a few houses and canoes on the beach. That's the fishing village. We arrive at the villa. Automatically, I check my smartphone; the network logo promises communication, but mobile internet is no longer working. My father parks the vehicle under a half-rusty tin shed attached to the main building. It contains a pile of fishing accessories, rods, reels, nets, landing nets. There are also harpoons for big-game fishing, old engines, and a resin outboard clearly out of use.

– Do you recognize it ?

– I don't see the river.

– That's normal ; it's a bit lower down. Look, you can see the concrete bridge. The ferry used to be at this level. It goes up to the first Pygmy village. Despite the ever-increasing pressure from logging companies, the entire hinterland is still a nature reserve.

The single-story villa must be around one hundred square meters on the ground. It is securely anchored in the rock with concrete stilts. At this spot, there is no fear that the sea will encroach on the beach, as often happens

elsewhere. A beautiful corner terrace, raised on pillars and partially covered, offers a view of both the sea and the village. The tin roof is dotted with rust stains and patched holes. There's a satellite dish; internet access is well planned. We enter. The house is adequately maintained. The furniture is simple, mainly wicker tables, chairs, and shelves, canopy beds with mosquito nets. I see air conditioners, but their effect may be limited because the windows still have slatted glass frames. Theo takes out his phone and calls the village. Fifteen minutes later, a fisherman arrives and offers us a huge pink carp and some river shrimps. We put them in the refrigerator, and my father schedules an appointment for tomorrow morning.

*Immersion: I am Luc, Pointe Rouge, Sunday, December 6, 2015, 1 p.m., elapsed time since the start of the dive: 0h51min.*

A yellow taxi appears at the end of the driveway leading to the coastal road. It parks at the back of the house. Olympe is the first to get out of the vehicle; she hasn't changed much, but when Ayana gets out, it's a shock. I have a hard time recognizing the little girl we used to take on outings on Sundays, teaching her how to swim. She is truly beautiful, with her curves, balance, figure, naturalness, and way of moving. Also, the way she dresses, simple and fitting, a white embroidered blouse that enhances her skin, a skirt that reveals just her knees. Pretty, fresh, an undeniable charm with a childlike expression, coupled with a teasing look as if to say, "I'm beautiful, but of course, I know it!" Indeed, she can't ignore the impression she makes on men. She is one of those women whom one can't help but love at first sight, a whole package, an alchemy that doesn't depend on skin color, culture, or any other parameter. She is beyond reproach. Suddenly, I feel ridiculous in my vacation attire. For the two of us, it's a surprise, awkwardness, restraint, or the questioning of two adults who haven't seen each other since they grew up, plus for me, there's the turmoil and confusion in the face of the stunning transformation, a mixture of astonishment, curiosity, and admiration, as well as an immediate attraction.



Ayana, Bing /create, prompts : African beauty, female model, very beautiful eyes, a soft, charming and naïve look, light brown skin, tropical flowers.

Olympe breaks the silence by offering me her cheek, and I kiss her, then it's Ayana's turn. A subtle and light fragrance of spring flowers, a delicate scent, obviously not one of those counterfeit perfumes sold on the streets of most African metropolises. It's probably my father who must bring them back for her during his trips to France, duty-free sales on the plane or at the airport. When she brushes my cheek in return, a feeling of confusion overwhelms me, and when she looks at me, I no longer know if she is a woman or the little girl I once knew. I had never really paid attention to Olympe's appearance. Women in Black Africa age quickly, and white men no longer pay attention to them after thirty, considering them faded. However, I remember what my father had told me.

It's a story passed down from father to son in the village where Olympe comes from. It extols the beauty of the women from her ethnic group, a quality already known during the ebony wood trade and appreciated by the traffickers. These "pieces of India," as they were called, were mostly free from filariasis and other diseases. The French colonizers, who had fewer racial prejudices than the British colonizers, were willing to pay a high price for them, as domestic servants and "bed negresses"! To avoid slavery, the most beautiful girls in the village were scarred at an early age, making them ugly enough to escape the slave trade. Olympe and Ayana went to settle their things in the rooms. My father jokes.

– So, can you stand Ayana's company ?

I prefer to change the subject.

– This is your refuge, has been for years ?

– As you can see.

– Do you really plan to keep living here all year round ? Why not in France?

– You mean in Paris ? No, definitely not, what I've seen in recent years doesn't encourage me to go there! Of course, Black Africa has also changed a lot, and not for the better. In trying to imitate the West, the black continent has created detestable urban environments, but if you go a little further away, like here in Pointe Rouge, you can still find authenticity. I probably spent the best years of my life in Africa; I have more memories of my adult life there than in France.

– Without permanently leaving the continent, Claire had thought that now that you're alone, you could have split your life between here and there.

– Sometimes I hesitate, I don't know yet, maybe that's what I'll do. I would love to visit Maine, which is not far from where you are, and neighboring Canada. It's one of the countries where I would have liked to settle when I was young. In the meantime, you can reassure her. This is not a life of a castaway or a hermit in a cave, just an ordinary life, the kind you seek when you start to realize that life is behind you, a life with villagers who respect me without harassing me, who still content themselves with fishing and a humble plantation, who secretly hope that their children will not leave one day for those awful cities built in the image of those of the whites.

– But don't you get bored being alone here ? Do you have any friends?

– You probably know that in the profession I was in, relationships between white people were mostly a way to support each other ; we were cut off from the developed world. Once a mission was over, a work contract of a few years completed, we lost touch. As for the others, the former ones, the stubborn ones, the ones addicted to Black Africa, to be honest, I have no idea what they have become. As for the Africans, some of those I worked with have become ministers, one of them is even the president of a neighboring country. I'm happy for them, but that was a different time, and I didn't maintain any relationships. Obviously, all of this is difficult to understand for the generations that were born with the internet. It changed everything. Yet, I don't feel isolated, and I often have visits from Olympe and Ayana.

– Nevertheless, you are socially disconnected.

– Or antisocial, that's what you're thinking, right ? But at my age, you can finally take the time to reflect.

– And to write, don't you feel the urge ?

– A real book of memories ? Would that have any real interest? Maybe for Claire and you. It's true that it would complement the number of photos I'm currently sorting out with the intention of sending them to you. As for writing, sometimes I jot down a few notes, put some remarks, viewpoints, observations about society on paper. It's more of an intellectual exercise than a structured approach. I do it like others do crossword puzzles. As for the epithet of antisocial, you know, I have always thought that I was alone. The social man is just a stage of evolution, an invention of philosophers, psychologists, sociologists. Do you really think that when a tragedy strikes you, an accident, a terrorist attack, the support of a psychologist brings anything? No more than the priests did in past centuries. In the end, it's you alone who has to overcome the ordeal.

– So you think you don't need others ?

– Others besides you and Claire, Olympe and Ayana, no. But you didn't come to discuss my solitude. We'd better talk about your stay, what we could do after the excursion to the pygmies scheduled for tomorrow.

*I am Luc, same day, mid-afternoon, after a nap.*

I'm looking at old photos with my father. I intend to bring back many of them to Boston, not to lose these precious memories. Among the already yellowed snapshots, low-resolution Kodak-disk from the 1980s, Polaroid instant photos, there are also excellent black and white images taken with Theo's old Nikon Nikkormat film camera, and a whole series of slides that are worth scanning. 1975: a snapshot of my mother, young and radiant, in a white cotton dress. She is sitting in a cozy wicker chair on the terrace of a colonial-style hotel overlooking the sea; below and in front of the ocean, there is a freshwater pool and another one with seawater. In the next photo, my mother is wearing bush attire, beige colonial-style clothes and a large straw hat. My father comments:

– The first years in Black Africa were a time of discoveries. You weren't born yet. This was during a trip to the southwest of Cameroon, to Victoria, but the city has changed its name since then. Exoticism, the first marvels, even enchantments.

– The rocks are black.

– Yes, it's basalt. The beaches are as black as ash, made of volcanic debris.

Another photo, a reception at expatriate white people's house:

– It looks like your arrival went well, as you told me before !

– When we arrived, we were welcomed by those who were already here, somewhat like in the colonial days. The newcomers were objects of curiosity. The main concern was to determine if they could easily integrate and into which microcosm. So, during the first few weeks, it was just invitations left and right, a kind of initiation test that I didn't appreciate much, but your mother liked it. The old ones found amusement in the surprises that a few years earlier had been theirs, this generous nature, the abundance of flowers, fruits, all these new exotic species, the hot and humid climate, the cultural shock. Everyone tried to show us as many new and strange things as possible. A visit to the meat market, buying a zebu's brain, the animal's head split on a wooden chopping block, the gray-white magma still steaming, wrapped in



a newspaper and paid a ridiculous amount. Then the market for plants, roots, ointments, various remedies, round tins of Kiwi shoe polish filled with smoked ant paste. On the first visit to the craft market, your mother fell in love with a mask that was half monkey, half warthog. Another example of these initiation rituals for newcomers: in a village in the bush, sitting in a circle on stools in a dark hut, we had to chew a kola nut passed from mouth to mouth without suppressing our disgust.

– You were newlyweds ?

– Yes, it served as our honeymoon, one more reason to see everything positively, to refuse to believe that it was possible for someone to offer us a severed gorilla hand in the parking lot of the local supermarket. That was the first discordant note that tarnished the image of a wonderful and idealized country that was painted in school through the myth of the noble savage, a beautiful Africa that I would refuse to see the dark side of for a long time.

It has been about an hour since we've been exploring the photos. Ayana arrives on the terrace. The discreet light-yellow swimsuit can't hide her perfect body, youthful and firm curves, more pronounced than in white women but not excessively so, a natural beauty that is not vulgar or contrived, slender with a slim waist and just the right amount of fullness in her chest; the thin fabric reveals intriguing details. Theo asks me if I really came to look at old photos and Ayana confirms that it's a good time to go for a swim.

After quickly putting on my own swimsuit, we head to the beach.

Theo:

– Take your time, Olympe and I will take care of dinner. But I warn you, we eat early. That shouldn't change your habits much.

*Same day, around seven in the evening.*

Olympe is about to put the fish on the grill. The makeshift barbecue device is a simple iron grate placed on three large stones, just below the terrace, right on the beach. She is carefully basting the carp with a greenish sauce of her own making, made with okra and mashed cassava leaves with pili-pili. The shrimp skewers are already prepared next to it.

*After dinner, in 'Ghost' mode.*

Olympe and Ayana go to bed. Theo and Luc are having a conversation.

Theo:

– Is your work progressing as you want it to ?

– Quite well.

– You know, from time to time, I keep myself informed about the progress in your field of work, especially regarding the reactivation of brain areas, like those experiments to restore mobility to a person with damaged spinal cord. Are those kinds of research related to your work?

– Yes, to some extent. We are indeed working on developing brain implants to artificially activate specific brain areas, but with even broader ambitions.

– What do you mean ?

– Ultimately, we would like to be able to finely control an entire brain region dedicated to a specific function.

– That's ambitious. The road ahead may be long and difficult.

– Not so sure. The near future might hold many surprises; numerous teams are in the race: military labs, private foundations, university teams, and they're all working tirelessly with the hope of being the first to succeed.

– But for Ydutech, is it not a priority ? I thought Claire's research was the main focus, specifically the development of new drugs.

– It's true that we communicate very little, no big announcements like the major players, but we're progressing rapidly. It's also worth mentioning that these works are sometimes poorly perceived by the public due to the painful memory of many past failed attempts in brain interventions, including irresponsible lobotomies. Since then, enormous progress has been made in sensor miniaturization; they are less invasive, and that's a crucial point. As for the rest, it's a matter of artificial intelligence, untangling the web of electrical signals associated with brain activity, but that is within the reach of the latest supercomputers.

– Do you have such an installation ? But maybe you're not allowed to disclose such information, not even to your old father!

– I can confirm that we have a very powerful machine. It serves all Ydutech's activities, and I have access to it. With Jill and the other team members, we hope to someday reactivate memory. Officially, that's the goal of our work, and it complements Claire's team's research. She focuses on chemistry, and we focus on physical stimulation. In reality, and to confide in you, we go well beyond simple memory extraction; we strive to induce behaviors.

– I have heard about such works conducted by the US military.

– Yes, for them, it's about overcoming fear and controlling emotions. I admit there could be all sorts of abuses, but our goal is to heal, correct disabling behaviors caused by certain mental illnesses, and that requires a detailed understanding of the signatures of brain activity, all the electrical and chemical signals involved. We have no intention of altering anyone's personality, rest assured.

– Let me tell you what surprises me about all this research.

– Go ahead, tell me.

– The first time I heard the media report that a research team from a foundation was going to replicate the psychology of a worm, I wondered if the journalist had mistranslated or if it was a joke. In my youth, the idea of reducing thought to mere electrical signals would have triggered a wave of protests, even if it's just about a humble navel. I belong to those who believe that conscious thought cannot exist without DNA. Although intelligence and consciousness feed each other, go hand in hand, and grow together with cephalization, a distinction must be made between the two, especially since humans started using the words "artificial intelligence." Intelligence doesn't encompass everything that is affective; human behaviors can only be imitated. On the other hand, in the case of an inert machine built by humans, the faculties of understanding, analysis, and decision optimization will undoubtedly become far superior to those of humans, even if they are highly evolved automatisms. Consciousness is something different from mere intelligence; it's DNA, and in my opinion, it's a super consciousness based on a living super brain, not an inert one, that should be built. I don't see that happening for hundreds of years, and if in the meantime, intelligence hasn't destroyed human consciousness in an apocalypse.

– In fact, journalists misinterpret the researchers' thoughts. It's about imitating a behavior deemed intelligent and nothing more. Life, of course, is another matter, that of consciousness. Much of the misunderstandings in discussions about artificial intelligence and its risks stem from a confusion between the two concepts.

– That can be understood, I agree, especially since linguistics has not yet critically examined itself and started redefining its vocabulary based on the study of brain function. It's still a bit early for that; we're only at the beginning of the experiments. But it's true that someday the foundations of language will have to be reestablished, the definition of words or more broadly, the symbols best suited to optimize communication, in other words, to clarify

thought.

The current vocabulary with its vowels and consonants has represented progress in an analytical approach aimed at dissecting and specifying more and more. It is precisely this taste for analysis that has made the success of the West. However, there is no guarantee that it is the optimal solution. Thus, the French language offers an abundance of words that overlap with each other. We have abandoned pictograms and ideograms, even though in the early conscious perceptions of living organisms, a circular shape created a particular brain imprint in each animal. The word 'rond' (round) is associated with this primitive perception. Vocabulary and grammar then allow us to determine whether it is a large or small 'rond,' a 'rond' of a certain color, thus associating various other characteristics. From the root 'rond,' we can create all sorts of other words like arrondir (to round off), rondouillard (chubby), rondin (log), which include the original round shape.

Returning to the words "intelligence" and "consciousness," they are often used in a mathematical intersection context. A part of the concept of intelligence lies within consciousness. Depending on whether they are used by philosophers, psychologists, neurophysicists, or even the average citizen, the meaning can vary.

– But intelligence has a definition that aligns well with what we call artificial intelligence if you consult Wikipedia: according to Plato, intelligence is the activity that allows us to acquire knowledge. According to Priscian of Lydia, Theophrastus, and Aristotle, intelligence is defined as a faculty distinct from sensitivity, as well as opinion and reason. There is a distinction between the pure activity of the brain-machine (performance, activity, quality of interconnections) and conscious experience (sensitivity) and reason (which conditions free will, a consequence of conscious state). According to Wikipedia, intelligence can be perceived as the ability to process information to achieve goals. Animal intelligence depends on the quality of neuronal and endocrine communication systems. This view aligns broadly with what is called artificial intelligence, but the word 'endocrine' itself can also imply the connection between intelligence and consciousness.

*Luc continues:*

– Once we have agreed on what intelligence is, in other words, by limiting it to what has been explained above, it becomes evident that artificial intelligence will surpass human intelligence. It will be faster, tireless, built on

an incomparably more powerful memory and a more complex hierarchy allowing for higher levels of abstraction. As a result, there will no longer be any reason to discriminate between individuals based solely on their aptitude for manipulating symbols and mathematical logic. Good news for students who struggle in these fields! The gap between AI and the most intelligent humans will become greater than that between the most intelligent sapiens and the least endowed on this front. One day, pure mathematics will eventually fall within the realm of AI. To deprive someone of real science courses on the stupid pretext that they are not skilled enough in mathematics is an aberration, even a grave mistake that society is often guilty of.

– I agree with you that humans will be surpassed in intelligence, but not in terms of conscious mental activity. When thinkers warn about the dangers of artificial intelligence for humanity, it is not AI itself that poses a risk, but the consciousness of those who will use it. The day when artificial intelligence has bridged the efficiency gap between humans in terms of their ability to interact with the real world, where everyone has access to a superpowerful complementary artificial intelligence, then the door will be open to all sorts of abuses. The ill-conscienced, having become super-intelligent, could multiply their malevolence! They wouldn't even need to forcibly seek out the best human intellects, as Hitler, for example, was able to do. But instead of talking about intelligence or consciousness, it would be better to talk about conscious human thought elaborated through a permanent combination of intelligent processes and conscious choices. Whenever a choice needs to be made, once intelligence has analyzed and proposed reaction choices to a situation, it is consciousness that intervenes. This description of thought is, of course, simplistic because the conscious reactions of a given individual can eventually become incorporated into the intelligent phase, becoming automatic. Intelligence can then include dormant conscious reactions.

Under these conditions, it seems difficult to separate intelligence and consciousness. Even the humble earthworm functions in this way. Its tiny consciousness leads it to react in order to live and reproduce. Some Asian thinkers even believe that all living beings are animated by a breath of life, the soul; consciousness is then the perception, the feeling of this breath of life, and it would allow any living being to make decisions and guide their behavior.

– I understand what you're trying to tell me. Even if we were to incorporate choices that align with a particular ethic into artificial intelligence, we would only be creating artificial thought. It would not be life.

– What is concerning, in my opinion, in the West is that we don't know the spiritual state of those who will build intelligent machines. The future of humanity will depend on how they determine themselves. But getting back to your work in Boston, I think you're lucky to be able to work on such an ambitious project, and I'm happy for you. I just hope that Ydutech will have the means to finance the continuation of this work.

– You shouldn't worry about that. I don't know what's happening with Ray, if he has the Midas touch, but everything seems to be going well for him professionally. You know, you should really come and visit us. I'm sure he would enjoy discussing all of this with you.

It's almost midnight, Theo:

– Maybe we should go to bed? Tomorrow is the forest excursion.

– Yes, that's a good idea. Good night.

## **forgotten people**

*Immersion: I am Theo, Pointe Rouge, excursion with the pygmies, Monday, December 7, 2015.*

It's already ten-thirty in the morning when we finally embark at the old pier. The two canoes will follow each other up the river. I am in the lead, with Luc and Ayana behind me, sitting on small damp wooden planks that serve as seats. Olympe preferred to stay at the villa; she's not interested in the little people.

The current is weak, and the paddlers have no trouble moving forward in water that appears almost black. The vegetation along the banks is mirrored in the dark water, all in a silence that contrasts with the richness of the plant world. The first time I came here with Emilie, in the late seventies, it would have been inconceivable for expatriates not to visit the little people. The river mouth was then the domain of parrots; it was impossible to ignore them with all their chatter. Today, they have largely disappeared, victims of wildlife traffickers, greed, free-market capitalism, making money to live like the white people!

These birds were the heritage of all humanity, not the property of an African country. Likewise, orangutans are not the property of a particular country in Asia where the forests they live in are located. Their genocide

should not leave humanity indifferent. Similarly, natural resources belong to all people, not just those who are sitting on them, and the air we breathe knows no borders, so whoever pollutes in one corner of the globe becomes the enemy of others!

We make progress; in some places, the river splits into multiple branches that wander into the forest to the point where it becomes impossible to know where the real bank is. It's a tangle of plants and trees, with roots plunging into the water, resurfacing, and then diving back in, what people here falsely call mangroves. A little further upstream, the visibility improves as the branches join again, and large baobabs with gray bases marked by narrow ridges line the shore. Many vines, a few rare birds, hornbills that fly straight in brief, short flights. In the middle of the day, nature is like asleep.

The first paddler signals; we are getting close. Indeed, just after the river bend, a jetty appears, or rather a small pontoon made of poorly fitted planks, eaten away by humidity. The paddlers cling to the stilts to better stabilize the boats and allow us to disembark. The camp of the little people is right next to it, about thirty meters away, not very authentic and clearly permanently occupied. They are pygmies already halfway sedentary and accustomed to the larger Bantu people. They have already lost their culture and way of life but still occasionally serve as a link with the groups of little people who have not yet settled down. When I first came here with Emilie, some of them were still hunting forest elephants, a dangerous hunt in which one of them would go under the animal to drive a stake into its belly, just like in the Stone Age.



Bing.com / create, prompt : Central Africa, a pygmy family poses near their round hut made of large leaves, a black piglet on the side, equatorial forest background, authentic

Two rectangular huts made of clay bricks and covered with corrugated iron are located at the edge of the small clearing; the partly rusted plates have clearly been salvaged and brought from the coast. Cassava is randomly planted around them. At night, the little people sleep there and not in the round traditional huts meant for tourists, made of large leaves arranged in a

hemisphere. For now, women and children are gathered in front of them. Nearby, the one who is obviously the chief keeps watch; I go to greet him. He is sitting on a beer crate, sheltered by a large baobab tree, with a clay pipe in his hand, evidently pleased to see us.

Black pigs, sometimes spotted, scurry around the huts, sniffing and digging the moist soil in search of a forgotten tuber or yam. They don't hesitate to enter the huts either; it seems they're used to it. The women crouched in front of the narrow entrances do not stop them. It adds a local touch, more primitive for the tourists! A sickening and pitiful masquerade. The white person comes for a few dozen minutes, distributes some small gifts, with the main one going to the chief, usually some money. The tourist is satisfied; it's exactly what he thought, men who still live as they did thirty thousand years ago. Reassured about his own much more enviable fate, his superiority, the visitor quickly leaves without looking further.

I continue to chat with the chief through one of the paddlers. He confirms the presence of a group of little people, and with a bit of luck, we might be able to approach them. He whistles, and one of the few visible men separates from the others to join us; he's an elder who must still know the area well. Before entering the forest, we apply insect repellent cream. Water is everywhere and attracts the tiny bloodthirsty mosquitoes.

We follow our little guide who clears away lianas and leaves with a machete. In some places, the forest is so dense that the sun has a hard time piercing through the canopy; it's oppressive. Fortunately, we soon reach a more open area. The plants on the ground have been trampled, large leaves and pieces of branches are left near a small stream. Across it, we see the remains of rudimentary makeshift dams made of branches, leaves, and mud, fish traps. There are also scraps of wild honeycombs, the remains of the torch used to smoke the hive, a log with a blackened end surrounded by damp leaves tied with vines. The old man's information was correct.

Our little pygmy guide points out a tree, the one where the beehive was. He also examines the fireplace and talks to the paddler who accompanied us. The pygmies were there last night, but to catch up with them, we would have to venture much deeper into the forest. We are not equipped for that, and besides, I have learned to be wary of guides since I was charged by a hippopotamus in a reserve. The improvised guide had gotten too close, hoping for a big reward. The result was that the animal charged at us; fortunately, we managed to climb the steep bank of the river just in time.

Another reason might have led the little men here. Our guide asks us to



follow him quietly. A little further, he points out the treetops to our left. A few dozen meters away, there is a group of monkeys, a species with red tails. Apparently, they were wary when we arrived in the small clearing, taking time to realize that we posed no danger. Once reassured, they resumed their activities, jumping from branch to branch, grabbing small yellow-orange fruits, playing, and constantly quarreling.

I hand my binoculars to Ayana so she can enjoy the show. I have something else to show Luc, at the base of the trees, some droppings.

- A fascinating subject for study

Luc thinks for a moment. I help him:

- Even feces can be of interest to science, four letters that start like "monkey"!

- AIDS, of course !

- Yes, these creatures are the origin of the epidemic, or rather their cousins who live about a hundred kilometers inland, at the triple point, Lobeke, at the junction of the three states of Central Africa. They carry a viral syndrome related to HIV that affects humans. Among the few dozen forms present, there is one that is close to the variant of the virus that is most found in humans. The analysis of the droppings put an end to the debates about the origin of a pandemic that affected more than fifty million people worldwide. To arrive at this explanation, a whole group of anthropologists, doctors, virologists, and even historians had to mobilize. The virus probably passed from a monkey to a human during a hunting expedition, through a wound or perhaps through the blood while skinning the animal. The first infected person or patient zero carried the virus to Leopoldville, now Kinshasa.

Ayana stops observing the trees with her binoculars and becomes interested in our conversation.

- How do we know that, I mean, was it during the colonial period ?

- Besides the adventurers and criminal thugs who operated within the private concessions exploiting the former Belgian Congo, there was also a colonial administration with ordinary concerns. It consisted of state agents who worked as they would have in Belgium, particularly competent medical

services that were concerned with public health issues. Not all of them left their names in history like Dr. Jamot and Schweitzer in the French colonies, but they were nevertheless excellent specialists. It happens that they took samples and preserved them in formalin. They recorded their observations in registers, and thanks to that, we were able to trace back to the first cases of contagion. Genetic tests confirmed the presence of the virus in the samples.

Luc interjects :

– I remember the rest of the story. According to some theories, the virus would have arrived on the west coast of the USA through Haiti. Members of the development aid corps sent just after independence to Kinshasa by the latter country would have been infected. Many American homosexuals were traveling to the Caribbean at that time, especially to Haiti.

– Indeed, that is one of the proposed hypotheses. In practice, genetic studies conducted on the monkey droppings helped pinpoint an area where the primates carried the precursor virus, the one that mutated to attack humans. The origin of the disease was indeed African. It was not a biological weapon designed by Westerners to decimate Africans, as it had long been claimed in South Africa. There is also a good chance that a significant number of the victims of the construction of the railway linking the capital of the former French Congo, Brazzaville, to the coast can be attributed to the virus. That is what emerges from reading the symptoms reported by French doctors in the health registers of the workforce. It would not have been solely the appalling working conditions and mistreatment that caused so many deaths.

*Immersion: I am Theo, Pointe Rouge, Monday, December 7, 2015.*

Olympe and Ayana are already asleep. Luc suggested taking them back to the city early tomorrow morning. We are inside. Outside, it is raining, a light shower. Luc wants to see a few more photos, scan some, select others from my numerous files to send them to his personal cloud space. The rain has stopped falling. I turned off the noisy generator and closed the tiltable glass slats of the windows. It will somewhat contain the fresh air until tomorrow morning. Luc and I return to the terrace where the storm lanterns now provide the only light. The seaside is silent, only the sound of the waves lapping against the rocks. On the river side, the last lights of the fishing village gradually go out. I break the silence:

– You know, Luc, evenings like this are one of those moments I particularly appreciate here.

– I understand. You know, before coming to see you here, Claire and I thought you had an extraordinary life.

– Why ?

– At the crossroads of worlds, so different from what you would have experienced in France.

– It's true that at that time, the heart of the black continent beat just as strongly in some wonderful places in the former French Central African countries as at the foot of the Victoria Falls or the summit of Kilimanjaro. But that's a world that has disappeared today, and I don't think it would interest anyone anymore.

– Explain yourself !

– It would be the discovery of uncomfortable truths, of a different world that is impossible to accept by mainstream thinking. We're supposed to be all the same. By coming here, to such a primal world, we French technical assistants were a bit like anthropologists, but without the right to publish our observations. Furthermore, we self-censored internally at the sight of certain spectacles.

– So, you don't believe in equality.

– Based on what I've experienced, no, not anymore. But I believe more in respect and the potential richness of differences. When I first arrived in Black Africa, it was almost a different humanity that I didn't expect, both very endearing because it was more connected to the surroundings, more direct, more spontaneous, with reactions full of naivety that seemed thoughtless to us Westerners. At the same time, but it's probably related, it was a humanity full of brutality, which I didn't want to see at first.

– When it comes to brutality, white people are not exempt !

– Certainly, but it's not the same. It occurs in a deliberate framework, a systematic, planned, organized action, the brutality of major wars, much more serious and inexcusable. It has nothing to do with what I'm talking about. Here, it was often individual behaviors, spontaneous and unpredictable brutality, which leads me to relativize it, often isolated acts, uncontrollable bursts of temper, like a university rector entering a protesting student's room to threaten him with a gun, unimaginable in Europe!

– But what you're referring to in times gone by.

– Of course, it's no longer relevant. If you look closely, the cultural leap made since that time is considerable, but the rest of the world is not aware

enough of it. It's proof that we should have continued our development aid for longer.

*Immersion: I find myself alongside Theo and Luc, in ghost mode.*

Luc reopened the computer and explored the files year by year, starting with the oldest ones in the seventies, with picturesque and even taboo photos that would indeed trigger protests from the typical Parisian hipster: an old Renault Saviem van, no more windows, the windows sealed with grilles, the original dark green body painted with all kinds of naive patterns and statements like 'the Lord is my salvation,' almost as much cargo on the roof as inside, two kids standing on the rear bumper.

Another year: the train heading north in Cameroon stopped on a hill, the wheels of the diesel locomotive spinning on a carpet of large black millipedes. Everyone got off to lighten the load and be able to start again slowly; a little further on, the passengers got back on while the train was moving! Another photo of the same train stopped at a station a little further, a crowd, nearly naked children, dogs, poultry, and piglets that belong to who knows who, sellers of handmade cigars, cassava sellers rushing, reaching their hands through the windows, 'stick-stick,' a memory for Theo of the acrid and somewhat repulsive smell of cassava filling the compartment. A forbidden photo: that of a Pygmy woman breastfeeding both her child and a piglet. Others taken at markets, a boa hunt in Adamaoua, Cameroon, a forest dweller in the central region brandishing a large amphibian with legs reaching the ground, a tall black man forcefully opening what looks like a water valve at the entrance of a hut, in the next photo, he bursts into laughter, alongside my astonished father. Luc said:

- Indeed, these photos should not be shown to everyone !
- In those times, humor was not considered racism.

Another snapshot seems insignificant. Taken by the roadside, it shows a village woman sitting on a small wooden stool in the shade of a large mango tree. At her feet, placed on a mat, a basket contains no more than ten mangoes. Luc asks Theo, the photo seems uninteresting to him.

- Why did you keep this photo ? I don't see anything special!
- At first glance, there's nothing to see, just a mango tree full of ripe fruits. That day, I was with your mother. We had offered to buy a whole bag of

mangoes from the woman with the idea of making jam. A bargain for her? Yes, as all she had to do was get up and pick them; the tree was covered in ripe fruits. Well, she refused, it simply didn't interest her. She had set herself a goal, a specific amount to quickly obtain from a white person.

– Maybe she didn't have the time.

– No, it's not that, it wasn't the first time it happened to me. She only took from nature what she needed immediately, only worked to have the essentials. She didn't think about luxuries. Seeing those beautiful fruits, I thought of jam, I was thinking about the future. I also thought it could help her, she could buy more things for her children or treat herself to a bracelet, save some money, again thinking about the future, a rather complicated thought, the thought of a white person.

Another snapshot catches Luc's interest.

– And this photo here? It depicts a sort of small rectangular cupboard made of wooden planks, two feet long, one foot wide, and a third deep. It has six compartments and is closed with rabbit wire mesh; inside, small furry creatures with big round terrified eyes, field rats, roll around.

– The photo was taken in Bangui, at L'Enflure, a small restaurant mentioned in the guides for aspiring white adventurers, run by Michel. He had a boa that needed to be fed. That day, I was at the table when the seller passed by. Michel chose the most appetizing of the small mammals in front of me, the roundest and fattest one, immediately bought and introduced into the large reptile's aquarium located on the side behind the bar.

– I didn't remember the restaurant like that, this large iron hut with the bar in the middle and a swimming pool in the center ; and then there was an enclosure for turtles at the entrance.

– That's because you came the year before. The Lebanese guy who rented him the old premises terminated the lease. This place was the former French officers' mess, too exposed with the events. As for the turtles, he moved them to the back of the building. But look at this photo, it's the menu that Michel offered to his customers:

### **L'Enflure delights menu**

#### **whetting the appetite:**

Palm tree hearts in carpaccio salad,

smoked antelope salad, caterpillar salad, smoked captain fish carpaccio,  
pumpkin seed terrine

**satisfying the hunger, depending on availability:**

Ngounza with meat,  
fried plantains Guiliguili with smoked fish,  
fried plantains Maboke of captain fish (cooked in leaves), rice Palm rat with  
hunter's sauce Antelope civet,  
Lacoste with curry rice Monkey with Ebola's hemorrhagic sauce,  
rice Koko with beef fillet in peanut sauce,  
fried plantains Grilled Makelele (river fish) over a wood fire,  
fried plantains Boa in Niçoise style,  
rice Ardennes-style monitor lizard,  
rice CBC or Agouti (a species of large rodent),  
Protopterus in matelote (stew), steamed potatoes (complementary for  
beginners: a fish from the tropical African marshes that breathes through  
gills and lungs, spending the dry season in the mud inside a dried mucus  
cocoon, length of 1.2 meters, belonging to the subclass of lungfish),  
River turtle in white wine and herbs,  
Pangolin (scaly anteater) in supreme sauce, steamed potatoes,  
Old-fashioned warthog civet, steamed potatoes,  
Chicken with peanuts,  
rice Porcupine with rosé wine from Provence,  
rice Ostrich steak with pink peppercorn wood, fried plantains

**and if you're not in a hurry**

Colonel, lemon sorbet drowned in vodka mango and soursop sorbet.

~

– I guess you didn't eat such exotic food every day, did you ?  
– No, usually I settled for a grilled zebu fillet with potato or plantain fries,  
and of course, I avoided salad. Other times, I would go for rice with sauce. As  
for this menu with an exotic appearance, it's incomplete. In the old  
establishment, they also served game meat with grand veneur sauce, which  
was particularly appreciated by French military personnel, even the doctors.  
Their presence reassured me because the place was quite uninviting, dark,  
and had freezers full of expired products, sometimes for months.

– What happened to Michel ?

– We found him dead in his bed one morning. He had a severe case of diabetes. One day he had told me about his health problems; he even claimed that, one night, rats started nibbling on his toes while he was sleeping. I took his words as a joke.

I attended the funeral ceremony, not in the cathedral, but in a simple neighborhood church. There were about two to three hundred people. An era was ending, more lost testimonies, but also once again a story that would interest no one, the story of these white people who had made their lives in Black Africa, who had adapted and had not been rejected by the local population.

In the next photo, Luc recognizes one of the people.

– Your friend Bruno, the chameleon doctor !

– You remember ! He was in charge of the ongoing medical and paramedical training outlined in the project.

– Where was the photo taken ?

– At Le Perroquet, a small unassuming bar close to the university. At the end of each training session, we had to distribute allowances, so I would go to the bank to get bags of bills and coins, and he would assist me in the distribution. Afterward, the two of us would come here to have an informal assessment, exchange our impressions, discuss how the last session went. We would order a carafe of bad Spanish rosé wine that we would have found undrinkable in France. But since we added at least as much ice as wine, it went down; the ice was prepared the African way, an ice block bought from the Lebanese, wrapped in a more or less clean cloth, struck on the edge of the sidewalk! We also talked a bit about the country, about ourselves, about our children.

– Why the chameleon ?

– Originally, it was just a joke. Bruno's old 4x4 needed a new paint job. So, before leaving for summer vacation, he left it with a French mechanic, an old guy who had always lived there. When the mechanic asked him what color he wanted, he replied "chameleon" to indicate that it didn't matter. The old man, Cabrol, his name was, took him literally. When Bruno returned from vacation in September, he found the car painted in all sorts of colors, mostly green and pink. So, of course, it was easy, from then on, we called him the chameleon.

– The vehicle wasn't very discreet !

– It didn't matter ; he didn't care, and anyway, he had nothing to hide. I have known many French people in Africa, I'm talking about those involved in French technical assistance and the embassies. Some came for sex, for money, for the benefits; they were all despised by the white people working in the private sector in the country. A small secretary at the French embassy could live better than a bourgeois woman in France and even, if she desired, with a small entourage around her. Among all these people, looking back, I now realize that there wasn't one who loved Africa as much as Bruno. In fact, and I had to admit it towards the end of my career, almost no one believed in development; on the other hand, he was truly there to help, fully committed. For most of the others, it was just hypocrisy. I realize that all the French embassies in Africa could be closed; they serve no purpose.

– And Bruno, you didn't stay in touch with him?

– I had nothing to offer him. Dwelling on memories over a drink in France during the summer, what's the point? I knew what this stay represented for him. It could only belong to him, with all his memories.

– Why was it so important ?

– In fact, he was born there, in Bangui, almost by chance while his mother was traveling through Africa. He didn't have the opportunity to live with her for long. Nothing can replace a mother. I think he felt the need to reconnect with his roots, to return to a place where his mother had lived happily, to discover places imbued with her presence. Many people, in their subconscious, believe that different places retain a trace of the events that took place there, that they believe in a mysterious interconnection of past, present, and future events. He probably felt the need to fill his lungs with the air his mother had breathed, to see the flowers she had admired before him. He didn't tell me how he managed to get appointed. He clearly wanted to help the African medical corps and the local population; he was fully committed. When he heard about the project I was managing, he spontaneously came to see me. He offered his help and managed to convince the six or seven French medical technical assistants still working in the medical facilities of Bangui to join him. It wasn't part of their initial mission letters, but they played along. He was a leader of men.

– It seems like you admire him. That's not like you.

– Yes, he had intelligence and dynamism. Plus, he knew how to commit himself. He believed that when you respect people, you must tell them the truth. He never said anything that could be misinterpreted, he knew how to



command, and above all, he had high expectations for our African colleagues regarding the quality of services they provided. He aimed for excellence, and for me, that was a sign of genuine consideration for the country.

Theo shows Luc more family photos, some taken during photo safaris. Lost among them is a reproduction of a painting that Luc recognizes. It used to hang in the living room of the apartment on Rue Buffon in Paris. Luc:

– Do you still have that painting ?

– Yes, I kept it. It's by an artist from western Cameroon. The French cultural advisor at the embassy introduced me to him. I acquired the painting during an exhibition he organized. The painter continued his career in New York but unfortunately died prematurely. Otherwise, I suppose he would have eventually achieved international recognition.

### **so short is life.**

Flora

*I am Joy, Underground, Ocean Dome, Project Nemo. Time elapsed since the beginning of the experiment: 1 hour 02 minutes. Immersion: deep-diving mode. I am Theo, on the terrace of Pointe Rouge, early December 2016.*

It has already been a year since Luc's stay. After two weeks here, he went back to Boston. It was on a Tuesday, precisely the twenty-second of December. He promised Jill he would be there for New Year's. Looking back, I realize that I hardly saw him after the first few days; most of the time, he would go into town. I even had to give up on the planned excursions, fishing, returning to the forest with the pygmies, and visiting the gorillas. Olympe confirmed to me that Luc and Ayana had become inseparable. What more can I say, except that neither she nor I could do anything about it.

Four months after his departure, I still hadn't heard anything. More worrisome, Olympe and Ayana were no longer in touch. I remember waiting a little longer before deciding to go to the shop. The sign 'Parisian Seamstresses' was still there, with the curtain lowered. Little girls were playing hopscotch on the sidewalk in front of the shop, using dried mango pits; interestingly, the almonds inside make noise when you throw the pits!

I still remember their laughter when I started asking a few questions. It was impossible not to understand why this old white man was there. Later, when their mothers explained it to them, it will be even funnier, these ridiculous white men who fall in love with young black beauties whom they clearly can't keep. I still asked a few questions, but the girls didn't know anything.

So I went to the insurance company where Ayana works. They welcomed me politely and looked at me strangely, but I eventually learned that she had requested a long leave for personal reasons, a family matter to attend to. Her colleagues didn't seem overly concerned. That evening, I returned to Pointe Rouge empty-handed. The next day, I resumed my search in the city.

In the neighborhood, in Africa, everything is known; bar after bar, I finally met a rejected suitor. After a few glasses of local whiskey, he poured out his resentment. That woman had gone and done it with a white man, as if the blacks weren't good enough for her. The description matched Luc's. Another black man joined the conversation, trying to make himself interesting and get a free drink. The woman I'm looking for apparently went to hide her sin in the countryside. In our grandmothers' time in France, when they didn't have an abortion, they would go to the countryside. Uncles, aunts, and grandparents were generally more understanding there than in the city. Going to hide her shame in the village, knowing Ayana, wouldn't surprise me. For her, life is sacred; she had to keep the child at all costs as a gift from God.

I went to the village where I found them. I couldn't say who was more ashamed, me or them. The three of us talked for a long time, and I finally managed to convince them to accept my help. At the end of August 2016, a little ahead of schedule, Ayana gave birth in one of the best clinics in the capital run by Anglicans; I just had to drop off a generous check at the entrance.

Later, Olympe reopened her shop and quickly regained her clientele. Today, Ayana has not yet returned to work; she is breastfeeding Flora, but in a few months, she must go back to her position at the insurance company. Life will then resume its course as it was before Luc's arrival, as if nothing ever happened.

*I am Theo, early December 2016, on the terrace of Pointe Rouge.*

I am trying to sort through a basket full of small scraps of paper, handwritten notes written over the course of days on all sorts of surfaces, even pieces of paper napkins. Then I transcribe the content as is on my

laptop. Writing a book as Luc advised me? I am not capable of that! Novelists have a gift for turning nothing into a story, captivating the reader to the point where they believe they are in the action themselves. That's certainly not the case with me. Too cold, too synthetic; one would immediately detect the touch of a professor writing a lecture, an exercise I engaged in for a large part of my life.

While sipping on the bissap juice brought from the city, I find it has a strange taste. The few indications on the bottle label don't really specify the composition or origin. It's impossible to know what it really is and where it comes from; it's probably one of those flavored powders from China with a counterfeit German patent. When I used to prepare the decoction myself up north from dried hibiscus petals, it was something completely different, fresh and refreshing.

The sky has darkened, threatening, anthracite gray; a few distant rumbles can be heard. I pack up my things because the rain is about to come. I can't help but think about everything that has happened. Ayana, wholehearted, sincere, faithful, in love, and Luc immersed in the charm and magic of Black Africa. Even I, when I was young, I believe I would have fallen madly in love with her. Stupid, of course, because undoubtedly, she would have rejected me. I've never had as much success with women as Luc did.

It has already been a year, and he still hasn't given any news. She still hopes, clinging to the hope that he will return one day. He promised, and she believes in God. At the same time, she made me promise not to say anything.

*Immersion: I am still Theo, my grandfather, Pointe Rouge, January 2018.*

Facing the sea, a textured paper placemat with a few scribbled lines on it. I have enough notebooks, but it's a little habit of mine to write on anything. In one corner, there's a stain. It's me not being used to ink pens anymore, the one Ayana forgot. I wanted to see if I was still capable of writing with a pen.

Absorbed by the paper, once dried, the purple ink created a gray pastel shape, a trunk, two large drooping ears. Two black dots, defects in the paper, form the eyes, completing an elephant's head on the stain. It looks like Babar! When Claire was still a little girl, she used to look for animals in the clouds. Every time she visited; I would take her to the reserves in Central Africa. Each time, she would ask why she didn't see zebras! She also preferred Africa back then. She wanted to live with me rather than with Emilie in Paris.

Claire, it's been so long since I last saw her! Writing to her, but what should

I say? Right now, I have to respond to Luc's latest email, buy more time. If I go see them in Boston, I'm afraid I'll betray my promise someday, talk about Flora, break this silence that seems too unfair and increasingly unbearable.

*I am Theo, Pointe Rouge, late August 2019.*

Yesterday, Flora turned three, another birthday without any news from Luc and heavy with suppressed feelings. These past three years, I've tried to make him come back, but in vain. He probably chose to forget. If he hadn't already been engaged, undoubtedly things would have turned out differently, but the prospect of a double life must have seemed too complicated to him.

Once again, I placed the candles on the cake alone, one, two, three, as many years of solitude, more tears in Ayana's eyes. Once again, I took Flora on my lap for her to blow out the candles. I tried to make the little one laugh so that her mother could forget, even for a moment, to forget Luc's forgetfulness, to enjoy the present, the best, the most beautiful thing, a child's smile. Ayana thinks Luc will never come back, and I myself have to admit that I no longer believe it.

*It is one o'clock.*

Olympe has just cleared the table, and Ayana has withdrawn to her room with Flora. A gecko ventures a few centimeters away from the table, nodding its head like a mechanical toy, searching for some breadcrumbs that fell on the floor. Last spring, when I started experiencing recurring pains, I decided to consult a doctor on-site. Like many other doctors' children, I had hardly ever been concerned about my own health until then. I was recommended various additional tests to be done in Paris in July: scans, various analyses, culminating in the terrible confirmation of pancreatic cancer, a formidable condition that is particularly difficult to treat, not to mention incurable. The doctor who delivered the news seemed unaffected; I was clearly just another patient, and after all, I had had my time. The prognosis was clear: six months, a year at most, before the pain becomes unbearable. The end? At best, in a coma, under palliative care, drugged with morphine, provided I find a sympathetic doctor (meaning: if I have good connections in the French medical field). Failing that, I contacted associations, entities that I don't like, but faced with the cruelty of a society that lets old and sick people die in suffering and abandonment, they seemed to be the only recourse. I am not afraid that there is nothing after death; I fear the pain. I have no intention of

fighting, of clinging to life, of embarking on heavy treatments that would only give me a short remission. Some countries offer the possibility to die with dignity, not like an abandoned animal, which is too often the case in France. In the end, I decided to stay in Africa with Flora for as long as possible. I just need to make sure I don't make a mistake, to leave for Europe in time, to put all my affairs in order before I disappear. I'm not worried about Claire and Luc. With Emilie, we managed to educate them, and they succeeded; they have a future. Justin and Joy have nothing to worry about; where they are, it's the best place on Earth. It's Ayana and Flora that I should be concerned about. I have an idea, but I'm not sure if they'll accept it.

The following Sunday. The sun is about to set on the horizon, still glowing red for a few moments. Ayana is still on the beach with Flora. Olympe is alone with me on the terrace. Tomorrow morning, early, I must accompany both of them back to the city; it's time to talk.

– Olympe, I have something to tell you.

She looks at me.

– You know, during my last trip to France...

– Yes ?

– I underwent medical tests.

She looks at me and waits for what comes next, worried.

– The initial results are not very good. I would need to go back to France from time to time for treatment.

She doesn't panic; she has faith in Western medicine. I must insist.

– I'm not young anymore. At my age, there is always a risk, you understand ?

No, she clearly doesn't understand or rather doesn't want to!

– I'm worried about Ayana and Flora. If something were to happen to me one day? I've thought of a solution, but I don't know how to propose it to

Ayana; I'm afraid it might shock her.

– And you want me to talk to her about it ?

– Yes, well, if you're willing, it's delicate.

– Luc will never come back, is that what worries you ?

– It's been over three years. I don't think he's forgotten Ayana, and if he had known about Flora, I think he would have come back. However, I've kept my promise not to reveal anything.

I take the plunge.

– I could officially recognize Flora as my own daughter. That would allow her to obtain French nationality, with all the rights that come with it, better protection, access to Europe, and easier opportunities for education. Ayana wouldn't have to do anything; I can handle all the formalities at the consulate. It would be the solution for all of us, and Flora would never know that she was abandoned.

– People will talk.

– Here? So what? It wouldn't be the first 'domino' couple of this kind! They will gossip at first, but soon enough, no one will think about it anymore. Do you think you could talk to her about it?

– She won't want to.

– If it was just for her, that's for sure, but for Flora, there's a chance she might accept. You can try testing the waters by inventing a situation that is comparable or at least somewhat similar. See how she reacts. Will you give it a try?

– I'll see what I can do.

– Keep me updated, will you?

– Of course, I promise.

– She doesn't have to talk to me about it; she just needs to let me know her agreement through you, and our life will continue as before.

The sun has disappeared. Ayana returns, holding Flora's hand. She wanted to stay, to chase after the coconut crabs, to play in the sand.

*The next morning.*

As I shave, I try to avoid looking at myself in the mirror as much as possible; the wrinkles are deepening, the gaze is increasingly tired, small red veins invade my eyes. Quickly, to the terrace, a pot of coffee, distract myself,

resume sorting through all these little scraps of paper I've accumulated over the past few years.

*Late October 2019.*

Ayana finally agreed, and I took care of the necessary paperwork at the French consulate. I officially recognized Flora as my daughter. She is now French. She will be able to carry my name, the name Luc. Before disappearing from this earth, I will write a letter so that he finally knows. He will understand and will be able to guide her education, perhaps even confessing everything to Jill one day. For now, like Claire, like me, like so many Western children, he is making the mistake of working too much. Emilie was right, burning one's life every day without taking the time for self-reflection is madness. The world is too rushed. They may only keep a poor image of me, at best an eccentric captivated by the dark continent. Only when their time comes will they understand. Then they will look back and begin to ask themselves the real questions, the ones that concern me today. If they find these papers and take the time to read them, I hope they will find a message of life and hope, of trust in life. So many children are born into despair and one day blame their parents for it. So many men and women wish they had never existed, all because of the absurdity of evil and suffering. Surely, if they were offered a machine button that would make them never have existed, they would press it. Never existed, never suffered. Should we then apologize for giving them life? No, on the contrary, we must deliver them a message of hope. It is nature that wanted this, and it surely has a good reason. In the Africa of old, there was the image of the wise old African under the baobab tree; he would speak to the young ones, imparting life advice, sharing part of his experience. It is a bygone time that I had the chance to know and love living in. With Westernization came the destruction of family bonds, materialism, the primacy of the individual over the community, of the individual child over the family and parents, of new lives devoid of spirituality. My own parents, out of selfishness, did not care at all about accompanying me or leaving me a message. I do not want it to be the same for Luc and Claire.

*I am Theo, in the afternoon.*

I feel more and more tired. I sleep for hours on end, the effect of medication or the illness gnawing at me, probably both. I realize today that my forearms, the skin, are flaking like a lizard's skin. It's true that I've become thinner. My youth? Fresh skin is nothing but a memory! I look at the sea...

This morning, I had a satisfaction, a scientific article that Luc pointed out to me as particularly interesting, a recent study by researchers from Edinburgh and Harvard on the question of the link between intelligence and genetics. In the team, one of his former thesis colleagues claims that intelligence could be predicted based on a simple DNA test and, more importantly, one day erase the intelligence differences between men. It refers to the form of intelligence considered in the West, efficiency, the ability to understand and model the environment, to find the best solutions to dominate nature. Nevertheless, it is good news. When one dares to highlight the differences in intelligence between men, one is often accused of racism. Several hundred genes would be monitored, those that facilitate neurogenesis, act on white matter, promote the proper functioning of synapses, or even improve the quality of myelin sheaths. With appropriate education as a complement, the differences could be erased.

## **last door**

*Immersion: I am Theo, Paris, January 2020.*

Towards the end of 2019, the illness started progressing rapidly. I then made the decision to return to France without any illusions of coming back. Loaded with painkillers, I tried to put on a brave face for one last Christmas by the sea, the final shared joys with Olympe, Ayana, and Flora, who is just starting her life. In early January of this year, 2020, Ayana accompanied me to the airport. She was worried, and I tried to reassure her that I would be back in just ten days at most. I tried not to look at her as if it were the last time I would see a loved one. When my lips brushed against Flora's cheek, deep inside, I wished her a life full of happiness. Upon my arrival in Paris, I went to that hospital where Emilie had ended her life, bad memories... At the palliative care department, they prescribed me new patches that were more effective against pain. Relief, but at the cost of drowsiness. So when the suffering becomes unbearable, when they increase the doses again, what will happen? I contacted the foundation to which I have regularly made donations in recent years, aptly named 'Eternal Soul'! They facilitate the path strewn with obstacles that will allow me to benefit from medically assisted voluntary death (MAVD). They offered me clinics in Holland, Belgium, and Switzerland. Be careful, it is important not to be able to question my mental state when I have to activate the infusion myself, press the button. I must



choose the right moment, not too early or too late. I think the moment has come. I opt for the third option. They will call me back and schedule appointments, particularly for face-to-face interviews with psychologists and doctors. I tidy up the apartment, leave some instructions for Claire and Luc, and pack a bag. I still need to find a warm jacket like the ones used for winter sports. Where I'm going, it's cold. It will surely be the last piece of clothing I will buy in my life.

*Immersion: deep-diving mode, I am Theo, Lake Geneva, Swiss side, Beau Lac clinic, Monday, January 23, 2020.*

I took a taxi; the expense no longer matters. On the way, I stopped to pay my last respects at Emilie's grave. The plaque was finally engraved, but I had to call the funeral home several times for that. Emilie Royol, beside her, you can read Paulette, Laurette, the names of her father's sisters. I was invited to their place with Emilie during the summer vacation. A large property, the joy of living in nature, meadows, chestnut and wild service trees, an orchard, I remember. Emilie and I in the big branches of the cherry trees, gorging we on large fruits so ripe they were almost black, she handing me a fruit already pecked by sparrows, the best ones, apple pies, quince pastes, and fig jams.

I also remember the photo of Emilie's paternal grandfather. It was placed on the sideboard in the dining room. Deep gaze, blue eyes, calm assurance, Emilie had inherited it. Even if I don't believe in anything particular after death, it's stupid, I still asked for my urn to be placed in the vault right above her coffin. She would have wanted it, a final gesture of love for all that we shared. I will join her in this small provincial cemetery. Neither of us will have realized our childhood dreams, fascinating Africa, chance or destiny? This time I have reached my destination, halfway between Lausanne and Geneva. Entering the clinic, I try not to think about anything. They are expecting me and welcome me as an ordinary patient who would be hospitalized for a hip prosthesis, reassuring normality. There are still some Christmas decorations in the lobby, otherwise everything is neat, calm, and clean. The clinic is aptly named. The window in the room opens to a magnificent panorama, the lake, and on the opposite shore, a cluster of snow-covered peaks. The room's decor is discreet, and the medical equipment knows how to fade into the background, flowers, a television, and a stereo, a final backdrop for the last scene of my life, what I will see last. I must try to banish these morbid thoughts from my mind. I will rather look at my favorite photos, a selection I made a long time ago. Above all, I must not think about all those who have

passed through here, resigned like me. I made a choice, the most reasonable one, and I must repeat to myself that there was no better solution.

*Thursday, January 30, 2020.*

I have been here for a week already. The final interview took place the day before yesterday. Now my medical file is complete. The numerous visits and consultations with doctors and psychologists have concluded that my physical and mental condition is entirely compatible with my request for assisted voluntary death (AVD). I have completed the final formalities with indifference, as if it were not about me. I have also confirmed the choice of an urn to hold my ashes after cremation and verified the shipping address in France. As for the death certificate, everything is already planned, they are accustomed to it. I am in my bed. I tried not to take too many painkillers to ensure a last moment of full lucidity, a final synthesis of my life. So, was it only this? Is that what every man or woman can say before departing, the thresholds crossed one after the other, a life that could have been lived differently? We could have done better, succeeded, shined in paths other than the one chosen, for me, the path of research. A way to console oneself by invoking destiny. One thing is certain, in the face of death, we are alone.

*Immersion: I am Theo, Beau Lac clinic, Friday, January 31, 2020.*

Early afternoon. I had a choice, I could have waited another day or two, but I could also call the nurse and the accredited doctor at any moment to administer the lethal mixture, the lethal cocktail meant to gently lead me into death. It's done. I am ready. The nurse has just given me the product that will prevent me from vomiting or feeling nauseous when the lethal process begins. A final smile from the woman, and she leaves discreetly. She knows that sometimes, at the last moment, the patient postpones their decision for a few hours. I did not do it. What's the point? I reread the last letter from Claire. She and Luc invite me again. They are unaware of my condition. I left them two documents in the secure cabinet of the apartment in Paris. The notary will give them the key after informing them of my death. One letter is addressed to both, and another is meant for Luc alone, the one where I reveal the existence of Flora. I will have lived until seventy-four years old, not enough to see the colonization of Mars or Titan. Why this thought at this moment, because my children or grandchildren will see it? Before I leave, I better dream of the most beautiful things, depart with the image of those I loved. I open the thin album containing a few photos of Emilie, Claire, Luc,

Ayana, Joy, Justin, and Flora, as well as my mother and maternal grandmother.

I activate the pump with the remote control. In principle, in twenty to twenty-five minutes, everything will be over, but before that, drowsiness will take over. I should stop thinking about anything, impossible, everything starts flashing through my mind in a few minutes. Dreaming of the most beautiful things often means dreaming of femininity, dreaming of childhood, rewinding the film of one's life, going back and even further, if possible, to the comfortable nest of the mother's womb, becoming a fetus again. Childhood joys: eleven years old, summer vacation in the Vosges, Saint-Dié, America Street, the family house on my mother's side, brothers and cousins playing war in the glacial moraines and in the forest, with simple firecracker pistols and branches as swords.

Even further back, on my father's side this time, just as many happy memories: in France, in the Massif Central, a chalet on the mountainside, above the forest, below fields of wheat sprinkled with cornflowers and poppies, thick slices of dark brown rye bread, generously buttered and covered in honey, the journey to fetch milk in a metal can from the neighboring farm in the morning, the farmer's wooden clogs, the first children's watercolor paintings.

Going back even further in time: my parents' house when I was born, the silk dressing gown sprinkled with night blue stars and white silhouettes of the Little Prince, the rays of the setting sun on the beveled edge of the bathroom mirror, a spectrum of colors, rainbow and soap bubbles, mother-of-pearl from oyster shells thrown into the backyard, mysterious iridescence of the small colored glitter on the opal ring worn by my mother, adorned with two delicately pearlescent fine pearls, the magic of colors, the discovery of light. And then, the time of reconstructed memories: the baby book made by my mother with the evocation of first steps, first words, the first lie for a stolen chocolate from a crystal candy dish. But the journey is over, better close the book! The hourglass of memories is empty, the sandman has passed, little child, now it is time to sleep...

I slightly increase the ambient sound, a music piece by Handel, the synthesis of the best that Europe had to offer in terms of music. It evokes true intelligence for me, a constant renewal, the games of water, fountains and jets that constantly spring up, rebounding, constantly imagining new figures. Emerging from the mouths of gods and marine creatures, the water rises towards the sky to fall back as droplets and streams on the large body

of water, a source, just like my life could have been. Now everything is calm, I am going to disappear. It's three o'clock. My vision blurs, the sound muffles, flowers, the last marvel of an old man, the first marvel of a child, nothingness.

*Immersion: I'm Joy, I'm at Emilie's apartment with Uncle Luc and Claire, my mother, in ghost mode, at the end of February 2020.*

Claire and Luc are in the kitchen, a cup of bergamot tea for her, an espresso for him. In the open armored cabinet with the key given by the notary, there wasn't much: a few of Emilie's jewelry, two small gold bars, family documents, administrative records, photos, videos on CDs, some cassette tapes, and an unfinished essay, the bits of paper not yet fully gathered. There were also two letters; they are about to read them.

*The first one, in two copies, is addressed to Claire and Luc:*

When you read these lines, I will have left this world. If I didn't alert you, it's because everything happened very quickly. I was suffering from an incurable illness. Refusing the decline, I preferred to leave with dignity, without physical suffering. The long and painful Christian agony, the one that awaits most women and men in the West, was not for me. Your presence wouldn't have changed anything either, only contributed to making things more difficult. So, it was better this way. In death, the only thing that scared me was physical pain; the rest is absurd, I mean the fact that there is or isn't something beyond, that the tunnel of light is the gate to paradise, resurrection with a key or resurrection at the end of time in a communion of all souls. All of this only exists in the delusion of men, a belief in an afterlife that is nothing more than consolation for the weak. When my heart stops beating, when the last convulsions of my conscious thoughts fade away, I know that there will be nothing more for me.

The true immortality of the human species lies in offspring, and for me, that's you, then Justin and Joy, and the other children if you are fortunate enough to give them siblings. The closer they are to you, the more they will resemble you, and the more you will continue to live through them, the less you will have to fear death yourselves since your generation should still experience it. In each of you, there is a bit of me, a bit of Émilie. In Justin and Joy, there will be a bit of you, of Ray, of Jill, and hopefully the best. That's how life goes. We could have been together more often if the frenetic and unpredictable pace of life had allowed it. If I had to give you the most precious advice, it would be to dedicate the maximum amount of time and attention to the children, to maintain strong family ties, to resist all destructive forces that seek to destroy them in this money and wealth-obsessed world.

Should life have a meaning? It's a question that everyone ends up asking themselves sooner or later, almost always on the eve of leaving this world. Absurd to live to suffer! Some console themselves by thinking that existence is nothing more than a tragicomedy in which everyone has a role to play, decided before their birth. So, could it have been done better? How would that have been possible? Others desperately seek to be remembered after their death. They absolutely want to leave a mark, through war, patronage, politics, literature. How futile it all is! The exceptional acceleration of knowledge achieved by the West in such a short time is an encouragement for the human species. Perhaps it will understand one day what consciousness and intelligence truly serve. Progress on this subject is a priority.

Now, both of you are in a country where nothing is ever big enough for man, where everything is possible. You can contribute to the resolution. You can participate in solving this riddle; you are accomplishing what I myself would have liked to do. I wish Justin and Joy would also follow this path. I wish you much happiness.

Claire and Luc remain silent. The other letter is meant for Luc alone. He opens it: inside a thick folded sheet covered in Theo's handwriting, there is also a photograph, the portrait of an adorable mixed-race little girl. The gaze, though childish, seems familiar to him.

Luc, I would have wanted to give you these lines to read earlier. In my lifetime, I often hesitated. It concerns your trip to Pointe Rouge just over four years ago. I quickly understood that something was happening between you and Ayana; I hardly saw you anymore. Olympe alerted me; however, knowing Ayana, I never would have thought that, well, that it would happen so quickly! I probably never understood women, but she fell in love. After you left, you didn't give any news, and she was inconsolable. Giving you more details now would serve no purpose. When she realized she was pregnant, she was happy, a gift from God, from nature, the most beautiful thing in life, as most women think. She waited for news from you, hoping you would come back, at least that you would contact her, but nothing! She didn't even try to reproach you. As soon as I learned about the situation, I tried to invent all sorts of stories, that you were caught up in work that required your presence. One day, I even mentioned a supposed return date, which was some time after the due date for the birth. Did she believe it? I couldn't say for sure.

As Luc reads these first lines, he pales. He sets the letter aside, takes a deep breath, and continues reading. Claire obviously doesn't understand.

Of course, there was never any question for her of giving up the child. She is very religious and kept the result of your relationship; nine months later, she gave birth to Flora. I have no right to judge you, whether it was a simple

exotic episode or more. Jill, Justin, already a life, two families, of course it's difficult. A taboo, it goes against the norm in our hypocritical civilization, even if it makes no sense. For Ayana, it was a shattered dream, a happiness cut short. She understood, Jill and Justin on one side, her on the other. She made me promise not to say anything, and I respected her choice. The birth took place on August 25, 2016, in a private clinic. I made sure she had the best conditions. Life went on afterward, our new life. Olympe reopened her sewing workshop, Ayana went back to work and quickly progressed in her responsibilities. People whispered around her that I might be the father, and she let them talk. Time passed, and you still didn't give any sign of life. When I learned in the summer of 2019 that I was condemned, I offered to officially acknowledge Flora at the consulate. Your own daughter is now officially your sister to Claire and you; she has French nationality. Attached is her birth certificate. What you think of all this is obviously no longer important to me; in any case, I couldn't find a better solution. I couldn't bring myself to abandon them. Flora has brought me much happiness and illuminated the last years of my life. Luc sets the letter aside. It's a shock, but Claire doesn't need to know.

*The Machine makes me share Luc's thoughts and memories.*

Thoughts rush through Luc's mind. In an instant, everything comes back, as clear as if it were yesterday. During those few days, he had glimpsed another world, the happiness that floods a new life. After the weekend in Pointe Rouge, on Monday morning, he had brought Olympe and Ayana back to the city. Théo had preferred not to come. A brief stop at the shop. To access the apartment at the back, you had to pass between two tables carrying sewing machines. The accommodation was well-kept, charming, with even a small garden. Ayana had changed clothes, and he had accompanied her to her workplace, one of the buildings in the administrative district, right in the center. He had dropped her off a little earlier, discreetly and without her having to ask. At noon, they had lunch together at the Méridien, one of the best hotels, by the pool. Neither of them wanted to part. Waiting for the next weekend in Pointe Rouge? It seemed too long! Ayana had requested and obtained a few days off. Olympe wasn't even aware because Ayana came home every evening, even if sometimes it was late. They had been together all week. Luc rarely went back to Pointe Rouge, citing urgent teleconferences. They shared their time between the pool and his room. It was then that Ayana made it clear to him that she was still a virgin.

When on the bed and in a whisper, she reminded him that it was him, Luc, who had taught her to swim, he understood what she was asking. Was she really sure she wanted it? Yes! She insisted. Then the senses prevailed, nature did its job. Back in Boston for the year-end holidays, Luc tried to assess the situation. It was the first time he had cheated on Jill. This union, formalized in marriage, had been a model of balance, sensory satisfaction as well as a way of life. Justin was born from it. Jill was beautiful too, the ideal spouse that any man in the West would have wanted. What trick had destiny played on him by jeopardizing such happiness? Every time he thought about this situation, reason told him to forget. But that didn't stop him from immediately thinking that if he hadn't already been married, then Ayana would have been the woman of his life. Then time passed. He gradually tried to suppress this opening to another happiness. His work became increasingly demanding. With no news from Olympe or Théo, he eventually convinced himself that it was just a passing phase, an affair without consequences, that Ayana's words of love were those of a first experience and perhaps nothing more. He was gravely mistaken. But why on earth did his father make that foolish promise? And what to do now?

~

## **WEST**

### FROM EAST TO WEST

#### **New life**

At home

*I am Joy, Ydunea, Project Nemo, experiment time: 1 hour 05 minutes. Immersion: I am Claire, my mother, Boston, visiting GreyHouse, September 4th, 2015.*

A fairly upscale neighborhood in the northern part of the city, a wide cross street lined with willows and maples, seven or eight properties distributed on both sides, with vast gardens. The large mansions built between the two world wars testify to a period of prosperity, at least until the 1929 crisis, of rapid enrichment; they allowed for displaying one's success. Ray bought GreyHouse a year after my arrival in Boston and made numerous expansions since then. The main body is a large, austere, imposing, and luxurious building, all made of gray granite; the constituent blocks are chiseled, giving them a natural appearance. On the ground floor and first floor, a smooth white marble frame highlights the openings, the small-paned windows, and the double front door decorated with stained glass. From the vast rounded roof, made of natural slate fixed with real nails, emerge two large symmetrical chimneys built with the same granite as the facade.

At first glance, the property seems open, with no fence facing the street, only a stone wall measuring just under three feet high separating the impeccably manicured green lawn from the sidewalk. It is interrupted in the center to open the passage to a red asphalt path that leads to the front door. On closer inspection, however, one can notice that the two lateral structures are more recent; added by Ray and attached to the main body, they block access to the rear of the property. Their concrete facades have been covered with granite slabs matching the facade; on one side, there is a garage capable of accommodating up to five to six vehicles, and on the other side, a building of the same size with modern openings. Ready for the tour? Let's enter! On the ground floor, the vestibule entrance opens onto two lateral corridors, right and left, where the cloakroom and facilities are located; they are separated from the large living room only by columns. From the entrance, one gets a sense of the scale of the place, about sixty feet wide and equally



deep. Two symmetrical staircases made of light marble and adjacent to the side walls meet at the back of the first floor in a mezzanine. A passage under the left staircase provides access to the dining room, extended at the back by the kitchens and laundry rooms, while another located under the right staircase opens onto a large open space created in the new part. Depending on the needs, it can serve as a conference room or expand the reception area. Back in the living room: at the back, symmetrically arranged and surrounding the passage to the large veranda, two sets of brown velvet corner sofas are brightened up with multicolored cushions. In front of them, placed on coffee tables, two vases of flowers complete the symmetry. The frames of the old windows have been preserved behind the sofas. Through them, you can see the interior garden, beyond the veranda. The central opening to the veranda is framed by two columns of dark red granite.

The perspective has been carefully designed to give the impression of successive planes. Let's move on to the veranda, with a view of the garden: the central lawn is bordered on the right by the Guest House with a pool, sauna, and gym, and on the left by the kitchen complex, laundry rooms, and various storage areas, including the wine cellar. The garden ends at the back with an English-style landscaped area with tall trees. At their feet, shrub borders have already taken on their autumn colors, various shades of yellow and orange; they also bear clusters of small red fruits that birds love.

At ground level, some flowerbeds are adorned with lupines, peonies, and hydrangeas. The French-style lawn is adorned in the center with a circular basin surrounded by cast iron vases decorated with friezes of cherubs and flowers. The cross and diagonal paths are covered with white gravel and bordered by small box hedges. At the boundary between the two parts of the garden, behind the basin, two "Art Moderne" statues in white marble look towards the center of the house.



Bing.com / create, prompt : a veranda at the back of a magnificent mansion in the suburbs of Boston, new age architecture, through the windows you can see the garden at the back of the house, a park with flower beds and trees in the background plan, rattan seats in the veranda, Audubon prints, a vase of flowers, high quality with extreme details.

Now I'm in the veranda. It's very rare for me to take time off work, but this day is special. It has been exactly four years since I married Ray. It was just before Emilie's condition worsened. Luc and I had convinced ourselves that everything would work out. According to my father, the medical professionals were almost certain she would be saved. The weather is beautiful, one of those seasons that are sometimes called "Indian summer," an extension of the good days that one must take advantage of before the harsher winters compared to Paris. The large glass windows of the gallery are open. The veranda is my domain. Almost all the arrangement of the house was designed by a well-known Italian interior designer. It's chic, in very good taste, but at the same time somewhat conventional, impersonal, a mix of modern and old, to give the impression to those who live here that they are cultured but also trendy. It has all the necessary objects, carpets, furniture, lamps, decorations that one must have on the Northeast coast when considered successful. However, Ray let me decorate our bedroom, Joy's room, and the veranda. Here, I am sitting in a comfortable wicker armchair with intricate patterns on the backrest. Behind me, on the wall, Audubon prints depict birds. The other seats are covered with cushions in exotic printed fabric, a nod to Black Africa. When I was young, when I went to visit my father, I dreamt of one day being able to take care of a wildlife reserve. On the coffee table, there's a glass of lemonade. It seems overwhelmed by the enormous bouquet of flowers delivered early in the morning after Ray's departure, a replica of a famous Impressionist painting from the Musée d'Orsay in Paris. The small card placed in the bouquet reminds me of that.

*I am Claire, looking back on those days when my life took a turn, GreyHouse veranda, September fourth, 2015.*

Before I met Ray, my life seemed all planned out. I would be a teacher, preferably in higher education; I would join a research team. Throughout my childhood, my father had always drilled into me that it was the most beautiful profession in the world, the most rewarding. Emilie, my mother, shared the same belief and secretly hoped that I would find a husband with the same profile, an intellectually brilliant man, preferably from Paris, of course. That way, she could enjoy grandchildren who would also later become researchers themselves.

It was in June 2010 that I first arrived in Boston, at the invitation of Jill and Luc; Justin was born at the beginning of 2009. I immediately liked the city. When I saw the number of research facilities and their significance, I couldn't

help but think of the modest French structures. Did the politicians in this country even realize it? Theo considered them ignorant and outdated. However, I was aware of the excellence of French research. How much longer would it last with the lack of resources and ridiculously low salaries? Even Ydutech, Ray's startup, which didn't look like much from the outside, had much more modern and efficient laboratory equipment than the Parisian laboratory where I did my doctorate.

My thesis advisor wouldn't have even dared to hope for half of the cutting-edge instruments that were there. In the Parisian lab where I worked, we sometimes had to sweep and clean ourselves. The janitor, whose job it was supposed to be, was a union member and therefore highly protected, so he would be absent every other day. We didn't talk about it; we weren't supposed to. The director spent most of his time seeking funding at the expense of research management. He never gave up and had to endure the stupidity of French decision-makers who asked him to explain in advance what he was going to discover.

What did I know about American history? First, of course, what the French education system had taught me a very particular and sometimes caricatured perspective. My father had often told me that the French didn't understand anything about the American mentality. After graduating from high school, I had a few stereotypes in mind: before independence, the English monarchy that deprived us of our colonies in the West Indies and Canada (not a word about the disdain of the French royalty and empire for these territories), the story of revenge with the French expeditionary force, Lafayette, Rochambeau, and others, the Battle of Yorktown (for once, a defeat of the British Royal Navy!), Franklin's Francophilia, the Declaration of Independence.

No details about the suffering of indigenous peoples! Nothing about the recovery of a large part of the European economy after the Second World War. As for the United States Constitution, it had been poorly explained to me; for my part, the recognition of God by the founding fathers or the possibility of carrying an individual weapon had surprised me. Later on, a few anecdotes had enriched my view of North America, the role of the architect L'Enfant in the architectural design of Washington, the references to Freemasonry on American banknotes, the Statue of Liberty built in Paris, the name 'America' chosen for the first time by a German cartographer working in the small town of Saint-Dié in France where I spent the first years of my life, in reference to the explorer Amerigo Vespucci, as well as a few other facts. However, I still didn't really understand the American mentality.

My first meeting with Ray took place in the early days of July 2010. Luc and Jill had invited him to their home. He immediately made a good impression on me. With my poor English learned in high school, I remember feeling initially embarrassed. Jill came to my rescue, and Ray joked around.



He was dressed casually; I didn't know yet that on this side of the Atlantic, showing simplicity was a sign of success in the sci-tech field. Formal, gloomy, and necktied outfits were reserved for financiers, accountants, prosecutors, judges, or lawyers. I made a blunder at the table when the conversation suddenly turned to children. I should never have asked Ray if he had any. A wink from Jill, but it was already too late—I remember the veil of sadness in his eyes. Luc quickly changed the subject and suggested that I visit the laboratories the next day.

Bing.com / create, prompt North America's oldest map of Americo Vespucci.

*Immersion: I am Claire, the next morning, visiting Ydutech.*

From the outside, Ydutech looks like a large warehouse or an abandoned factory. Inside, to my pleasant surprise, not only was there cutting-edge equipment, but also a well-organized work environment. According to what Ray explained to me, and what I understood that there is little hierarchy. The system works in a flat structure, without intermediaries. Each employee feels responsible and can directly access him with simplicity and trust. It's a far cry from the bureaucratic pyramids in France, and as a result, the working atmosphere is good. Nobody seems to have big egos or swollen heads, but those who don't adapt leave immediately, and in the end, it's better for everyone.

One of the major flaws of academic research in France is precisely that there are personnel who are nearly impossible to remove. Weaknesses in research are forgiven in the name of teaching duties. The actual number of researchers is thus much lower than what the authorities announce. After the visit, we go to Ray's office. The management is kept to a bare minimum. At the reception desk, I meet Hillary, his secretary. She gives me an immediate wary look, woman to woman, trying to assess my appearance and find out why I'm there—quite unpleasant! Fortunately, Ray arrives. We go into his

office, where there is a baseball pennant on the table, a photo frame with a black ribbon across it, partially hiding the gaze of a young and beautiful blonde woman, a model of the university where he studied, and a few trophies rewarding his startup. We talk about research, the ongoing activities at Ydutech, and future projects. When we stick to technical English, I can hold a conversation.

We also discuss the work I did in Paris and mention the neuroscience conference that should take place there in early September. Ray had already planned to attend. That's when I start to hesitate when he talks about his visit. I think he's asking if I would be willing to guide him, but I'm not entirely sure. The word 'escort' and its meaning in French! I feel embarrassed and blush, explaining that I don't quite understand, confusing words, false friends, as we say in French.

The awkwardness quickly passes, replaced by good humor. Ray smiles and jokes, and then the conversation turns to my stay in Boston. He asks me what I think of the city and its surroundings. It is at this moment that Hillary bursts in and interrupts us. She whispers something in Ray's ear. I bid him farewell, planning to meet in Paris if we don't see each other before then.

*Immersion: I am Claire, the veranda of GreyHouse, September fourth, 2015.*

Looking back on those days when my life took a turn, Monday, September 20th, 2010, Paris, Maison de la Chimie, the first day of Ray's stay. The neuroscience congress welcomes a whole host of specialists. The conference room is packed. Ray confirmed his arrival to me by email and expressed his pleasure in continuing the conversation where we left off in Boston.

At ten-thirty, after a few presentations, it's the morning break. I spot Ray, dressed casually like in Boston, wearing beige corduroy pants and a purple polo shirt. He is engaged in a conversation with a fellow congress attendee. I approach, trying to remain discreet, but he senses that he's being watched and turns around.

- Claire.
- Ray, hello.

I also greet his interlocutor, a researcher from the East Coast whom Ray

introduces to me. His name rings a bell. I remember, he's a well-known researcher from MIT. Without delay, he starts questioning me about the European neuroscience research program. I've made progress in everyday English and American English since my stay in Boston thanks to evening classes. I manage to keep the conversation going and awkwardly explain that I still haven't managed to find a place there. I hesitate, feeling somewhat devalued, but in Europe, it's not so simple. Ray comes to my rescue and addresses him. Luckily, it's time to resume the sessions, a presentation that interests all three of us.

We join the room; Ray sits to my right, listens, and occasionally takes notes on a new-looking electronic pad. I hadn't noticed it before, but he's left-handed. What handwriting! Complete and flattened cursive, like a doctor's. I wonder, amused, how the software will decipher these handwritten notes.

It's over, just a few questions for the last speaker. I glance briefly at Ray; he's writing on his pad. Once finished, he hands it to me along with the stylus. This time, it's written legibly in capital letters: "Would you be free for lunch, 'Mademoiselle'?", "one of the words taught to the GIs who came to liberate France in 1944, also the name of a famous perfume. Not mean-spirited humor. But yes, I am free. I write my response with the stylus. A word to his other neighbor, and we leave without further delay.

It's a beautiful day outside, might as well walk, but to go where? I suggest the Saint Germain market; he should like the area, there are plenty of small restaurants, most of them for tourists, but some are decent and welcoming, serving Italian, Japanese, and French cuisines. The choice is wide, upscale.

Ray allows himself to be guided, as he had asked me to do in Boston. We've been walking for a good fifteen minutes, and we reach Jacob Street. A nod to history, I stop at the place where the Declaration of Independence of the United States of America was signed on September 3rd, 1783, a short distance from the former British embassy located at number forty-four on the same street. Ray is surprised that the place is so underdeveloped. We then pass by the Saint Germain church, where I don't linger, heading towards Saint Sulpice Square. We still have time to visit the church before lunch. There are tourists. I explain:

– The church is nothing extraordinary architecturally, but since the release of a certain successful fiction film in 2006, there has been a renewed curiosity about it.

We enter. A few people surround the gnomon obelisk. Opposite, the stained-glass window in the transept lets in sunlight. On the ground, on the axis that connects the two, there is a brass ruler embedded in a block of white marble. The block itself is part of the church's flooring. I comment:

– The lens placed in the stained glass, about twenty meters high, reflects the sun's rays onto the floor, creating a small elliptical spot of light. It crosses the brass line when the sun reaches its zenith in the sky, in other words, at noon. The line on the ground is a north-south axis. During the summer solstice, the southern end is illuminated, while during the winter solstice, it's the top of the obelisk that receives the light. Without it, the brass ruler would have to extend far beyond the church walls.

– If I understand correctly, the line coincides with the geographic meridian of Paris?

– Yes, and originally, it was supposed to be the original meridian, the geographical reference. It was only later that Greenwich's meridian was definitively chosen. In exchange, the Anglo-Saxon world committed to adopting the metric system permanently. Today, the true meridian of Paris is actually a few hundred meters from here. As for the gnomon, it dates back to the 18th century, around 1740. At that time, it was mainly used to mark religious events.

After leaving the church, we retrace our steps to the small streets surrounding the Saint Germain market. The restaurant I chose already has a nearly full small dining room. Regulars chat with the owner. A good sign, not just tourists. The menu arrives quickly, daily specials: andouillette in red wine and beef bourguignon.

I explain to Ray what they are. He taps on his smartphone to find images of the dishes offered. Difficulties in capturing the network, he has to reposition his iPhone 4 with its impeccable glass and steel finish, but eventually, it works. He shows me images of cooked dishes on the screen.

– It looks like goulash.

The superb rendition of colors is enticing.

– It looks a bit like it, yes, it's beef cooked for a long time over low heat.

– I ate it throughout my childhood.

The twelve small tables are packed closely together. Fortunately, no one is interested in what is being said at the neighboring table. Anyway, the atmosphere is very noisy. The waiter arrives and takes the order, two goulash-bourguignons, a bottle of sparkling water.

– Goulash, that's a Hungarian dish, right ?

– You guessed it, my Yahoo email address with Molnar, of course ! That's my last name, Molnar, it's Miller, the man who makes flour. My father is of Hungarian origin. He arrived in New York in 1965. As for my mother, she's Austrian, born in Vienna. My father used to go there occasionally for his work as an architect, that's how they met. They got married quickly, and the following year they emigrated.

– But this name, Ray ?

– Actually, it's not my birth name.

– Is it a secret ?

– No, even though people don't usually ask me that. He smiles.

– Gabor, I don't know if you like it. It wasn't a very common name at school, so my parents have chosen another one that seemed more "American" to them.

– And are they still there, I mean in New York ?

– Yes, and my father still works at an architectural firm. I live in Boston because I studied there; I was fortunate to have a scholarship.

The service is quick, and the plates are already here.

– And your parents, are they Parisians ?

– Emilie, my mother, became one. In fact, just like my father Théo, she comes from a small town in southeastern France. They came to Paris for their higher education. They had a cousin who lived here and could accommodate them. Afterward, my mother stayed because she found a job as a biology teacher.

– At the university ?

– Oh no, more modestly at a high school ; she would have liked to do research, but it turned out to be complicated. My father was often abroad, and she had to take care of Luc and me.

Ray waits. I have the impression that he would like me to tell him a little more, but at the same time, he doesn't want to be too intrusive. I continue :



My parents separated. My father lives far away from here in Black Africa. He works in development aid; in France, we use the term "cooperation." It involves providing financial means and specialists, technical assistants, to the now independent African countries, the former French colonies, to help them catch up. My father works as a C with universities. Initially, it wasn't his life plan; he was doing research and even obtained two doctorates in physical sciences. Now he's nearing the end of his career and will retire next summer.

– Your mother, is she still working ?

– No, she has health problems. She's not doing well, and since she's alone, I have to take care of her.

– Is it serious ?

– Leukemia.

– It can be treated quite well nowadays, except for some specific forms. So, do you live with her?

– Yes, do you know the Jardin des Plantes ?

– No, you know, the Eiffel Tower, a visit to the Louvre Museum, Notre-Dame, and Versailles. I don't know the city very well. Actually, I didn't even know that the Treaty of Independence was signed nearby, where we passed this morning.

– I live on Rue Buffon, a street that leads to that garden. It was initially created, like many others in Europe, as a medicinal garden. Then, in the eighteenth century, it became a center for intensive research. Systematic studies on plant and animal species, mineralogy, geology, and paleontology began to be conducted there. My father claims that this place should be better recognized in the history of science; according to him, it is a significant place that should be remembered by mankind.

– Isn't that the case ?

– I don't think so. Who remembers that radioactivity was discovered there? My father also likes to mock a well-known historian in France who, when asked about the most important event in 1643, answers that it's the ascension to the throne of the future Sun King, Louis XIV.

– Versailles !

– Forty years of war in Europe, my father would reply !

– But then, what event would he suggest ? You know, I'm not good with dates, but I imagine it must be a scientific discovery.

– In Italy, for example, the invention of the barometer by Torricelli, that's much more important.

The waiter returns and offers us dessert, clearly frozen. I warn Ray that there are much nicer options available in the neighborhood, like tasting macarons at the nearby market or having ice cream on Île Saint-Louis. We settle for ordering two coffees.

– If I understood correctly, we absolutely have to visit this place. Why not this afternoon?

– Shall we play hooky ? Ray taps on his keyboard, but there's no network, he doesn't understand.

– My French is not good enough !

– It means skipping school, secretly not going to school and wandering around the city, in public parks, bushes in the parks, in the countryside, everywhere.

He searches on his smartphone again. The network is back.

– I found it: 'truancy' or 'skipping school,' is that right. I didn't see anything that I absolutely must attend this afternoon. As for me, I agree, I would be happy if you continued to be my guide.

*Afternoon.*

After leaving the restaurant, we walk, following the Luxembourg Gardens along Rue de Médicis, passing by the Panthéon before entering Rue Mouffetard. I explain to Ray how this neighborhood has changed for the worse. Tourists have driven away the students; they come to eat in the numerous small restaurants, greasy spoons serving the same frozen dishes. Above, the accommodations have become too expensive for studious youth, just like everywhere else in the city center. Museums and monuments benefit the fortunate property owners. Paris, a museum, like Rome or Venice, the power of money and wealthy rentiers, the cowardice of politicians, all in collusion. We enter the Jardin des Plantes through the south gate. Tempting signs try to attract as many visitors as possible to the grand gallery of evolution. Ray absolutely wants to go in, and I can't dissuade him. Let's go! Right away, he is amazed by the place. It's surprising that such a beautiful building is so poorly utilized, too dark for sure, but beyond that, the way the collections are presented is a complete failure, outdated. That's exactly what my father claims. It really doesn't make any sense to present collections in the dark, as if they had entrusted the project to a nightclub decorator. In turn,

I explain to Ray what my father used to tell us as a family, the 1980s, the beginning of the mediocre turn taken by France under the impetus of the new socialist president. He governed like a monarch, "at the king's pleasure." Let's get out quickly! After circling the building, we reach the foot of the grand east facade, all in white stone, with its two floors and eleven windows. From there, the perspective of the wide esplanade opens up, leading to the Seine riverbanks. In the middle, the central promenade is framed by a mosaic of small squares, each containing a particular species, a true garden of plants. Set back on both sides are two large curtains of plane trees. We approach the statue of Buffon, who contemplates the facade. Ray:

– Buffon, the name of the street where you live ?

– Yes, on the right, you see the mineralogy pavilion, and at the very end, the gallery of paleontology and comparative anatomy. Rue Buffon is just behind.

– Buffon was a curator at the Museum, I suppose ?

– Indeed, he held the position for nearly forty years. At that time, in France, museums or scientific foundations were led by scholars.

– Is that no longer the case ?

– Most of the time today, they are administrators who don't understand anything about science.

– I imagine he had plenty of time to accomplish considerable work in forty years !

– In the year 1750, he published a natural history of animals and minerals, comprising no fewer than thirty-six volumes. By examining mammoth fossils, he came up with the idea of species extinction. At that time, it was still common to believe, as in ancient times, that these animal forms trapped in stone were failed attempts of nature or species that had not yet been activated by the gods. The clay figurine of the Nile that comes to life, the soul breathed into it by the gods. He also dared to question the age of the Earth using a very simple method.

– How did he proceed ?

– He was knowledgeable in metallurgy because his family had a foundry. He simply studied the cooling time of metal balls previously heated to a high temperature. He concluded that the Earth must be at least several hundred thousand years old. Initially, he only dared to speak of seventy thousand years because it was already a factor of ten higher than the writings of the Bible. A few hundred years earlier, he could have ended up on the stake,

burned alive for heretical statements.

– And all the way at the end of the alley there, who is that ?

– That's Jean Baptiste Lamarck. His statue overlooks the Seine. Buffon and Lamarck stand back-to-back! The two scholars had opposing ideas about evolution. But before we go all the way, on the left, there are the greenhouses and further towards the Seine, an animal area, a menagerie as it was called in the past, the precursor to zoos. It already existed during the time of the French Revolution. Even further to the left, along the street that borders the garden, you'll find the premises where historical research on radioactivity was conducted (Curie, Becquerel). It was in one of these buildings that artificial radioactivity was discovered on May 1, 1896.

– I know the anecdote : crystals of uranium salts that impressed a randomly placed photographic plate.

– That's for the record. In truth, the discovery seemed inevitable if you consider the work that the Becquerels carried out from generation to generation.

– I saw on the map that there is also a labyrinth behind the greenhouses.

– We can go there, it's right next to it, but to be honest, it's just a kind of spiral.

We enter the alley between the greenhouses, pass by the large Lebanese cedar planted in 1734. Once we reach the bottom of the maze slope, we climb the narrow path between the yew and boxwood bushes; they reach chest height. Very soon, we find ourselves inside the small round belvedere. The main dome, four meters in diameter and made of iron lacework, is supported by eight metal poles shaped like spears and decorated with verdigris-covered acanthus leaves. It supports a smaller second floor, crowned with a celestial sphere. Ray notices the advanced state of corrosion. I explain to him:

– At that time, the electrochemical problems related to the combined use of metals used for the initial decoration, lead, copper, and gold, were not yet known. Obviously, one might find it modest compared to the Eiffel Tower, but it is still one of the first buildings constructed in France using wrought iron and entirely metallic. Buffon had it erected. The location was the highest point of the largest rubbish dump in Paris.

– A rubbish dump?

– That's what the French word refers to an area where garbage is deposited. Around 1650, the King of France decided to buy it to turn it into

a medicinal garden. Where we are standing, there used to be a mound of refuse that overlooked the Seine's bank by a few dozen meters. Then they planted. Perhaps initially, the intention was to create a real labyrinth because it was fashionable in Europe, but, they mostly planted lawns and a few trees. The name labyrinth stuck. For the Parisians of the nineteenth century, it even became a romantic meeting place. But look, from here, you can see the apartment where I live with my mother.

The apartment is clearly visible on the fourth floor of a building on Rue Buffon; I point it out to him.

- The second-to-last floor, where you see the white blinds.
- Isn't your mother waiting for you ?
- Tonight, yes, but I don't come home for lunch every day.
- I suppose apartments must be in high demand here.
- My father bought it in the 1980s; it was still reasonably priced at that time.
- I see a Latin inscription under the cornice.
- **horas non numero nisi sernas.** 'It means, I believe: 'I only count the happy hours.'
- A wise motto !

We are alone. I have a strange feeling of being elsewhere, not in the everyday normality, not in the center of Paris. Something has changed, even if it's indefinable. While I was playing the guide, yes, that's the right word, while I was playing, another Claire gradually slipped into me, more feminine, teenage and woman at the same time. I'm losing control. Ray speaks to me as if in a dream, and I continue playing my role without even paying attention to what I'm saying. He looks at me.

- I really like this place, and I feel very lucky to be here with such a pretty guide. He doesn't give me time to react, to be troubled, and he takes out his toy phone.
- A photo ?

I smile. He takes several shots from different angles, comes closer to show them to me, trash, kept, trash. A family of Japanese tourists arrives, and Ray asks them to take a photo of the two of us. The gaze of the father troubles

me. I can read in his thoughts; he thinks we are together. Ray simply hugs me just enough, putting his hand on my shoulder, a few clicks, the father returns the camera, thanks exchanged. In return, Ray takes a photo of the Asian family and says a few words in Japanese. We look at the photos. I have trouble recognizing myself, looking very beautiful but with a vague feeling of being the girlfriend in teenage photos, the day when you think you've found your first love. The snapshot seems too intimate, Ray looks happy, and I'm on cloud nine. He realizes this and suggests deleting them, no, definitely not! We leave the maze, walk back down the main path towards the Seine, passing by the children's carousel with dinosaurs. Lamarck statue, photos. Ray promises to send them to me by email that evening, and I hope he includes the ones taken in the maze.

– It's a chance to be able to live here. I understand your choice of life sciences. As for your father, he preferred physical sciences, from what I understand ?

– Actually, no. He chose to study that field because it was easier to find a job afterwards. Life sciences weren't as developed back then.

– And in that field, did he have any preferences ?

– When he was young, he read a book about biological fields. Some daring researchers were hypothesizing about it. At that time, it was seen as an extension of the idea of physical fields. There could have been a sort of biological field that bathed all living beings.

By following the same approach as in physical sciences, we could have discovered new laws. We arrive at the Gallery of Paleontology. Ray takes one last photo in front of primate skeletons, and then we leave. His phone rings. It's the end of our walk. I sit down on a bench. The magic is gone. A few meters away, Ray goes back and forth in big strides, giving brief orders. He's no longer with me, no longer in Paris. In any case, I had to go back home to take care of my mother. Ray bids farewell, apologizing.

*At home, 9 PM.*

My mother has gone to bed after eating too little. I open my computer and find about twenty photos sent by Ray, including one taken in the maze. Along with the photos, a short message: "Thank you, my best day in a long time. Tomorrow at the conference center?"

*Immersed in my thoughts, I am Claire, my mother.*

I look back on those days when my life took a turn, Paris, the second day of Ray's visit, Tuesday, September 21, 2010. A studious morning until 11 AM: conferences, meetings. Ray met some young researchers, including a colleague who graduated from the same lab as me, with a similar research profile. Who knows if he's trying to recruit him? I feel a bit jealous. He passes me the notepad, playing hooky? I'm up for it. We head towards the banks of the Seine, heading to the Musée d'Orsay. Ray lingers in front of the rich collections of Impressionist paintings. Passing by the sculptures, he starts talking to me about abstract art, his interest in it, allowing more degrees of freedom for the imagination than classical art, engraving compared to sculpture, comics compared to a well-crafted novel.

*12:30 PM.*

Heading to Montmartre, we'll continue with painting! Well, it feels really touristy, but I'm not in the mood to refuse. Line 12 of the Paris metro, and we get off at Abbesses station, the "I Love You" wall, disappointing! Too much writing for my taste. I would prefer graffiti or even better, those small drawings that capture only the tenderness and delicacy of first emotions, the gentle embrace of couples, hearts pierced by arrows, simple and humble ideograms of those who are about to come together and still expect nothing from each other. The century is no longer like that, tabloids, reality TV distort everything, make relationships between boys and girls vulgar, stealing the beauty and authenticity of first connections from young people. Ray still takes a photo, quite successful, two smiles, the prospect of a new life.



Bing.com / create, prompt: Paris Montmartre, place du Tertre, the Sacré-Coeur in the background, cobblestones on the ground, trees, a lamppost, souvenir shops and small restaurants, a male painter with a hat paints the portrait of a young woman.

*Place du Tertre.*

Lots of easels, good and bad artists. Fine arts students looking to make a few euros do caricatures; elsewhere, some amateurs prefer watercolors,

always appreciated by tourists. It's economical and quick. The composition and execution are standardized: a drawing represents the white domes of the Sacré-Cœur, the steps of the grand staircase, a lamppost, a bouquet of flowers, trees, the sign of a bistro, a painter in front of his easel. Then, they paint a diluted blue background for the sky, white clouds, and then the outlines of the basilica with a finer brush. A few denser spots of color and it's done. A pleasant surprise, however, today there are one or two established painters. Ray has very good taste, as I understood earlier at the museum. After going back at least four times, he turns to an old man who does Impressionist paintings. The few exhibited paintings, copies of well-known works, testify to his craftsmanship. The juxtaposed colored strokes in different shades perfectly restore the truth of nature, restore all the emotional richness of the subject. Only fifteen minutes for the portrait, that's promised by the artist! Ray manages to convince me to try. In fact, I've been sitting for almost half an hour already, but now it's over. The old painter captured everything that seemed interesting to him in me. It's still a sketch, but the resemblance is striking. The artist suggests that we go for lunch while he continues his work.

*Continuation.*

We let him work. I couldn't even say what we ate anymore, I wasn't interested. Similarly, I don't remember exactly what we talked about, I was on cloud nine. Back to reality, we were having dessert when Ray announced that he had to leave the next day. My heart sank. But we could go out together tonight? At least if it's possible with my mother. Very quickly, all sorts of thoughts crossed my mind. I had never been in love, for me, it didn't exist as such. In this aspect, I was truly my father's daughter. For him, it was just the combination of several factors: reproductive instinct, hormonal drive, cultural or intellectual attraction, empathy instinct, Pygmalion effect, circumstantial state of mind. In short, one had to be wary of love at first sight and instead favor a reasonable relationship, which he seemed to have done with my mother. I quickly pushed all that out of my mind, going out with him in the evening, yes, of course, that's all I wanted. As for my mother, he suggested that we go see her. We left the restaurant around two-thirty. The painting had progressed well, even if I didn't quite appreciate the 'basilica' background of the Sacré-Cœur, unavoidable! Ray slipped some bills to the painter and his business card after writing down the address of his hotel. A little stroll on the square in front of the basilica and back to the Jardin des



Plantes. Emilie was only expecting us around five o'clock; so, we went back to the large greenhouse. Orchids, photos, an iPhone placed on a wall with the self-timer activated, a snapshot of both of us embraced, it happened so naturally that I didn't refuse. When he hugged me tightly and kissed me afterward, I didn't even protest. We walked out of the large metal and glass building hand in hand, like teenagers.

*Immersion: I am Claire, Paris, the second day of Ray's stay, at Émilie's place, Tuesday, September 21, 2010.*

We're at my place. I just introduced Ray to my mother as an American colleague. What naivety to believe that a mother can't figure it out! She's not fooled, she had been waiting for this for so long. Despite her weakness, she tries to be friendly and cheerful, she asks a lot of questions. The examination went by quickly and was successful, Ray even managed to make her laugh, a ray of sunshine in her heart. I know my mother's worries, Theo far away in Africa, Luc in America, the family scattered. She fears that one day I'll be alone in life. She's not sure if the doctors and their promises will really heal her someday. Ray plays along, behaves as if it were a serious relationship. Finally, he takes the plunge. Since he has to leave for Boston tomorrow, he would like to go out with me tonight. No problem for my mother, she approves. I walk Ray down to the building's entrance. He gives me the kiss I've been waiting for. We'll meet tonight at the reception of his hotel, rue de Rivoli, near the Louvre.



Bing.com / create, prompt : one bateaux-Mouche on the Seine in Paris, at night, you can see the Eiffel Tower illuminated.

*Nineteen forty-five.*

I arrive in the lobby. Ray gets up from a vintage brown leather club armchair, holding a rectangular package in his hand. The taxi is already ordered, so as soon as I enter, we head straight out to the Quai de Seine, left bank, a little downstream from the Eiffel Tower. We need to be there a good fifteen minutes before the departure of the restaurant barge, scheduled for eight-thirty.

The premium table is located right by the window, at the front of the boat. There's a small bouquet of roses on the table and two glasses of champagne; outside, the nighttime lighting already illuminates some of the landmarks. During the meal, we talk a little about me and a lot about him, his life as a student, the sport he wasn't very good at, a handicap in North American universities when you want to get a scholarship, his not-so-wealthy parents. Despite everything, he managed to enroll in a prestigious institution in Massachusetts. He talks about the day of his graduation, his early professional career, the first experiences, the first patent filing, this successful start to his life. I delve into his life like an open book, a book from which everything about his wife has been removed. A will to forget, a wound not yet healed, perhaps a subconscious need to open a new chapter. He also explains how much he regrets not being able to do research himself, but he is too absorbed in the development of his startup. To survive, he is condemned to constantly grow. Without that, inevitably, Ydutech would be acquired, and then he would no longer be in control of scientific decisions. It would be the financiers, the insurers, the pension funds who would decide alone. Of course, they would refuse the risk, and the same thing would happen as in the public laboratory where I work, all sorts of blockages, no real freedom.

I also have the feeling that he feels the need to justify himself for having, like so many other SciTech startup founders in the US, turned to a large, specialized law firm. This transformed him from prey to predator. The men in dark suits behave like the beasts that hunt the most vulnerable animals. They know how to cheaply acquire promising seeds, startups that struggle to find funding. Ray also describes to me the great enthusiasm for science in America, like in the 19th century in Europe. Following in the footsteps of inventors like Edison or Bell, more and more talented researchers decide to take their own destiny into their hands, refusing to let capital rule alone. They do not want to experience the misfortune of Daguerre, Curie, or even Appert in France, letting industrialists and merchants alone enjoy the benefits of their research. Ray is inexhaustible when it comes to science, as if Jules Verne's books were on his bedside table. That evening, I understand that he will never stop. Some in America dream of colonizing Mars or Titan, while he dreams of eternal life, a humanity without diseases, a world without evil. On my side, I talk about Theo, my father, my trips to Black Africa, my studies, my life, what I like and dislike.

*At about ten-fifteen p.m.*

The boat docks. Ray puts his arm around my waist. Side by side, we walk towards the Eiffel Tower. We stop several times, and he kisses me for a long time. It's already midnight when he calls a taxi. Before parting ways, he awkwardly gives me the painting wrapped by the old painter. Ray prefers to walk back to his hotel; he only must cross the Seine.

*I am Claire, after Ray's departure from Paris, I remember.*

Then, everything happened very quickly. Every Tuesday, I received a bouquet of roses at my mother's house. In October, he emailed me to propose returning to Boston to conduct an expertise for Ydutech, and I accepted. It was during an excursion to Cape Cod that he asked me to marry him, without putting too much pressure, maybe because he doesn't like to lose and he had doubts about my answer. After Thanksgiving, I returned to Paris and spent Christmas 2010 with my mother. It was then that I talked to her about our plan to get married. It was she who pushed me to go back to Boston after the holidays. So, in mid-January, I was with Ray again. I made two more round trips to Paris. Finally, we got married in September 2011, a very simple ceremony, a meal with Jill, Luc, and Ray's parents, but without mine. The doctor had advised my mother against traveling from Paris, and my father hadn't given any news. I understood later why he stayed in France.

**success**

*I'm just Joy, 1 hour 12 minutes of experience.* The Machine gives me a little respite. The interface is disconnected.

Krawn is by my side:

– You need to realize, Joy, everything your mother has accomplished, the key role she played since her arrival at Ydutech. In the 2010s, given the state of knowledge, there was little hope that a miracle treatment would suddenly cure diseases like Parkinson's, Alzheimer's, or multiple sclerosis, especially when the disease had already been diagnosed. Perhaps one day genetic engineering would overcome them, but in the meantime, the most reasonable solution was to combine several methods. Ray considered it necessary to conduct research in various promising areas other than the chemical pathway, which was Ydutech's primary speciality. Among them were

stem cells, but also physical stimulation involving the activation of electrodes directly in selected areas of the brain. Even though it wasn't Ray's openly stated goal, he already had the idea of opening a specialized establishment, a kind of clinic where efforts would be made to delay the onset of mental disorders or even cure a patient already burdened with cerebral degeneration. Acquiring expertise now, preparing for the future, he couldn't wait. For this purpose, despite all his work as CEO, he continued to keep up with technological advances, staying informed about all the research published on these subjects. His intention was to recruit promising young researchers, particularly from the rich pool available in old Europe. That's how Luc and Jill came to Ydutech.

he strategy proved to be successful, and success followed. It would be difficult to say what part was due to genius, intuition, luck, strategy, hard work, or simply destiny. In the immediate future, financial returns had to be ensured. Claire, on her part, understood Ray's objective very well. Time was a hindrance. The legal obligation to conduct a series of tests on animals and then on humans, the time it took to obtain market authorization, all of that had condemned numerous promising biotech companies that were unable to bear the financial burden of waiting. When your mother arrived in 2011, she immediately immersed herself in research, and it was she who found the relay solution to await the financial benefits of the new molecules designed at Ydutech.

She suggested to Ray to exploit molecules that had already fallen into the public domain. By adding carefully chosen excipients, sometimes as simple as essential oils, the effectiveness of an active ingredient could be greatly multiplied at a low cost, giving a second life, in a way, to certain formulations. In a very short time, she succeeded in reformulating old molecules using this strategy, but she also significantly improved the efficacy of Ydutech's flagship drug for slowing down the progression of Alzheimer's disease. In parallel and as an extension of her doctoral work, she continued to work on identifying genetic markers that predispose to neurodegenerative diseases. Genetic tests became easier and faster to perform, and less expensive, so she quickly developed a marketable solution with her team. Once again, the financial returns exploded. The potential was enormous; who wouldn't be tempted to know their personal risk factor? After all these successes, Ray promoted your mother to Director of Research, and you should know that no one at Ydutech had any objections.

– But all of this was a lot : leaving Paris, marriage, research work?

– If your mother threw herself into research wholeheartedly, of course, it was because she enjoyed it, but it was also to forget, to definitively turn the page after your grandmother's death.

– And how were Uncle Luc and Aunt Jill recruited ?

– Like many other young entrepreneurs in the US SciTech field, Ray didn't rely on a specialized talent search firm or a human resources director. He didn't believe in those complex and off-topic interviews conducted by psychologists with dubious profiles. He preferred to trust his instincts. The announcement of a scientific congress in Glasgow caught his attention. A certain Luc Lombard was supposed to present work on neural stimulation, a name with Italian and French resonances, probably a foreign student, he thought. The Erasmus program for university exchanges in Europe mobilized many talented young researchers who were not afraid of mobility. Specifically, Luc was involved in stimulating and generating basic sensations or thoughts by bypassing the senses such as sight.

For this, he used brain implants with a technique that seemed original to Ray. The experiments were conducted on rodents. Another presentation from the same laboratory was to be given by a certain Jill Moray this time. She had developed a new signal processing algorithm for ECG and MCG techniques, electro and magnetoencephalography. To do this, she had leveraged the latest knowledge in neural networks. Each sensor received a signal resulting from the electrical or magnetic activity of numerous neurons or cells. Processing all this data had to sort and assign specific signals to certain activities, identify the truly involved areas, and untangle a whole web of data. The experiments this time were conducted in a hospital setting with voluntary human subjects. The sensors were distributed in caps adapted to the shape of the skull. They captured signals related to cerebral activation associated with a naturally induced cognitive or emotional episode, in other words, a sensory stimulus. The abstract of the upcoming presentation mentioned the case of the visual cortex. All these topics interested Ray greatly. He was convinced that external sensors would never be able to faithfully replicate thoughts. Internal implantation was essential, even if, for now, ethical principles limited or even prevented many experiments. Soon, he had no doubt that attitudes would change, and people would understand that new techniques had nothing to do with the horrible methods used in the past, such as lobotomy, which had caused so much damage, or the effects of implanting excessively large electrodes. Other well-known players in the SciTech field also dreamed of fully exploring the brain. From the East Coast

to the West Coast, there were numerous researchers ready to accelerate and with considerable resources at their disposal, thanks to visionary billionaires willing to finance an adventure aimed at replicating the mechanisms of life.

– So my father went to Scotland ?

– Yes, and after the presentation of various works, they met up with three people, your uncle Luc, your aunt Jill, and him, several times. It happened over a drink in a pub in Glasgow. Luc and Jill were already a couple. They talked for a long time. Ray noticed that Luc was just as passionate as him. He knew everything about brain stimulation. In just a few minutes, your uncle summarized past work and the current state of research in a lively and exciting way. He mentioned the promising trials conducted a few years ago using deep brain stimulation to reduce certain symptoms of Parkinson's disease. Ray also had no doubt that to progress in therapeutic treatments of this kind, it would be necessary to develop finer and less invasive implantation techniques for brain matter. Miniaturizing the electrodes, learning to position them precisely, and to remove them, it was the main problem that Luc had faced in his thesis. Everything was evolving very quickly, and the field of nanotechnology was progressing rapidly. Researchers were developing molecular motors, and soon it would be possible to go deeper and deeper into stimulation. They would be able to understand the activity of increasingly smaller groups of neurons and control the synapse connections.

Identical research was being conducted in the US military with the main objective of conditioning fighters, making them overcome fear, inducing courage or aggression, essentially modifying behavior. The subject of miniaturizing brain implants also interested them, and collaborations could perhaps be considered if Ray had high-quality researchers. The military's resources had so far been limited because more and more senior officers were convinced that future battles would involve robots rather than humans. They would have no qualms! At Ydutech, brain stimulation enabled by precise implantation could be a complementary means of treating neurodegenerative pathologies. But above all, implantation would allow access to brain functioning, the analysis of a personality, and eventually its reconstruction. It was another way to achieve immortality.

Ray was seduced by all these prospects. He also understood that he would never recruit Luc without Jill. She wouldn't leave without him, and he wouldn't leave without her. They were complementary in life as well as in work, inseparable. So, he took a chance, explained what he was doing, what

both of them could find in Boston, the most advanced research resources. He offered them to come to Ydutech, with airfare and accommodation covered. For Luc and Jill, it was a vacation they could never have afforded. Once they arrived, they noticed the age of the premises, just old industrial structures. But that was from the outside. When they entered the laboratories, Jill and Luc were surprised, as your mother would later be, by the quality of the equipment. They had the apparatus they had dreamed of, the latest and most advanced technologies. The salaries, while not huge, seemed sufficient since they were both working, and your father promised to involve them in the results. After returning to Glasgow, they thought about it. After all, the climate wouldn't be too different. Eventually, they arrived in Boston in early 2008.



Bing.com / create, prompt: a wide view of downtown Boston, sunny weather

*I am Joy. Nautilus sent me to the Ydutech headquarters on September 4, 2018, and the Machine injected me with some information. I'm leaving Boston, heading northeast.*

The central building of Ydutech is brand new, and the strategy has paid off. In just a few years, the company's revenue has multiplied tenfold. This success seems almost too easy for Ray. However, as he mentioned to Claire in Paris, his biggest regret is not being able to do research himself anymore; it's the fate of many new engineer or doctor CEOs. Funding is everything, money, an essential lever for research. It's only 7:45 am when Ray arrives for another day scheduled like a well-oiled machine, like the perforated paper that programmed the scores in the old European music machines. Ydutech has changed a lot from the outside. The surrounding industrial wastelands, old and gradually acquired, have been replaced by several groups of buildings, research units, and production facilities, all surrounded by greenery. In place of the original hangar, the new headquarters of the company is a kind of metal and glass shell inaugurated in 2015. It has a private elevator serving the top floor, a fully glassed open space occupying the entire upper part of the shell and offering a 360° view of the surroundings.

Beyond Ydutech's facilities, there's the ocean, and in the distance to the

south, the buildings of downtown Boston are clearly visible. Ray is at his desk. Outside, the weather is not great, but despite the light gray clouds, the space is bright. On the glass surface of the desk, there are a few mementos from the past: a pennant from his university, a Lego model of a molecule, a black obsidian skull, a frame with Claire and me. The portrait of his first wife crossed out with a black ribbon has disappeared. The floor below is Hillary's domain. She supports Ray in all administrative tasks. She is only called a executive secretary by those who don't know her well. Initially hired for research purposes, she developed the first molecules of the young startup. When Ray had to step away from research to focus on management tasks, she did the same.

Together, they managed to overcome the many initial obstacles, resisted the appetites of big biotechnology groups that wanted to absorb them. With Ydutech's lightning-fast success, the shares Ray gave her in the company would be enough for her to live comfortably without working, but she got caught up in the game, acquiring more and more legal, accounting, and operational skills. Ydutech is her whole life. She liaises with lawyers, lobby experts, and financiers. Several secretaries and administrative assistants work with her. The other reason she stayed is that she has always been in love with Ray, but only the longest-serving colleagues know this. When Jackie, his first wife, disappeared in a tragic plane crash eleven years ago, Hillary vaguely hoped to get closer to Ray. But in vain, he closed himself off, became even more invested in his work. However, she still held onto hope until that day when her feminine intuition warned her that there was someone else. It was upon their return from a trip to Paris. Her hopes were definitively shattered at that moment. Indeed, one year later, on September 4, 2011, Ray and Claire got married.

*It's 10:00 am.*

Hillary is preparing with Ray for the negotiation scheduled for today. It involves the potential takeover of a promising biotech company. Its acquisition would complement the range of scientific analyses and controls already offered by Ydutech. It would be a new growth opportunity with regular financial returns until the new treatments being designed to fight against senility reach maturity. Preventive tests are eagerly awaited by insurance companies, health and life insurance providers, and, of course, the general public.



*Mid-afternoon, still at the Ydutech headquarters, September 4, 2018, Nautilus takes me into my father's thoughts.*

Here's another meeting that lived up to its promises! The administrators and financiers have reached an agreement on the proposal to be made to the shareholders, a thirty percent bonus for the buyback of their shares. Under these conditions, it would be unlikely for them to refuse. There are also a few administrative authorizations, but they are no longer under my jurisdiction. Very soon, Ydutech will become a leader in the analysis and screening of neurodegenerative diseases, another success. Another takeover. My legal and tax advisors charge a hefty price for their services, but they are effective. It's a shame for Elton, whom I have known and appreciated for a long time. He lost his talented startup; it must be very tough for him. This time, the objective of the acquisition was simply to eventually disrupt the introduction of a competing molecule into the market. Its development will be put on hold for some time. I feel somewhat guilty, but it was a matter of being absorbed or being absorbed, fair play in this business environment.

In any case, the finance industry appreciates these consolidations. For the past two to three years, Ydutech's stock price has been constantly rising and has even soared on the stock market several times. In just ten years, the original startup has become a major corporation in the biotech MedTech field. I take no pride or arrogance in all of this. It was almost too easy compared to the beginning when it was so hard to raise modest funds or obtain bank credits. The era of business angels is over. People are scrambling to invest in Ydutech, a snowball effect with a personal fortune that keeps growing. Is it well-deserved? As a consolation, I can tell myself that others have made a fortune by creating groups in sectors that are less useful to humanity, such as social networks. It's surprising because one would have thought that it was the responsibility of governments to take control of this sector dealing with exchanges between citizens. Other examples include the rental of goods to individuals, ride-sharing services, or logistics. All of that is easy and doesn't bring anything essential in the long term, unlike hardtech, which deals with robotics, transportation, space, medicine, or construction. Ydutech is indeed a useful company.

Claire has no idea about the wealth and power I now possess, nor my level of influence. For her, there is only research, me, and Joy. She doesn't care about money, and she's right. I avoid talking about this subject with her. She wonders why we live in GreyHouse, this magnificent mansion that used to belong to one of the wealthiest families in Boston. She doesn't know that financially, it means very little to me. However, if something were to happen to me, she would be prey to all sorts of scammers. I wouldn't be the first to disappear prematurely after building an empire. Destiny has already struck me, Jackie, my first love, tragically, abruptly, unjustly disappeared in a plane crash. I must remember to make testamentary provisions for Claire and Joy.

## birthday.

Seafood.

*I am Joy, twenty-three years old, Underground, Nemo project, April 20, 2035, second day of the journey, experimental time: 1 hour 14 minutes. Immersion: I am also six-year-old Joy, Boston, GreyHouse, September 4, 2018.*

Late afternoon, it's starting to get chilly. I play in the garden, all the way at the back, near the trees where the squirrels live. During the day, it's impossible to see them because Michka, the Australian Shepherd that dad



gave me for my birthday, scares them away; it's only in the morning that I can see them from my bedroom window. They make occasional ventures onto the ground, and at the slightest alert, they rush up the trunks to the safety of the treetops. I just placed a small box with hazelnuts and pecans taken from the kitchen; mom won't notice. Across the way, I see the greenhouse framed by lush wisteria vines; their white and blue-violet blossoms are gone, but on the ground, the hydrangea beds are still blue and pink. Johanna calls me; it's time to come inside.

Greyhouse, create, prompt: behind a new age mansion, a ten-year-old girl, red-haired and with freckles, plays with an Australian Shepherd dog, squirrels climbing a tree, flower beds.

We settle in the sunroom. She brought down a sketchbook and colored pencils from my room, but I'm not in the mood to color. In the notebook on my lap, I deliberately do everything wrong; the colors overflow the outlines of the seashells and crustaceans. The lobster ends up bright yellow with dark green eyes, and the shrimp are dark purple. By pressing too hard, I break the tip of the red pencil. Johanna suggests putting the notebook on the table and using markers instead of pencils. It would be easier, but I don't listen. I overheard mom and dad earlier.

Tonight, they're going to the restaurant without me. I'm mad at them; moreover, I know exactly where they're going, a seaside restaurant where they serve precisely the seafood that I'm supposed to color. When we go

there during the day, I can have a lobster roll.

*Immersion: I am Claire, my mother, same day, evening, at the restaurant.*

A sign, Yellow Lobster, a small red-brick building with windows framed in white-painted wooden panes. The restaurant is modest, but the location is good. Every wedding anniversary, Ray invites me there; it has become a ritual. I enter. Ray is already seated on the terrace overlooking the small marina at a table near the railing. Medium-sized or small boats are illuminated by streetlights. The neighboring table is occupied by a family with a Quebecois accent, tourists enjoying the beautiful late season. Soon, the little restaurant will be full.



Bing.com / create, prompt: in the evening, a small fishing port on the north of Boston, a pier, boats, a seafood restaurant, details, realistic

Ray orders oysters, a bottle of Napa Valley chardonnay, and then it will be "homard al diavolo," the restaurant's specialty, lobsters accompanied by linguine and clams served abundantly in a skillet. Ray:

– Did she cry a lot ?

– Of course, can you imagine ? I had to promise her that we would come back with her.

– I have a better idea. We could go for a weekend in Mount Desert. She loves walking in the park, and we can take her to a restaurant in Bar Harbor. What do you think ? As for me, I think I can free up my schedule by the end of the week.

– That would be a good idea.

– Do you like that region too ?

– What a funny question.

– Living there must not be so unpleasant, a humble and simple life, surrounded by nature all the time... I look at him, half amused, half ironic. Ray and his way of bringing up unexpected subjects! He stops eating, pours some wine. The server takes away the oyster plates and brings the main course. Our fellow tourists don't pay attention to us.

– You know, you're starting to sound like my father Theo, whom you often

criticize. Enjoying life day by day, not being too ambitious, that's what he experienced throughout his life in Black Africa. The problem, as you well know, is that not all men think that way. Earth becoming too small for them, they jostle and trample each other. The strongest crushes the weaker. That could explain why so few people are ready to live simply.

– What I actually reproach your father for is his excessive lucidity. How can one be happy when they notice all the flaws in society? I don't answer and look at him. He insists:

- Am I right ?
- It's possible, but I'm waiting !
- Waiting ?
- Of course, I know you. You have something important to tell me.
- Alright, I was thinking of creating a foundation.
- A foundation ? I'm a bit incredulous.

Only very powerful companies can afford that. You need to be financially strong.

– Today is the perfect opportunity to talk about it. You know that Ydutech has just made two major acquisitions. We're changing dimensions like the internet giants did in their time. If we stay on course, it will be very difficult for anyone to catch up with us in the coming years. You can imagine the taxes the company will have to pay, even with its headquarters moved to Delaware. I highly doubt politicians will use it to fund research, and even if they did, I doubt it would be done effectively. By financing a foundation, we would be free to choose the research directions.

I'm starting to understand. This Ray who is going to talk to me is the same Ray who has always regretted not being able to do research himself. The foundation is a substitute!

– And the orientations, the research themes, I suppose you have an idea ?

– I can already tell you what it wouldn't be : one of those charitable foundations that claim to defend the status of women or children, more generally refugees from countries that refuse to acknowledge our values or continue to proliferate without caring about the destruction of the environment.

– Don't you think you're being too harsh ?

– No, one must be realistic. The progress of humanity has been made through the selection of the best and not through the unconditional protection of the less capable. If the West continues its current approach of promoting unconditional sharing, then it is certain that it will decline in the long run. It won't be able to mobilize enough resources for major projects. Asia will take over, and rightfully so. It will simply follow what nature suggests to it, continue the selection. On this point, I agree with your father. Christ was completely mistaken when he wanted to share and forgive everything at all costs, a religion of decline. The duality of the dominant and the dominated, a masochistic Christ who loves to be dominated in contrast to a dominant prophet Muhammad, that's what he said, right?

I don't know what to say, but Ray is already continuing:

– To get back to our subject, I'm seriously considering a foundation that would have as its primary objective to increase life expectancy. In a more general sense, it would strive to improve the human species both mentally and physically, **mens sana in corpore sano**, even more, a better mind in a better body.

– So, it would be a foundation exclusively dedicated to research ?

– No, half fundamental and applied research, complementing the successful one carried out at Ydutech, and half clinical, accommodating patients with neurodegenerative diseases. I'm targeting a wealthy, influential clientele capable of supporting the foundation and providing significant resources to ensure its sustainability.

– And when would all this start?

– The statutes for the future foundation are ready, and the financial framework to start is also in place.

– I imagine you plan to establish it nearby, in the countryside ? Maybe by a lake? There are already educational complexes that have made that choice. Ray hesitates.

– I've had several proposals in that direction, but the cost of acquiring the land is truly excessive. I also thought about a possible installation further north, along the coast. You and Joy like Maine, don't you? Let's go back there!

– But from Bar Harbor to the Canadian border, you know that the coast is almost entirely protected. It's a succession of natural parks, land or coastal reserves, hiking areas.

– That's true, except for a few rare spots. I've already been there and made some contacts. Just for the foundation's image, the project will have to strictly respect the environment. For every tree removed, another of the same species will be replanted. The few remaining available areas are, in any case, the least spectacular in terms of tourism, and the counties can't afford to miss out on some development. There will be no industrial nuisance to expect. A progressive image would be welcome in a state often considered purely touristy. I found a large piece of land for sale, a sort of wild peninsula bordered on one side by an almost abandoned farm and on the other by two very old vacation houses. We could go see it if you'd like, and we could take Joy and Johanna along if she's available, of course. It would only take us a good two hours by car from Bar Harbor to reach West Quoddy. We could have a picnic there and then slowly drive down the coast. What do you think of this idea, Madame Director of Research at Ydutech?

– It's a good idea for the outing, but we'll have to see on-site for the rest. The server returns.

– Any dessert ? Ray looks at me. No, I prefer to watch my figure.

– I'll organize the excursion. On your side, you should check with Johanna.

– No problem, I'll take care of it. It's already late, ten o'clock. Ray pays the bill, heading to GreyHouse.

## **picnic**

*The Machine immerses me in my own past. I am six-year-old Joy, on an excursion to Maine, Saturday, September 18, 2018.*

Two weeks have passed since our regular flight from Boston to Bar Harbor. After an hour and fifteen minutes of flying, the twin-propeller plane lands. It's windy, and Johanna's long blonde hair gets tangled. A car drops us off at the hotel where Mom and Dad go when we're on a family trip. Mom explained to me that it used to be the summer residence of a wealthy New England family, back in what they call the Gilded Age. The small resort was already popular among the elites. I really enjoy coming to Acadia Park. Sometimes Justin also comes on weekends with Uncle Luc and Aunt Jill, and we go boating. We also hike up Cadillac Mountain when there's no fog. In the evening, we usually go to a restaurant, a fancier place than where they go for their anniversary. So tonight, I'm looking forward to making up for it. I already know what Mom and Dad are going to order: lobster with melted

butter and scallops, without the coral as Mom says, that yellow, orange, or white part shaped like a crescent. Here, the fishermen throw it away after the catch, but in the old world, in the country where she lived before she met Dad, they eat it. Tomorrow will be a picnic.

*Next day, Sunday, September 19.*

I'm in the car, sitting behind Johanna; we've been driving for almost an hour and a half on US 1N, with Dad at the wheel and Mom next to him. She turns around to announce that we should arrive in Whiting soon, in about fifteen minutes; then we'll reach the coast. The scenery is monotonous, the road is straight, bordered by pine and deciduous forests with occasional hamlets. I'm sure there are blueberries and mushrooms, but Dad says we don't have time to stop; we'll do it later when we have our picnic.



Bing.com / create, prompt: West Quoddy Lighthouse.

*Whiting.*

We leave the main road to take Road 189 towards Campobello Island, on the Canadian border. On the navigation screen of the dashboard, I see that we're almost at our planned destination, West Quoddy Lighthouse. A few miles before Lubec, we turn right; the small road leads to the ocean. It's still sparsely populated, with only a few houses that can be counted on one hand; the cottages are modest but well-maintained, painted in light and vibrant colors, and brightened by unfenced flower gardens. There are wild pink and white wild roses, isolated giant hollyhocks, and here and there clusters of lupines proudly reaching towards the sky with their large purple flowers. A sign indicates Qoddy Head State Park. We stop. Dad parks the 4x4 at the entrance, and we go on foot. The lighthouse looks like a big child's toy, a large cone made up of alternating white and red rings stacked on top of each other. At the top, a dome contains a powerful light source; back when there weren't all the navigation systems yet, when people still sailed by sight, using maps and following the stars, it served to prevent boats from running aground on the coast. Attached to the building is a completely white house with a similarly red roof. Around it, the green meadow is well-maintained.

The sky is very blue with few clouds. Dad explains that we are at the easternmost point of the USA, which means that when it's sunny in the morning, we should see the sun before any other residents of the United States. The meadow is scattered with flowers, the ones that bloom in early



autumn. That little girl I see frolicking in the grass, it's me as a child. I rush, chasing a butterfly. Johanna keeps an eye on me; I must not wander off. Mom finally decided that we would have a picnic in the forest about two miles away, in Boot Head Preserve. She knows the place well; she has been hiking there several times before. We follow a marked trail to reach the water's edge. The forest extends to the rocks that plunge

steeply into the ocean. Some of them are covered in a kind of golden orange lichen.

Bing.com / create, prompts: the coast of Maine, a strip of land jutting out into the sea like a desolate moor, ending in jagged granite boulders jutting out into the ocean, some shrubbery, a small spring of water surrounded by small grasses and mosses, a small bay with a sailboat, aerial view, high details.

A little further on, there is access to a small cove lined with pebble beach, but it's said to be more beautiful up top, so we stay there. Dad spreads out a blanket and opens the basket prepared by the hotel in Bar Harbor. There are turkey and lobster sandwiches, blueberry and cranberry juice, napkins, and cups. Souvenir photos. We get back in the car, and now Mom is driving. Dad examines plans and photos on a tablet. On Road 191, which leads to Cutler, there's no one else but us; after two to three miles, Mom parks, and we continue on foot. The coastline is much less picturesque than before; a large flat expanse stretches out before us to the sea. There are practically no trees. We've arrived. Dad seems pleased, but I see surprise on Mom's and Johanna's faces. To the north, slightly below, there is an old farmstead consisting of a dilapidated dwelling and two even more dilapidated sheds. Next to them, there's a windmill with rusty blades. It's not abandoned because the house still has curtains on the windows, and some fields have been plowed; however, the place doesn't seem to be permanently inhabited, no one in sight, and no vehicles. We approach. The sheds are covered with dark gray wooden tiles that have a faded appearance, due to weathering;



they are closed with half-rusty heavy chains and padlocks. Through the gap in the doors of one of them, we catch a glimpse of a small tractor. In the stream meandering through the grass, the water is crystal clear. It sneaks between small rock blocks in some places. Dad says:

– Here, we are in the middle of nature, come on, now we're going to see the rest.

We head to the right. After a slight climb, we find ourselves on a sort of plateau. It's a kind of wasteland with low vegetation, just a few bushes and tufts of grass, a heath that ends with jagged rock spurs plunging into the ocean. Johanna explains to me that it was the last glaciation that flattened everything, creating this geological environment. Mom makes a remark:

– To be isolated, it's isolated !

– It depends on how you look at things. As we go down the coast, there's a marine reserve, and a few miles further, a US Navy facility. "Protected" would be a more appropriate term.

– But what about winter ?

– No worse to face than in neighboring Canada. The key is to be well prepared. You know, in recent years, extreme winter episodes have even hit New York. Among other possible regions, there's the border of Maine and New Hampshire towards the Appalachians; there, you can find lakeside properties in a mountainous setting. It's true that it would be closer and easier for the work, but, as I mentioned, much more expensive and with even more constraints than here. Two extremes, the sea and the mountains. There are luxury establishments in the mountains, in Switzerland, for example, and there are also some by the seaside. But this region is also a symbol. When the first children from Europe arrived on this coast, desperate to find their place in the old continent, they hoped to rebuild their lives, to start anew.

*For me, Joy, who is only six years old, all of this is grown-up talk.*

Instead of paying attention to it, I gather flowers for my herbarium with Johanna. They are small modest yellow flowers, graceful blue bells in clusters, cornflowers, wild lupines, small white perennials with four petals, and tiny pink and blue flowers that grow near rocks covered in lichens. Johanna knows the species well; she wants to become a biology teacher. She can help me write the names in my herbarium.

*I am Claire, continuing from before.*

Ray is advocating for his project; he continues to make his case, as they say in sales.

– The soil is very stable, the peninsula is a block of granite, etc...

The four of us walk toward the sea until we reach a slightly elevated spot. Perched on a rock sticking out of the water, a seagull watches us.

– The clinic will be built there, a little further back, sheltered from the spray and storms. Follow me.

Ray goes back a bit to a place where the ground is wetter. There are clumps of taller and greener grass mixed with moss-covered stones. It's the location of a tiny spring. The water that comes out of the ground wants to join the stream we crossed when we arrived, but it fails and gets lost all around. I help Joy pick small yellow flowers, sort of like buttercups. Ray pulls out his architect's book again to show me a view of the future foundation. The grand building presented is the color of the local granite, austere and impressive. Two wings attached to a central cylindrical pivot extend towards the ocean. It reminds me of an origami seagull about to take flight over the open sea. Ray waits for my reaction.

– It's beautiful, but what about the staff ? Where do you plan to accommodate them?

– Everything is already planned. On the edge of the foundation's land, right behind us, we will build a village, one more for the county. It will respect the traditional habitat of this part of the state, with wooden houses, a town hall, a school, and local shops. There will also be free shuttles to Portland and Boston.

Ray glances at his watch.

– We'll have to hurry if we want to make it back in time for the restaurant, but before that, I want to show you one more thing.

He takes us to the other end. There are two vacation homes on the edge of the ocean. On the shore, a small dock makes it easy to launch a canoe. I inquire.

– Are these houses on the same property ? No, it's not the same plot, but I worked out an arrangement with the owners. They're elderly people who hardly ever come here anymore. We could buy them from them.

– A vacation home for when we come here, why not ? Joy likes the idea; Michka could run around.

– So, if I understand correctly, the project is quite advanced ?

– For the peninsula and the clinic, yes. For the village, no; discussions with the county are still ongoing. Some people think it would be too close to Cutler, but we can discuss all these issues further when we get back. In case an establishment here is not possible, I would turn to a simpler solution, like Cape Cod, for example, where there's a large resort for sale.

*Immersion: I'm still Claire, on the way back to Bar Harbor, same day.*

Joy has fallen asleep in the back of the car, snuggled against Johanna. She hasn't let go of her treasure, the small basket containing the collected flowers and plants, refusing to put them in the cardboard notebook that Johanna prepared specifically; she wants to let them live a little longer, preserving their natural colors. Ray is driving. When he has an idea in mind, it's impossible to stop him. Of course, he had already thought of everything! I should have expected it. He never leaves anything to chance. To establish the clinic's plan, various feasibility studies were required beforehand—geological, environmental, climatic, architectural, not to mention purely administrative aspects.

Considering everything, Ray might be right about the site choice. Ecology, nature, what he says is true. Even in Theo's grandfather's time, wealthy Europeans were willing to pay a high price to walk barefoot on the lawn of a luxurious Swiss clinic, eating three lettuce leaves at each meal, for wellness treatments! Why wouldn't wealthy Americans appreciate this part of the coast? It's not far from Bar Harbor. My concerns lie more with recruiting staff. How do we persuade caregivers and researchers to come and settle here? To isolate themselves during part of the year in the Atlantic winter, with stormy days and waves crashing against the granite coast. But again, it's true, there's the example of neighboring New Brunswick, where they don't complain about life, quite the opposite. I would like to learn more about the project.

– Ray ?

– Yes.

– Do you already have an idea for managing the foundation, the clinic, and the research ?

– Perhaps you ? At least that's direct !

– Are you joking ?

– Of course, but if you were interested, it would be great. I couldn't find a better candidate than you.

– But I know nothing about administration !

– That's no longer a problem when you're at the top of the hierarchy. You just need to surround yourself with the right people. Most tasks can be automated, and as the representative of the foundation, I think you would be perfect. It's not about sacrificing your work, quite the opposite. This is where I hope to concentrate the best, the most cutting-edge research, the kind that scares humanity. So if you commit to the project, it would be both as a research director and as the clinic's director.

That's it. Always raising the bar higher! Ray will push me to reinvent myself once again. After years, I found a rhythm of life that suits me at Ydutech, and I quite like Boston. How can I give up all these achievements for a new adventure? But he also knows that if he insists, I will follow him. I love his way of looking at life, and I think I know what he wants to do. He's a pioneer, a sort of founding father, one of those men who make America strong. Perhaps Jill and Luc are already in the know and ready to commit, as they are obsessed with the integration of human intelligence and artificial intelligence.

– And do the foundation and the clinic already have a name?

– We'll have to discuss that again.

– Are Jill and Luc ready to come ?

– They don't know yet ; I suppose it will depend a lot on you.

– You're very committed to this project, aren't you ?

– You know it well. I promised to support Jill and Luc's project one day; it aligned with mine. I want them not to be disappointed. I offered them the opportunity to relocate their facilities here with the aim of taking it to the next level. If you commit as well, you'll have complete freedom in your research. You know the stakes, physicists dream of mastering gravity, achieving time travel. As for us, we dream of superintelligence, the kind that will solve everything and lead to eternal life.

– When is the opening planned ?

– I gave myself four years to succeed, the time it takes to build the clinic.

## appearances

### Consecration

*I am Joy, Underground, Ocean Dome, April 20, 2035, experiment time: 1 hour 23 minutes.*

Krawn is by my side, Aunt Jill continues to monitor the progress of the immersions in the adjacent room. Krawn:

– In the weeks following the picnic, Ray and Claire visited no less than ten other sites on the northeast coast, especially around Cape Cod.

– And finally, my father opted for the land north of Cutler.

– Yes, because the project was finally approved by the county. It was a time when the race for private care was beginning. All the major players in the tech industry had already announced their ambitions in this sector, and they were afraid of stepping on each other's toes. Ray posed a serious threat. When they learned through indiscretions that he was considering such an isolated location and the possibility of a complete relocation of Ydutech, they saw it as the perfect opportunity to trip up a competitor. Their lobbyists spared no effort in obtaining all the necessary permits.

*Immersion: I am Joy, my arrival at NewGreyHouse, Wednesday, August 24, 2022.*

Krawn:

– The Machine is entering a new phase where it will tap into your memories, first the natural ones without its assistance. Then it will supplement them as needed by stimulating the appropriate implants.

– Do you remember your arrival on the peninsula ?

– Asinika ?

– Yes, that's it. It was your mother who asked Ray to choose a few words in Algonquin. This one means rocky or stony. Later, we forgot that name and only referred to it as a peninsula, which is inaccurate since the foundation's land extends only a little into the sea.

– More specifically, remember that day when you arrived at NewGreyHouse for the first time.

*My natural memories resurface.*

I remember a Saturday... I'm ten years old. Today we went to Revlands Park, Aunt Jill, Uncle Luc, Justin, and me. Tonight, I'm staying at their place, as I've been doing for several days because Mom still needs to tidy up things at Greyhouse. I think she's creating more mess. For a few weeks now, there have been boxes everywhere, and even the curtains have been taken down. In the end, I will have stayed longer than planned at Aunt Jill's. Wednesday morning. Mom came to pick me up. Instead of taking me home, she heads towards the airport. From the plane, I recognize the coast... Just enough time to show Mom all the photos I took when I was at Aunt Jill's, and the pilot announces our descent. We land at the small Bar Harbor airport. Upon arrival, Papa's driver, Bill, is waiting for us. He takes the luggage, and we leave immediately. We drive, and I fall asleep. Mom wakes me up; we have arrived. I see a tall wall, an entrance with a security service. We're at the back of a very large building, almost unsettling with its dark color? Once inside, we drive a little further, and suddenly it's a surprise! I see it, the house, our house, at least the central part with its gray stone facade, windows, and that distinctive roof with dormer windows.

*Continuation of my natural memories.*

Bill parks near the stone plaque engraved with white letters like in Boston. I read NewGreyHouse. Papa is on the porch; I get out of the car, and Michka rushes towards me. He jumps on me and licks me abundantly. I hug my father, and we enter. On the ground floor, everything is just like in Boston, the hall, stairs, opening to the veranda, sofas, coffee tables, side stairs. We go up to my room, and I find all my belongings where they were before Mom packed them in boxes. The bed, my toy chest, the drawings pinned or stuck on the wall, my stuffed animals, Kogo the gorilla sitting on the carpet. On the dressing table, there's my hairbrush, Teddie my teddy bear, and Clodie my favorite doll, also the small makeup box, powder, and lipstick that I'm allowed to wear for special occasions. Papa stayed at the entrance of my room. He asks me to follow him. We go back downstairs. In the library, the philodendron almost reaches the ceiling just like before. In the kitchen, Dinah the tabby cat is settled as if she's been waiting for me. On the floor, there's her milk bowl, and on the table, I find my cereal box, the juicer, the cookbooks. My familiar world seems to have been transported all at once with a magic wand or on the flying carpet from a tale of Arabian Nights. The only significant change is in the veranda; it no longer overlooks the garden

but the ocean. Additionally, it extends along the kitchen on what used to be the back side of the house. From there, Papa shows me the very large building to the left, which we passed by earlier. This can't be real; I must be dreaming. I'm still at Aunt Jill's, and we'll soon wake up for breakfast. I join Mom in her room. She's packing the suitcases and explains to me. I'm not dreaming, and Michka is real too. We're going to live here, and that's why Papa had the Boston house rebuilt here the same. She will work in the large building across, a clinic. Mom isn't a doctor, but she will take care of people who are losing their minds, who have trouble remembering the past. I won't be alone because soon Justin will come with Uncle Luc and Aunt Jill. The second house, a little further along the shore, that's where they'll live when the renovation is finished. In a few weeks, I'll go back to school with Vera and Paula, as well as several children I already know.

*I come back to the present.*

Krawn continues:

– So far, so good. Now the Machine will help you remember even more. It will provide you with additional details.

The memory extraction activation light turns on. Through reminiscence of tiny details like a seashell found on the sand, the scent of the ocean, or the sun trying to break through the silver clouds, mnemonic traces are activated. My memory of the past is enriched. Alongside the construction of the peninsula and the village, I see how Ray initiated the construction of NewGreyHouse, the beautification and expansion work of the neighboring summer residence, which are the only two houses on the peninsula. Except for Uncle Luc and us, all the other employees of the Amipi clinic, which I learn is its name, live in Cipeia, the village behind the clinic.

Newgreyhouse is an exact replica, stone by stone, of the old Boston residence, a faithful copy of the house as Ray bought it in Boston before the expansions. Of course, the orientation is different. The Machine shows me the details of the almond green cast iron posts adorned with leaves and flowers that form the structure of the veranda. It is of Belle Époque style from Europe. The only small difference is that in Boston, they were the color of autumn leaves.

*Returning to my natural memory, the following days.*

I remember the days that followed. Despite reassuring comments from Mom, the first week had been a bit sad. In my room, I felt lonely. There were even moments when I sobbed, recalling my previous life, the fulfilled life of a little girl who received much love and happiness.

Fortunately, in early September, Justin's arrival changed everything. Since the beach house was still under construction, Aunt Jill settled in Cipeia. To reach her place, I had to pass through the only access available in the closed area of the peninsula, behind the clinic, where we had entered with the car



the first time. There was a gaping hole next to the door that seemed enormous to me. Down below, two tunnels were being built: one went under the clinic, and the other, facing it, provided access to an automatic underground shuttle heading towards the inland. It led to the village. It was so close that we could have walked, but it was prohibited. From the "ocean-Amipi" terminal to the Cipeia station, it wasn't even worth sitting down; once we arrived at the underground station, signboards indicated the future stops of Meetech and Cipawat.

Bing.com / create, prompt : a village in Maine built out of Lego bricks, town hall, high school, wide view.

Once back on the surface, one felt completely transported; from the modernism of Amipi, we entered the environment of a small village in Maine in the twentieth century. The escalator opened onto one side of the central square adorned with a water feature with ducks and swans, trees, and flower beds. All around were obviously new, clean, sparkling buildings: the town hall with several dependencies, the school, a dispensary, shops, and streets radiating from the center to the outskirts.

Some streets were still under construction. There were no advertisements. It was in one of the two fully developed streets that Aunt Jill lived, as well as Paula and Vera, my two schoolteachers. The residential units were side by side, relatively identical but differently colored. Cipeia irresistibly reminded me of a big Lego toy that I would have loved to build myself.



*More information comes to me from Nautilus.*

The architectural choice was not insignificant. For my father, the village had to be the embryo of an ideal city. The town hall with its white wooden facades and its bell tower adorned with a clock, the old-style shops, houses with wooden plank facades, dependencies, roof and dormer shapes, colors – all of it formed a human-scale habitat. To reassure, to inscribe the residents in continuity, to remind them of the time when each piece of wood was planned by hand, starting from a rough wooden board sawed by another hand from a tree felled by yet another hand, that of the lumberjack. As for the interiors of the houses, they were almost identical.

Despite the architectural choice, the most modern modular construction methods were used; thus, the roadways were made of pre-equipped links with all the utilities. It was the pinnacle of BuildTech, an ultramodern city disguised as a traditional small town. All the modules in Cipeia were designed to allow fully automated maintenance by specialized robots gardeners, cleaners, repairers. One of the requirements in the specifications was to minimize demeaning basic jobs.

The living environment was quickly acclaimed by the residents. The employees of Ydutech in Boston had learned that the houses were beautiful and comfortable, equipped with the best technology, with an internet speed as high as back there, and for those who feared isolation, there were fast and regular flights to the south at a negligible cost.

### **about Amipi.**

Krawn:

– Let's go back to your natural memories, if you don't mind. According to the Machine, the first years after moving to NewGreyHouse were a happy time for you, that's what you remember, right?

– Yes, I only have good memories.

– And what did you think of Amipi, the clinic ?

– To me, it looked like a big block of mysterious stone. From the outside, there were no openings on the smooth faces, except for the circular structure in the center made of glass, which Mom and Dad called the rotunda, where Mom had her office.

– The architect wanted a structure that embraced the ocean, with two

wings open at one hundred twenty degrees, surrounding the central cylinder. The colored glass used made the windows blend with the mineral cladding of the facades, giving it a granite-like appearance of the peninsula.

– Why the name Amipi ?

– It was your parents' choice. Initially, they had considered Janusa, a suggestion by Ray to signify that the project was a gateway between two worlds, that of death and eternal life. But Claire was the first to mention Amipi, as a tribute to the region's first inhabitants. In the Native American language, it means 'overflowing water' or something similar, like an abundance, also symbolizing constant rebirth, a nod to the modest spring at the beginning. Do you remember ? The day of the picnic !

– But that could have reminded Americans of a brutal past.

– Colonization, war, the massacre of Native Americans in the Northeast of North America, that's the past. Repentance, contrition, and constant mea culpa is not part of the North American mentality; people prefer to move forward. The important thing is that today the country would not act as badly.

– My mother told me about Acadia.

– A good history lesson that shows weakness leads to nothing. The first European settlers who established a lasting presence here came from France. They lived in relatively good harmony with the indigenous tribes. They were only interested in furs, which they exchanged in small trading posts for European goods. The coexistence was relatively peaceful since they didn't seek to claim the land. They didn't clear the forests to establish farms. In this wild and natural but cold paradise, the different communities initially respected each other; there were even intercommunity marriages.

– Only later did waves of other Europeans arrive, especially Anglo-Saxon settlers. The trading posts were not enough for them. They wanted the land they had been deprived of in their home countries, and that was understandably unacceptable to the indigenous populations. So, the invaders resorted to drastic measures: alcohol, disease, massacres, until they decimated or drove out the Indian tribes. The surviving natives fled into the hinterland, and the Acadian French were expelled further north to New France. There, significant Francophone communities were already established, in today's Quebec.

– You see, the history of humanity keeps repeating itself. Peoples have a responsibility to be attentive to what happens elsewhere. The weak who do not progress will inevitably find stronger ones who crush them, it's a law of nature.

– As for France's attitude, it was often incomprehensible, full of contempt and condescension. It simply abandoned its citizens, those who had the strength and courage to settle in Acadia while respecting the indigenous populations. Much later, after the Second World War, a French president even dared to ask the French-speaking part of Canada to secede! What ignorance of the past. The Canadians had already been very generous in helping France during the war. In fact, they owed nothing to France anymore.

– You're probably right ; we must forget the past and move forward, learn from history's lessons, and never let ourselves be overtaken. America understands that. I still appreciate my mother's choice though. But getting back to the spring, on the day of the picnic, it seemed tiny to me.

– Yes, but your father consulted a hydrologist. It was a symbol he cared about. After modeling the percolation phenomena in the soil, from the hinterland to the ocean, the engineer conducted surveys and discovered new underground streams. They were diverted ; now, they supply the jellyfish fountain.

### *The Jellyfish Fountain.*

The fountain is located on the ground floor, facing the ocean, in the entrance hall. It is a magnificent composition of water and glass situated in the interior corner, near the cylindrical axis of the building. The Italian interior architect who had already designed GreyHouse took care of its installation. Mineral glass made of silica was already considered an outdated material, but he managed to find the last artisans in Italy capable of working, molding, and shaping such a large structure. Amipi... The overflowing water flows from the top before gently cascading through a chaos of glass blocks onto the lower tiered basins. The water takes all kinds of paths, playing with frosted and transparent surfaces; it falls on the heads of jellyfish, flows along their frosted glass stems; skillfully responding to the water's slight and subtle movements are plays of light.

Light, water, and glass harmoniously interact in delicate successions of translucent shades, muted colors, and shades of gray, light blue, and green. Light plays with water, and water with light, evoking the series of life's gestures. It creates the illusion that the jellyfish sway gently, slowly, bringing the fountain to life, the life of six hundred million years ago. The basins are the primordial matrix of life. The musical accompaniment is very light, reassuring, relaxing, enchanting; it is a combination of ocean sounds and freshwater tones, raindrops dripping on foliage, mysterious water

descending from waterfalls or trickling down the cold and humid cave walls, hot water bubbling in thermal springs, protective placental water, water that bathes all life. The fountain is the symbol of Amipi. Some jellyfish can reverse their aging process to become simple polyps again, rejuvenation, eternal youth!



Bing .com, images, create, prompt : a fountain built with translucent Murano crystal jellyfish. Water flows from top to bottom. Pale blue and pink colors. High details.

*I am Joy, Ocean Dome, Nemo Project, April 20, 2035.*

Krawn:

– Do you remember the inauguration ? You were only ten years old; it was in the autumn of 2022.

– Yes, I was intimidated. I had to wear a dress that I found ridiculous; the kind of clothes the president's daughters wore at receptions at the White House. That's what Mom told me to reassure me. Justin made fun of me that day, according to him, I was playing Princess.

– You had reasons to feel uneasy. Many personalities had attended, and it felt like being at a reception in Washington. All the major players in MedTech, biotech, pharmacy, and medicine had made the trip, as well as presidential advisors, military personnel, members of the Senate, the House of Representatives, and the governor of the state. It was proof of the importance your father already had in both the economic and political landscape of America. The event was covered by all major media outlets, and an exception had to be made to Amipi's strict security rules. As a precaution, all research laboratories were closed, and the medical wing was isolated. Your

mother was surrounded by people. I imagine she herself dreaded this day, but she really pulled through. Until then, she had never been in the spotlight, unlike Ray; nobody knew her outside of research circles.

That day, everything changed. When the guests discovered the director of Amipi, she quickly became the center of attention at the reception. For her, it was a true consecration; her elegance and simplicity charmed everyone. At only thirty-seven years old, she was still stunning, the opposite of the public's image of a woman of science. Overnight, and against her will, she became a rising star, a public figure, the embodiment of Amipi. Her photo in a pleated purple dress and a bun next to the Jellyfish Fountain was broadcasted all over North America and the world, a real publicity coup for Ray, even though he didn't want it.

After that, Amipi's success followed, rapid and exceptional. Spectacular achievements were made by Claire in cases that the medical field considered hopeless, and word got out. The reputation of the institution continued to grow. There were so many wealthy and desperate people in the United States! While other places offered specific treatments here and there, Amipi offered the complete range of rejuvenation care, the most advanced solutions to slow down the natural aging process. Neither your father nor your mother had imagined that the foundation would generate such enthusiasm. Soon, and despite the exorbitant cost for the common people, the initial thirty-bed facility was overwhelmed. Entries had to be selected. Of course, the generous donors of the foundation enjoyed priority, as did the powerful ones in terms of wealth and political power. Just one year after its opening, the Amipi clinic had already welcomed, for observation, a former Secretary of Defense, a relative of an important Presidential advisor, several billionaires, and a former foreign head of state. Like Ydutech, the foundation found itself in an enviable financial situation, which allowed Ray to finance the expansion works of Underground, the Nemo Project, the Sustain Project, and the Machine.

## **south wing**

*Immersion: I am Claire, NewGreyHouse veranda, October 15, 2023.*

In front of me, Amipi stands out against a uniform gray cloudy sky. Seagulls glide over the ocean before suddenly diving into the water to catch a fish. On the top floor of the rotunda, I can make out the two offices where

I spend most of my time, the clinic's management and the research direction. Around two hundred people are spread across the three floors of the south wing and the ground floor: researchers, engineers, and technicians, interns and doctoral students. Ray sometimes joins me here. From there, he monitors the progress of the work, the construction of Ydutech's future facilities in the Cipawat district. So far, the timing has been respected, and it will most likely be in 2025 that Ydutech's transfer will start as planned. So, we still have two more years before we are permanently reunited. The experimental and clinical neuroscience department alone occupies the two upper floors and half of the first floor of the south wing. For the foundation's board of directors, the top priority is to fight against neurodegenerative diseases, with particular attention to Alzheimer's disease. In Boston, there are much larger institutions than ours, but here, with Ray, I managed to attract the cream of researchers. On the top floor, to the left, I have set up the 'molecules' research group, which I directly oversee, and which has contributed so much to Ydutech's success.

*I remember.*

Shortly after my arrival at Ydutech, I managed to develop a ligand molecule that is still one of the flagship drugs of the group today. The approach had been praised by the specialized press, seen as an achievement, an innovative approach, a decisive leap. We had managed to outdo the competing teams with the miracle drug that everyone was trying to develop. This product had the effect of permanently blocking the progression of Alzheimer's disease, a multi-target, multifunction weapon. Specifically, it was an enzyme inhibitor without undesirable side effects, preventing the formation of beta-amyloid protein aggregates. The development of senile amyloid plaques, which are highly toxic to neurons, was significantly slowed down. There were no observed side effects such as neuron degeneration or demyelination, which other molecules had caused until then. In addition, it had another effect, an action at the synaptic level, enhancing their exchanges.

The importance appeared so significant that the authorization for market release by the Food and Drug Administration was faster than usual. Immediately after the publication of the initial results, Ydutech successfully raised an additional hundred million dollars in funding. The logical next step was a significant increase in stock value even before the profits were realized. After that, everything fell into place. Ray had mentioned the acquisition of a startup specialized in early diagnosis, screening for risk genes. Since the

activity was directly related to my initial doctoral research, I also became interested in the development of this new venture.

*Back to the present.*

High in the sky, three V-shaped formations of geese are flying south. They come from neighboring Canada. Their destination could be New Jersey. Although I stay here all year round, I am satisfied with my new life. Being on the peninsula, I am close to the patients, and it is gratifying to see them on the path to recovery. Being on-site allows me to balance the responsibilities of leading the foundation with my laboratory activities. Life and luck! Ray, proactive, climbing to the top and projecting me into the future, my father Theo, who thinks he missed out on everything in his life, yet he is more intelligent than many people but unlucky. I observe Amipi. On the second floor, there is a laboratory that is dear to me, the gene therapy team; they are working on modifying the genome, correcting defective genes.

Currently, the researchers are experimenting with methods like 'crispr' on test subjects, molecular scissors that allow the addition or deletion of a gene. In fact, they are using improved scissors, safer than the initial ones, involving various viruses and bacteria. Still on the second floor, but at the other end, is the cell therapy laboratory. The technique is somewhat less ethically controversial, but it is still in the animal testing stage. The researchers perform grafts of differentiated stem cells into neurons. Mice that have been intentionally weakened by surgically removing limited areas of their brains regain their initial capabilities after the graft. However, many additional research studies are still needed before applying this method to humans. The reason? Among other things, the risk of cell proliferation. However, when stem cells were harvested from the same subject, the risk dropped, perhaps indicating a solution.

To complement chemical therapy and while waiting for the development of cell or gene therapies, several other complementary methods are being implemented at Amipi : gentle brain exercises, immersive situations involving sounds, smells, and images to evoke forgotten memories. Sometimes, this proves to be effective. These regeneration treatments are offered in the residents' wing. Hopefully, soon they can be complemented by physical stimulation, direct reactivation using intracerebral probes.

It is not entirely ready yet because the goal of incorporating brain implants is ambitious. It is still too early to propose it safely, but Luc is already looking towards that perspective. This type of research is precisely being

conducted on the first floor of the south wing. That's where Luc and Jill work. Ray kept his promise, conducting research in a very free manner, without the obligation of results. The U.S. military is also involved in the project. The issue of miniaturizing implants interests them.

In his implant positioning trials and the study of responses to stimuli, Luc uses brain matter constructed on a three-dimensional printer. Jill is in charge of the interface. And then there are other experiments being conducted on chimpanzees. As the techniques progress, attempts are being made to test them on actual animal brains.

*Immersion: I am me, Joy, I'm eleven years old, at Amipi, in the west wing.*

Alongside my parents, I am visiting the new facilities for the mental stimulation of primates, autumn 2023. Uncle Luc is providing an update in the control room. Luc :

– As you know, the research has made good progress. Very good results were obtained with laboratory rats, both regarding the brain implantation of the new generations of sensors that are smaller and less invasive, as well as the interfacing. The nature, precise positioning, acceptable level of stimulation, and recovery of electrical signals are now at a point where we can accurately monitor the brain activity of rodents. We have started to establish a precise functional map. It allows us to artificially induce behaviors by stimulating appropriate implanted sensors. We now know how to make a rat furious at the sight of a particular object or an odor it has never encountered in nature before. We also know how to cancel or even reverse this reaction.

Encouraged by these advancements, we have moved on to the next stage; we have been conducting trials on chimpanzees for the past six months, specifically on Charlie, Priscilla, and Harry. They have shown great promise, and that's why you are visiting today.

The wall screen has just turned on. We see a chimpanzee seated in a semi-reclined chair wearing an impressive helmet. Luc comments :

– The implantation room. I suppose you all know Chang, who assists us in the trials. As for the chimpanzee here, this is Charlie. You can see that he appears to be in excellent health after the hundred or so trials we have conducted in recent months. What you're seeing is not live footage but from



yesterday; Charlie was in the implantation phase at that time. The helmet is bulky because it contains the scanning equipment that allows us to directly monitor the movement of the implants. Do I need to mention that everything is done automatically? Our human movements wouldn't be precise or safe enough. This video sequence shows the step of positioning the brain implants. On Charlie's brain hologram, the area of interest has expanded. We can see the details of blood vessels and the path of the implants. There are dozens of them.

– What I'm showing you only has pedagogical interest. In practice, thousands of sensors are set up in this way to the point where you would have difficulty interpreting the placement trajectories on the hologram. Jill manages all of this from the neighboring room where the control and analysis computer equipment is located. The neighboring room has just appeared. We see Aunt Jill at the controls of a station full of screens and LED indicators. It's Nautilus, the pilot who controls the interface.

*Uncle Luc continues:*

– Of course, none of this would have been possible without the support of artificial intelligence, Jill's skills, and Ben's support. We had to conduct many experiments before understanding how the signals are transformed, routed, and interpreted in Charlie's brain. The AI guides the experiments and establishes the protocols. What you will see here as a test is not particularly important in terms of the number of implants but rather in terms of the technique. As early as 2019-2020, some teams had managed to implant a few thousand electrodes using surgical robots. The method was still invasive. Here, it is a new technology that uses soluble implants that dissolve in the body within a few days after the erasure phase is triggered. But instead of continuing my explanations here, I suggest we go downstairs where Charlie is waiting for us. The finishing of the premises has nothing to do with that of the floors anymore, polished concrete is the norm, gray in color, and the ceilings are low. We quickly arrive in the implantation room after greeting Aunt Jill in the adjacent room. The place is quite cramped. Charlie is seated in an identical chair to the first one, and Chang occupies it while waiting for the experiment to unfold. We greet each other. The helmet is much less impressive than the one in the implantation room, and Claire remarks on it, and Luc explains:

– This time, it's just about interfacing. Once the implants are in place, permanent brain scanning is no longer necessary. We will start without further delay because Charlie will get impatient.

Uncle Luc invites us to follow him. We head to a corner of the room out of the chimpanzee's field of vision. On a mini scanner like the one used by sculptors, he invites Ray to shape an object imagined with his fingers and choose its color. Ray complies and forms a sort of small red bone. The 3D printer creates it, and then we all return to Charlie ; Chang comments:



– Charlie hasn't seen the small bone. I am now transferring all the scanned data that characterizes it from the machine to the device that controls the implants. The program will prepare the signals for interfacing with Charlie's brain; this will take a few minutes.

Bing .com, images, create, prompt : in a science lab with many electronic devices, a chimpanzee sits on a semi-reclined chair. He wears a helmet with electrodes connected to a flashing computer interface. He is about eat a banana. He seems happy.

We wait patiently for the necessary time. It's done, the experiment finally begins: Chang connects the helmet. We can observe on the three-dimensional imager the activation of the areas of Charlie's brain involved in vision. The small bone is directly projected into his brain, in shape and color. Chang then offers a half-banana to Charlie, and a complex path lights up in the projection.

Chang :

- There you go, the two events are now linked.
- Just a half banana, why ? A little girl's question! I couldn't help but ask, and Chang smiles.
- You know, Joy, I take good care of him, but I have to make sure he doesn't get too full too quickly in case we have to repeat the experiment !

The interface is deactivated. Chang presents Charlie with a basket

containing all sorts of objects, including the red bone. The animal reaches out, rummages through the basket, and chooses it without hesitation. Chang rewards him with the rest of the fruit. Claire says:

– If I understood correctly, Charlie can now see a virtual shape without his own eyes. Once it is directly injected into his brain through the implants, he perceives it as something real. But what if it involved movements ?

– We're working on it; it's just a matter of complexity. We hope to soon immerse Charlie in an animated virtual universe. At the same time, we're learning to control his preferences, his feelings, his reactions, his personality. We already know how to condition him so that he likes, then dislikes, then likes again a banana or another fruit. And we've also managed to modify his attitude towards Priscilla, empathy, antipathy, empathy again.

– So, it's reversible ?

– Yes, but we're only at the beginning. We proceed with caution. Describing the complete personality of a chimpanzee is a lengthy operation that would require much more resources than what we currently have.

*Control room, continued.*

A question from Dad:

– All these results have already been achieved by other teams, but with less powerful, smaller, and less invasive implants. How many could we consider installing now?

– We hope for 100,000 to 1,000,000. With that many electrodes, we could hope to fully understand the personality of a chimpanzee. The difficulty will lie more in information processing. We would need more subjects and a computer entirely dedicated to the task, much more powerful. For now, we've only used a standard model used in universities for research in very different fields. We discussed this with Ben. Having a specialized computer would save us a lot of time. Ten years ago, it took several years to establish the human genome map; today we could do it in a month. Regarding thoughts, it's a similar issue. Analyzing everything involved in a particular thought and breaking it down into its necessary parts requires subjecting our guinea pig to numerous solicitations, imaginary life scenarios of sorts that cover the full range of emotions and feelings. In each situation, we need to understand how an emotional reaction is anchored and store the corresponding mnemonic traces so that we can reactivate the correct circuits later with the

help of implants.

– But you will continue to improve the sensors, I imagine?

– Of course. Here in the basement, we only install them. The essential work on this subject is still carried out in the old laboratory. We continue to explore other avenues with research on artificial brain matter. The goal is to ensure increasingly precise positioning and maintenance, and to make the nano implants easier to remove. Soon, we should be able to track the activity of groups of a few hundred neurons. From a healthcare perspective, it means that, in the long run, after thoroughly understanding how certain areas of the brain function, we could selectively stimulate them and attempt to restore lost functionalities.

*I am Joy, I'm twenty-three years old, Underground, Project Nemo, Ocean Dome, April 20, 2035.*

Krawn resumes his comments:

It was from that moment that the work of your uncle Luc and your aunt Jill became a priority for Ray. After the visit, he understood that one of the doors to immortality was now opening. The other one was already engaged, namely the research on means to rejuvenate the body, particularly its organs. The two could complement each other. Cryogenics, on the other hand, was outdated, with too many obstacles, too many uncertainties. Faced with the urgent demand of wealthy and influential individuals, it was necessary to continue, at least superficially, the sarcophagus project. Too many other companies or foundations were already proposing this solution in the USA, and it would not have been understood if this aspect was missing from the wide range of solutions offered by the foundation. However, Ray didn't believe in it. He was convinced that Luc and Jill's research needed to be boosted. What was looming extrapolated from their work was the possibility of one day filling a virgin organism with a preserved personality.

The methods for synthesizing new organs were progressing rapidly, and it was likely that in a few decades, a body could be created from scratch. Then it would simply be a matter of recharging it with the preserved personality in the bank, and in a way, the person would be resurrected. Of course, there was a serious question mark in all of this. Would reactivating switches in an artificial brain be enough to reactivate consciousness, to revive thought? Some believed so, if it was a true DNA support. But another more immediate condition was to be able to eventually conduct experiments on humans,

experiments that couldn't be openly acknowledged! Underground was the solution, of course! It would be enough to expand the complex where Ben was already working; there, the secret would be well kept. Under the pretext of expanding the IT department, a new research center would be installed. It was a crazy gamble. However, like many other billionaires of science in the contemporary generation, Ray was an idealist. Money didn't matter to him; it was merely a means to promote humanity.

When success came and with it the wealth that in the West opened all doors, Ray didn't succumb to the excesses of the planet's other wealthy individuals. He didn't make the sterile choice of some European billionaires who played the role of patrons, accumulating works like the Medici in Florence in their time. He also didn't believe that the West was irrevocably condemned. He firmly believed in his country, in its values, and was therefore willing to put all possible means into Project Nemo. And even if the expected results were not used solely for the purpose of immortality, they could be used to interface the human brain with inert quantum intelligences, a dizzying prospect.

– What happened then ?

– In practice, your parents reached an agreement. Project Nemo would not appear in the foundation's research organization chart. The funding would come from Ydutech in the form of equipment loans; Luc would continue to be responsible for the facade by overseeing the implant research laboratory located in the research wing of Amipi. At the same time, he would take charge of Project Nemo with a great deal of autonomy. Your aunt Jill, on the other hand, would be responsible for everything related to AI at the foundation and would therefore work even more closely with Ben.

– So, Ben was in on it from the beginning ?

– Yes, from the very beginning. As early as 2023, the new organization was put in place. The tunneling machines went back to work. Once the underground premises were ready, under the pretext of modernizing the laboratories, an additional endowment from the foundation allowed for the equipment of the new Underground laboratory. Under these circumstances, no one obviously raised any objections.

## **where I grew up**

the ideal city

*Ocean Dome, April 20, 2035, the second day of the time journey, experiment time: 1 hour 27 minutes.*

I am Joy, and I am talking to Krawn about my arrival in Ydunea. Krawn:

– And your life here in Ydunéa, Joy, what can you tell the Machine about it ?

– After arriving in the summer of 2022?

– Yes.

– There was school. In the morning, Justin and I would walk to the ocean



terminus of the shuttle, located in the basement of Amipi. There was a large mosaic there, in the Greco-Roman antique style, representing a Nordic goddess of youth near an apple tree. She held in her hand the marvelous fruits that guaranteed eternal youth. When we got off the Levita shuttle at the Cipeia stop, we were just a stone's throw away from school.

– At first, there were only a few of you with Paula, right ?

entrance to the Amipi clinic, mosaic representing the Norse goddess Ydun, symbol of eternal youth / Bing .com, images, create, prompt : a very young and beautiful goddess near an apple tree, eternal youth, mosaic style, high details.

– Yes, there were only a few children of the clinic's employees. It wasn't until 2025 that Ydutech employees started moving in.

– From home, what memories do you have ?

– Parties, birthdays, receptions at NewGreyHouse with people who must have been very important. You could tell by their faces and their clothes, but also by how my father and mother received them. I would just come to say hello, and all these people pretended to be interested in me. Other times, on such occasions, I would go to sleep at Aunt Jill's.

– And what about the rest ?

– I have memories of visiting the construction site of the grand tunnel with my father in 2023. It was at the beginning of the extension works of the Amipi-Cipeia Ocean section. A giant machine would build and assemble the sections modularly. It was powered by wheeled tankers that brought the necessary material, a composite material made of concrete and carbon fibers.

What fascinated me was that it seemed to work all by itself. Two miles further inland, on the surface, other machines were excavating, devouring the flowers, the meadow, the soil, and the rock. We were at the location of the future laboratories and production units. Where buildings had already emerged from the ground, or rather their above-ground parts, other machines took over, restoring the ground, planting trees and tree masses. They recreated the local landscape by reintroducing native species from Maine. My father always told me not to distort nature and that Earth was a treasure, and we must take great care of our Blue Planet. That day, he also told me that he would be coming back for good soon. He would be at home every morning and evening again, except when he was traveling.

– You know, Joy, at first, his project was limited to the foundation.

– Then why Ydunea, why relocate Ydutech ?

– You probably just gave an explanation, he wanted to be closer to your mother and you. What also played a role was the positive feedback from the first arrivals, the three hundred pioneers, including the families who had agreed to come and work for the foundation. They declared themselves satisfied very quickly, and very few of them wished to leave. The danger with too small human groups is that you are in contact too often with the same people. A socialized human group should not be too small or too large to live in harmony. The arrival of Ydutech would solve this issue. The sale of the historic Boston site financed most of the work on the new Cipawat complex.

– By the way, I suddenly thought of Hillary. What happened to her?

– She had always followed Ray, but this time it was too much ! Times had changed. Intelligent software was starting to make all administrative tasks previously carried out by humans unnecessary, including accounting, which had been reduced to almost nothing. There were solutions for logistics, marketing, decision support, and generally for all activities outside specialized production and research. She, who had always played the role of conductor, suddenly felt useless, overwhelmed. When she saw what Ray presented to her as the new headquarters of Ydutech, it was a shock for her. It was ridiculously small compared to the prestigious and proud building in Boston, just a pavilion among others, adopting the geometric shape of a virus capsid. Ydutech no longer needed to show off its success. The rule of simplicity gradually crept into the minds of the residents of Ydunea. Hillary couldn't bear to become a mere silhouette next to a vase of flowers, and she gave up after a long discussion with Ray.

– Do you know what she became ?

– She no longer works and lives in Boston. Ray regularly checks up on her. He suspects that she wants to write her memoirs, but there's nothing embarrassing or obscure about Ydutech's history, I assure you right away. The only thing that could bother your father is that he doesn't like to be in the spotlight.

The Machine continues to probe my thoughts through Krawn.

– Tell me a little about Meetech now.

– Well, it was our wonderful universe, the refuge for all the young people of Ydunéa regardless of their age, education through play, the discovery of the world. At first, the other young people called us the founding children, Justin, me, and a few children who arrived when the foundation opened. Because we were there from the very beginning, they were wary of us; I was the first, the 'first'; moreover, I lived in the forbidden zone. When Meetech opened, fortunately, everything changed. Even the teenagers who used to regularly go back to Boston or Portland changed their minds. They no longer felt isolated. Meetech was, in a way, a dream factory. I was thirteen when the grand hall opened to the public, it was in 2025. I still remember my first visit with Paula, Vera, and the whole class. Inge welcomed us and introduced us to the vast complex. She explained that part of the education would now take place here, in the many rooms that revolved around the central agora.

They were all equipped with state-of-the-art technology, holographic platforms, augmented and mixed reality equipment, ultra-powerful computer terminals connected to the main computer. You just had to unlock access with your personal sensory key to automatically access all the features. Plus, the places were beautiful and comfortable. The knowledge rooms made you want to learn, alone at your own pace as well as in groups. The learning modules often took the form of games. It was possible to immerse yourself in historical scenes or visit the most fascinating places on Earth, giant crystal mines in Mexico, stone forests in China, abyssal depths, pyramids and tombs of Egypt, prehistoric caves adorned in the southwest of Europe, Altamira, Lascaux, and Chauvet, Vatican, Machu Picchu, great museums of the world, the grand mosque of Samarkand, the tomb of Christ, what was left of the reserves of African fauna. You could walk on the Moon, Mars, or even Titan. In some rooms, there were situation simulations, role-playing games, and strategy games; in others, you could design objects just by thinking. There was even a room where you learned to live with artificial intelligence.



Everywhere and always, we had access to the large Educastream database that delivered educational content. Moreover, since Ydunéa was already fully connected, we could follow all the activities of the city, especially those of the experimental farms that were supposed to make us self-sufficient in terms of food. Fitness, meeting, and dining spaces located in the second outer ring completed the whole; we could have lived there permanently! The young people started spending more and more time at Meetch, it became their forum; everyone found something for themselves.

Other questions, Krawn:

– Let's move on to the environment now.

– As you know, of course, there were more gray days than sunny ones, but nature was omnipresent. From Cipawat to Asinika, passing through Cipeia, with all the green spaces, we felt like we were living in a large greenhouse. The two urban production farms also contributed to strengthening the connection with the natural environment; we felt in constant contact with nature.

– It all sounds like an ideal society. Were there any criticisms?

– Yes, one about the internal information network, some talked about conditioning.

– An unfounded fear ! On the internal network, all the media in the world were broadcasted. What was misunderstood was the way information was disseminated. Access to certain articles or media had to be voluntary, sometimes with moderation notices. Do you remember your grandfather Theo's little notes? One of them advocated the "cupboard" principle. No information or advertisement should be imposed. Contents were displayed like notes pinned or stuck or magnetized on a board, accompanied by warnings, an appeal to cross-check information from other sources, to verify the credentials of the authors, which had to be indicated. You were too young at the time to be interested in those big US media that had succeeded the print versions. The mindset of Western journalists had not changed until the eve of the great catastrophe. They persisted in their mania of wanting to make sensationalism at all costs, of giving opinions on all subjects. The information from mainstream media on the internet or other channels had disastrous effects on society.

## **the best education**

*I'm Joy, and I'm still talking with Krawn, Underground, Project Nemo, April 20, 2035.*

Krawn:

– Before taking a break, I just wanted to talk about one last topic, your educational journey at Ydunea. What can you tell me about it?

– Vera would occasionally ask me questions to make sure I was comfortable in the new system. Looking back, I think she cared about both form and substance. Overall, no, I don't have any bad memories.

– She oversaw education at Ydunea. One of the essential principles was to focus on involvement and curiosity. For that, everyone had to understand the importance of various areas of learning, what they could bring to their lives as children, teenagers, and later as adults, and how they could help shape their personalities. The pedagogical approach was open, encouraging personal discovery, initiative, and autonomy while avoiding the trap of ease or laziness. Another pedagogical principle was that all subjects were addressed from an early age. Knowledge was then deepened year after year. Everything that could interest the future adult and contribute to their development started being taught from childhood, including aspects related to social behavior and relationships with others. Adolescence received particular attention. Everyone was warned about the specific risks associated with this age, the particular and sometimes heightened sensitivity linked to the still incomplete development of certain brain areas, and the excess of emotional involvement in reactions, which carried associated risks such as addictions. You haven't forgotten Ydunea's educational motto.

– Of course, 'to know and learn to know oneself.' To know: to know the past of our world, universe, solar system, blue planet, DNA life. Also, to know the past of humanity, what men had done since the earliest known times, the progress of their knowledge. No young person could be exempt from acquiring in-depth knowledge in true sciences. The Western habit of dividing those gifted in humanities from those gifted in sciences was over. It was understood that it made no sense to exclude young people from learning sciences under the pretext of their inability in mathematical activities. Artificial intelligence had come in the meantime to compensate for deficits in logical thinking or abstraction. By knowing the basic principle of fractals, one could use and understand the geometry of certain natural structures,

without needing to be a programming genius. The programmers, in any case, were now almost all robots.

With the incredibly powerful multimedia resources available at the Meetech Hall, everyone could access all the knowledge of humanity, degree by degree. Inge and her colleagues had implemented the most intelligent and sophisticated search engines. As soon as a search was launched, suggestions were made to the user to continually enrich their knowledge on the subject, awaken curiosity, and expand their knowledge. Learning to know oneself: learning to behave with wisdom and harmony, understanding human motivations, the nature of relationships with others, the origin and significance of socialization, what empathy and distrust are, friendship and enmity, exaggerated, immoderate, dangerous forms of love and hate, the transition from useful and useless to good and bad, and finally to right and wrong. Understanding how one's own consciousness decides what is right or wrong. Learning moderation and temperance, respect for the environment in all its living and non-living components. Learning to have faith in humans and their ability to develop in harmony. The essential subject of intelligence and consciousness was extensively documented in the continuity of the evolution of living organisms. How the capacity to imagine had developed, how human intelligence had become more complex, what meaning humans attributed to the words intelligence and consciousness. The risks associated with equating the imagined with the real were also explained. Once the way in which thoughts are constructed was understood, everyone had to learn to be wary and careful not to give them more importance than they truly had.

– I can see that you indeed embraced the pedagogical approach. And what about the other young people around you?

– They did as well. In addition to all these innovations, there was only one unified training program, so there was no discrimination. Disciplines that were once considered essential, such as literature or philosophy, were now only addressed in satellite modules and in the form of discussions. As for sports, it no longer had the absurd importance that the West had attributed to it. It was reduced to simple physical development, integrated into health.

– Well, I think it's time for you to rest. You only have the last part of the journey left to complete.

~



## **METAMORPHOSIS**

### APOCALYPSE

#### **chrysalide**

American dream

*I am Joy, I am twenty-three years old, Underground, Ocean Dome, Nemo project, April 20, 2035, experiment time: 1 hour 28 minutes.*

We're going back in time. Uncle Luc still hasn't returned, and I'm talking to Krawn. Krawn:

– You can guess that we're now going to talk about the great catastrophe ?

– Of course.

– To fully understand everything that happened, we need to go back to the years 2025 to 2035, the ones that preceded the collapse of the West. During this period, American society began to undergo profound changes. The media highlighted the cities of science and technology, kind of archipelagos that brought together all kinds of technology islands that were often initially integrated into standard urban fabric. They included laboratories and small production units, as those of Silicon Valley on the West Coast in the early 2000s. The model was replicated in several places on the Atlantic coast as well as the Pacific coast. Due to lack of control, real estate prices kept skyrocketing, and soon only those who were well-paid in SciTech could afford to live there. Others had to leave. These kinds of cradles of the future world were then formed. People there were more intelligent, and they started living differently from the rest of North America. Everything was automated, no more animal meat was consumed, and marriage was no longer practiced. Reproduction contracts were signed before any sexual relationship intended for procreation; sex and the characteristics of the future child were genetically programmed. Having pets was increasingly frowned upon. Birds in cages, zoos, horse racing, all of that was considered cruelty; animals had to be returned to the wild, even if, in some cases, like that of dairy cows, it meant condemning them in the long run. It was understood that the Western obsession with surrounding oneself with pets was just an admission of weakness, of despair. In practice, robots had become a good

substitute for those who suffered too much from loneliness.

*Thoughts of Theo, excerpts from little pieces of paper written in Pointe Rouge.*

The instinct of empathy drives humans to share with others. When it becomes impossible with humans, then we turn to animals. We project our own thoughts onto a living being of lesser intelligence and consciousness, with no risk of contradiction. Even simpler, we choose an inanimate object, a childhood regression, a security blanket for a young child who, in the absence of their mother, no longer knows with whom to share their emotions, adopted dolls by some Japanese adults during the terminal West. Others had already opted for android robots. In Black Africa, souls were projected onto masks. In certain religions, objects were used to better channel the religious sentiment, to better persuade oneself that one was communicating with a higher power. Spiritualists used minerals for the same purpose. All these habits originated from the instinct of empathy developed and passed down throughout evolution. The duality of empathy-cooperation-help and antipathy-competition-rivalry. It had always been the case in living societies, from cells to social insects, later within animal packs, and within human societies. Ultimately, it was a way to push away the real problem, to deny a reality that society claimed to make people forget, the individual's solitude.

Krawn continues:

– Another characteristic of these science archipelagos was the abundance of Think Tanks often dedicated to the search for a new spirituality.

– Was all this a seed of social division?

– Let's say it was a new difference. Just as there were African American neighborhoods, Latino neighborhoods, now there were neighborhoods of intelligence. They weren't closed since theoretically, every American could enter, but you know how people react. Just as an average citizen wouldn't even think of entering a high-end jewelry store, they wouldn't feel at home in these new neighborhoods. American citizens outside the SciTech cradles understood that they had nothing to do in these new neighborhoods. To be a newcomer, you had to come from the best universities. It was a particular lifestyle and a natural tendency to reproduce within the same environment, supported by genetic selection.

– And was the quality of life really better there than elsewhere in the United States ?

– That depends on how you see things. You were guaranteed to have a job, a beautiful, automated house.

– But overall, in North America, everyday life had become easier with the advent of robots. At least that's what they explained to the people, right?

– Yes. The USA and Asia set the example, and gradually the whole world followed with varying levels of technology. The industrial production of robots had become the new source of growth for capitalism from 2025 to 2035. The old fear of entrusting sometimes vital responsibilities to non-human entities had disappeared. It had been established for a long time that autopilot in airplanes was safer than human pilots, but humans were still put in cockpits. It was really with autonomous cars that trust took hold in people's minds, and Americans began to trust robots. Other sectors had also made remarkable technological leaps, such as surgery. Statistics proved that there were far fewer errors with robotic scalpels than with a surgeon's hand, fewer severed blood vessels.

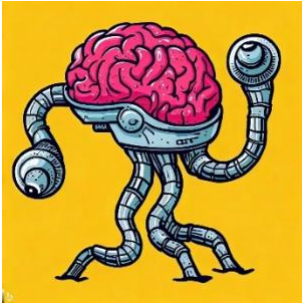
The domestic robot capable of performing most household tasks became a commercial success and the norm in every household. A sculptor could now create a work of art with just a few gestures or using a brainwave helmet. A 3D printer could instantly bring the imagined artwork to life. Gradually, all American households equipped themselves. It can be considered that we had truly entered the age of robots. Another remark: the fear of a new pandemic, following the sad experience of 2020, had encouraged widespread robotization. In the cradles, of course, there were even more machines than elsewhere, domestic robots, robots dedicated to all tasks, specialized in both the private and professional domains, up to android robots as friends.

– Not surprising since they had been designed in those cities !

– Of course. But all of this had dramatic consequences on the work of Americans. In the early years, it was observed that the design of new intelligent machines had created some value-added human jobs, partially offsetting the lost jobs. But from 2030 to 2032, a clear turnaround occurred with the mass production of multifunctional android robots capable of most menial tasks. The American people quickly understood the situation. For capitalism, still in effect, the advent of robots was a blessing. They were obedient and not yet endowed with free will, even if the manufacturers did not always admit it; some could have exceeded what was asked of them daily. Restrained, their intelligent hearts could be unleashed the day humans were sufficiently conditioned to accept this evolution. Average Americans were concerned about this underlying trend that was erasing numerous

professions one by one.

In a sector like the automotive industry, Mr. Brown had initially been replaced by a robot on the assembly line. Not qualified enough to build the machines that took his job, he initially resigned himself to serving coffee in a large beverage distribution chain. But charming android waitresses had come to replace him as well. The states and the federation had initially acted with banks to limit the damage and prevent a collapse in real estate. Mr. Brown had managed to temporarily keep his house by renegotiating the mortgage with the bank, but his hopes of financing his son's higher education were



over. Elsewhere, Mr. Jackson had lost his job. He worked in logistics. For over twenty years, he had been involved in supply and inventory management or orders. Sales and delivery had been completely automated. Mr. Jackson also had to sell his house. Once the mortgage was paid off, he bought a used mobile home parked in one of the increasingly numerous neighborhoods built around cities, what would later be called the "low cities." Water, gas, electricity, access to the internet, basic education, and healthcare were all free, funded by the state.

Bingcom / create, prompt: in the style of Daniel Clowes, a brain with 2 robotic tentacles and legs.

The large production companies had then transformed into fortresses where no humans entered anymore. The age of human industry with its cohorts of workers was forgotten; machines alone manufactured most consumer goods in remotely controlled production units. Repair robots maintained the machines, replacing even the smallest faulty parts. Moreover, some companies specialized in the construction and delivery of turnkey units, guaranteed to be one hundred percent devoid of any workers, technicians, or engineers, capable of producing whatever was desired.

The ultimate step was taken in 2032 with the introduction of operational systems for robot designers on the market, an artificial intelligence capable of setting up all the steps of building a robot dedicated to a specific task. The human operator eventually only had to define tasks and give commands: "Build me an underwater robot capable of retrieving metal nodules from the ocean floor," or "Create a laboratory robot that can synthesize a molecule to



treat a specific disease!" In summary, those who had announced that the loss of manual jobs would be compensated by the creation of more qualified jobs were heavily mistaken. It was clearly not enough. Once again, the middle classes paid a high price, both in North America and on the old European continent. Now, with the new situation and the massive use of robots, the form of slavery through money established by capitalism in the 19th and 20th centuries was no longer necessary. The liber-capitalism no longer had anything to fear from the middle classes; they had been crushed.



Dall\_E prompt : a city of the future with flying taxis, robots, artificial intelligence, hand drawn and watercolor.

– What were the prospects for those populating the low cities ?

– They could always apply to join the security forces. They were still recruiting; otherwise, they could try to pursue further studies, but the training centers in the low cities were often underperforming. The best teachers were recruited from private universities, where only a highly talented child could hope to receive a scholarship. It must be noted that any ancient king would have envied the standard of living of most Americans. However, there was bitterness among them, a sense of decline, rejection, humiliation, much like the way humans feel towards highly intelligent extraterrestrials in science fiction films. Elsewhere in the world, politicians had sometimes resorted to another trick to stay in power. They had implemented a universal income. It did not prevent society from functioning. It was also a belated and implicit recognition that Western society was nearing its end with most parasites and useless professions. To all these lesser or lazy minds, the right to be born, procreate, eat, move around was granted, but within certain limits, to live in idleness without disturbing the rich. All the state asked of them was to vote correctly. But many felt their dignity was compromised. Working to feed one's family had always been the rule in human societies.

– So, is the American dream over ?

– Except for certain CEO of SciTech, those who exploited disruptive innovations, kind of science captains, new Nemo captains of the third millennium. They became increasingly influential and even indispensable,

gaining confidence and exerting a considerable influence on political decisions. The structures they led sometimes acted like new mini states, providing their personnel with the best services in education or healthcare. Sometimes, one felt more like a citizen of one of these groups than an American citizen.

– And what about the states in all of this ?

– They still existed thanks to the military or even diplomacy for the federal government, the police, justice, and the management of the low cities for the various states, the very last justifications ! Moreover, the high administration had always been infiltrated by powerful networks of influence that ensured the future of the federation and not just their own interests. This was still the case. Those who wanted to reduce them to mere lobbyists were gravely mistaken. They were devoted to the



greatness of America.

– Are you thinking about fraternities ?

Bing.com / create, prompt : US fraternities, secret societies, illuminati.

– Yes, but not the ones that were common in most American universities, which were merely student network embryos without national ambition. Their main concern was to support each other within a small group, a pack mentality at university, and later mutual support in the professional world. It was similar to the concerns of adults already in the professional world who joined the Rotary or Lions Club. No, I want to talk about those few fraternities from the most prestigious universities that have long been established in America, like their elder German counterparts. They had a different ambition, which was to influence power, if possible, to hold it. The high administration was infiltrated by their members recruited through a highly questionable selection process. The first condition was, of course, to have successfully integrated into the most prestigious educational institutions in America. Then the prospective "brothers" were approached among close associates, student acquaintances. The initiation was not too harsh, requiring the disclosure of everything about oneself and one's family so that the new member could never betray the cause and its secrets. There was a bit of theatricality, with skulls and bones if necessary to impress, and the recitation

of a vague universalist message promising to work for the good of humanity, and that was it. They had joined a fraternity for life.

– Was it similar to Freemasonry or the Order of the Rosy Cross ?

– The connection was evident. The oldest mother fraternities in the West were formed through a similar process, driven by a shared desire to change the world, to improve society peacefully, the opposite of what happened in the French Revolution of 1789. They all suffered from the same flaw, the highly questionable selection process for the brothers. The issue of elites had always been central: new elites had to be found to advise the existing ones (princes and priests). The Rosicrucians, in particular, had initially sought recruits from the pool of scholars (mostly alchemists and theologians) and sovereigns. It seemed relevant for those who claimed to want to reform sciences, arts, and religions. Later on, they expanded their recruitment.

– Were they truly influential on the eve of the cataclysm ?

– Yes, but apart from a few conspiracy theorists, the fact that some presidents, secretaries of state, or directors of major security agencies belonged or still belong to these networks did not shock Americans much. After all, on average, they had all worked for the greatness of America.

– And what about the Nemo captains you mentioned, were they part of these groups ?

– Themselves, rarely. Scientific fields were much less concerned with fraternities. They were like free electrons, uncontrollable and increasingly powerful. However, if I were to summarize all this, I would say that the American state was still powerful and respected on the eve of the apocalypse.

## **cursed truths**

*Krawn continues his description of North American society before the tragedy:*

– Around the 2030s, several major Western taboos began to be challenged, starting with the concept of work. Until that time, work had been considered necessary for human dignity. It had certainly played a role in the history of humanity, but now, what did it mean to "earn one's daily bread" when robots started producing everything humans needed? Soon, through mere thought, people would obtain what they desired. However, there was one condition: humanity had to stop reproducing recklessly. The resources exploitable by machines were not infinite. Another taboo that faltered was

that of demography. "Stop human infestation!" In the year 2033, just thirteen years after Théo's death, clouds were gathering. The blue planet now had nearly nine billion people, two billion more than in the previous twenty years, mainly due to the reckless and irresponsible explosion of the black subcontinent. This part of the world was still not contributing anything notable to the progress of all of humanity. Then, words began to be freely spoken through fiery exchanges on the super web. Many internet users recalled the undeniable law of life: the self-destruction of a species through overpopulation, excessive promiscuity, and associated pandemic risks. The idea of a necessary reduction in the size of humanity gradually imprinted itself in the collective unconscious. The appearance and selection of more and more gifted and brilliant individuals, resulting from an ever-accelerating reproduction, had become unnecessary and too costly. It threatened the future of the entire blue planet. Humanity could just as well advance in knowledge with a reduced number of individuals.



Dall-E prompt : overpopulation, environmental destruction, war, sexuality, hand drawn and watercolor.

- But wasn't that contrary to the values of revealed religions ?
- Yes, but eventually, humanity had to face the facts. The advice given by certain major religions to proliferate without limits was nonsensical. By clinging to this position, they discredited themselves.
- Cursed truths ?
- Yes, but they were spreading. In think tanks, many called for a new "enlightenment," a reevaluation of all the values on which the West had been built. For example, did property still hold any meaning when humans no longer had to work? What about capitalism? Why should there be more and more people when numbers no longer served a purpose? There was no longer a need for thousands of men to build cathedrals or pyramids! What about politicians? The leaders of the new scitech empires seemed more capable of bringing happiness; they at least had a vision for the future. They offered immortality or the conquest of the stars, and it seemed plausible. Their motivation seemed spiritual, and it was precisely this aspect that was

lacking in the declining West.

- Destroying the golden calf of values, but what to replace it with ?

- That remained a subject of discussion. It didn't necessarily mean that the West was inevitably going to disappear. In Western societies, people no longer had to worry about daily survival, food, clothing, housing, or the need to work. They had become increasingly powerful and knowledgeable. If they had been reasonable, they could have abandoned consumerism and prioritized the common good over individual promotion. Then, perhaps, the West would have had a chance to avoid collapse. But that's not what happened. It couldn't react anymore, entangled in its contradictions. It was paradoxical because if the West had surpassed others throughout its history, it was thanks to its ability to criticize, to analyze everything in detail before deciding. When the West dared to reject old beliefs, it made a leap forward, leaving everyone else behind. With one exception: in their implementation of detailed analytical approaches, Western scientists had to divide the understanding of the world. Initially, they accepted the belief in two essences, one material and one spiritual, the only way to free themselves from the yoke of old beliefs.

But let's talk about think tanks now if you don't mind. Ideas had progressed, not only in Ydunea but throughout North America. So, in 2034, a mysterious "community of strings" proposed a set of precepts to guide humanity and establish a new moral foundation. It was probably the product of reflections by a network of individuals working in the cradle of science, all imbued with a transhumanist vision. Their ideas aligned with those developed in Ydunea within Y\_betterworld, but that's not surprising because there was a natural convergence among all the actors in SciTech. The community of strings recommended that humanity take its destiny into its own hands, with full and complete responsibility, without resorting to artificial constructs such as imaginary gods. According to them, the destiny of humankind was to extend the course of evolution, to accompany it in such a way that the human species progresses in intelligence and consciousness. It was upon this transcendent principle that the new values and morality were to be built.

~



## **manifesto of the String Community**

Those of us who have joined the cause believe the following: We have reached a point in evolution where humans must actively contribute to the future evolution of the human species. Using our knowledge and skills is no different from the humblest organism's attempt, with its limited means, to survive and evolve. The organism may succeed or fail in its attempts, and likewise, not all transformations attempted by humans will be successful. But those who refuse to attempt anything are obscurantists who refuse to see what nature urges them to undertake. Thus, those who unconditionally condemn eugenics behave no differently than the ancient priests who opposed the dissection of the human body (considered God's work) or surgical operations. We are eager to improve the species primarily in terms of intelligence and consciousness.

We are aware that we are no longer alone, isolated as the scholars of past centuries were. While we do not seek to impose our point of view on all of humanity, we assert the right to implement what we believe in. No political or religious power should be able to counter this freedom that we consider fundamental. The members of the String Community do not aspire to dominate the world. Like various churches, they only aim to unite a community of thought.

Consciousness is a part of nature. It cannot be separated from the rest. As such, it should be explored like any other phenomenon. This should be the great work of the species. We reject the artificial separation between a tangible world that humans are allowed to explore, and a spiritual world considered inaccessible to humans. The grand spiritual movements conceived by humans thus far have failed, and we acknowledge this. While present-day humans may not yet be capable of explaining conscious transformations, we are convinced that an improved human species will succeed in this regard.

It is time for the West to replace faith in God with faith in humanity, in life. Transhumanism is naturally destined to become the new humanism. Alongside efforts to improve the human species, we believe it is essential to protect all forms of life on our blue planet, to prevent their extinction, and to allow these other experiences to continue. One essential condition is to limit the human population. Another is to change the mode of selecting the elites who currently hold power over different human groups. Princes, priests, and politicians have not brought happiness to

humanity.

We also affirm that happiness is possible on Earth. Most physical sufferings, fears, and anxieties can be abolished. With a limited number of humans and the knowledge available in the early third millennium, it is entirely possible to achieve bliss and envision that everyone's capacities or functionalities can be satisfied with reason, moderation, harmony, and wisdom.

## thoughts of the Strings

### the Genesis

Our world is part of the cycle of universes. It sprouted from chaos, which was itself engendered by fluctuations in the primordial bath, the All  $T^*$ , the Matrix of All Things—one, formless, static, homogeneous, isotropic, self-contained, devoid of dimensions, time, or even consciousness in the sense this word holds for humans, without Good or Evil. Then, to dissipate the tremendous concentration of energy that had just been created and return to the original harmony, there was the Bang, the zero instant, a new universe.



Bing.com / create, prompt : shell and fern fractals.

### the Great Return

Right after the Bang, numerous dimensions appeared, including four defining human spacetime. The Matrix of All Things had none. The new universe, encompassed within the Matrix, began creating a wide variety of dimensions. Multiple separate, individualized objects emerged: elementary particles, atoms, molecules, crystals, galaxies, all within a dynamic of expansion aimed at diluting the new universe back into the All, erasing this disturbance.

### the Order of Things

The cycle of universes functions like a great automaton without a creating God or a grand clockmaker. Each chaos gives birth to a new universe, which immediately transforms itself to dissolve back into  $T^*$ . The dynamic of returning to equilibrium involves turbulence, significant imbalances associated with all the transformations of nature observed by humans. Symmetry, invariances, and conservation laws govern them from the infinitely small to the infinitely large, in a similar fashion.

### life and consciousness

In our universe, everything vibrates, everything is conscious, although to widely

varying degrees, depending on whether it's an inert crystal, a macromolecule of life, or a human being. The quantity of vibrating elements, their variety, and their coupling possibilities determine the level of consciousness. At first, consciousness was merely a byproduct of evolution, with chance and natural selection alone determining the future of species. Only later did consciousness become a factor of evolution itself.

### **Good and Evil**



One cannot exist without the other, with Good being the absence of perceiving Evil. Good is associated with balance, while Evil is associated with imbalance. The stronger the imbalance, the greater the suffering. The human brain is not a mere computer but rather a controller of Evil, aimed at increasing the chances of survival and development. Wisdom lies in the right balance between Good and Evil. Learning to control them is the key to happiness. Suffering is not inevitable. Happiness is possible on Earth, contrary to the messages of revealed religions. For that, humans must act, even though every action is associated with Evil.

Bing.com / create / prompt : a picture of future human life after they learn to transfer their consciousness in a cyborg.

### **transhumanism**

One must believe in humans, believe in life, forget about Hell and damnation, assert that happiness is possible on the blue planet with fewer humans, giving a chance to other species that are more intelligent and more aware. We must strive for the pursuit of the only true Grail: knowledge. Each and every one of us must work towards this goal and, in doing so, forget the separation between philosophy, science, and spirituality, learn to question past spiritualities, and reject the arbitrary separation between two worlds labeled as tangible and spiritual, for Nature is one. Culture should not be oriented toward the past but toward the future.

### **opacity**

Yellow Peril

*I am Joy, day two of the journey, experience time: 1 hour 32 minutes.  
Immersion: end of March 2033, White House.*

President Warren Koln is meeting with his longtime advisor and friend



Thomas Brewser. It's seven in the morning, ghost mode, and I am witnessing their conversation. Morning tranquility... The President of the USA is comfortably seated on the second floor, in his private office in the Treaty Room. Thomas Brewser is one of the very few foreigners in the family who has access to the private quarters. It's worth mentioning that he is a long-time friend. Through the window, the President can see the white monolith standing out on the still dark lawn at the end of the grand perspective. Artificial light helps highlight it in the faint morning clarity. In the foreground, the bare and flat area where the helicopter lands is also indirectly illuminated, as well as the circular basin that extends it, surrounded by a ring of yellow tulips. A few blooming cherry trees enliven the greenery of the tall trees on either side, framing the green carpet of grass. The large magnolia flowers can also be glimpsed. A mist hangs above the flower beds, coloring the park during the day. On the desk, two documents are placed side by side. Thomas Brewser enters. Loyal among the loyal, he has been one of the main supporters of the Republican candidate. As a reward, he was appointed the first advisor.

- Good morning, Mr. President.
- Good morning, but please, Thomas, no formalities when we're alone.
- As you wish, Warren.

Thomas sits opposite. Warren Koln shows him the two reports stamped with the raised seals of the main agencies responsible for domestic and foreign security.

- You've read these reports, of course ?
- Yes, I've carefully examined them. In fact, they were in the stack of priority documents passed on by your predecessor. The sensitive nature of the subject may explain why Felipe Lobosa kept them on hold for some time. When he received them in September 2032, we were already in the midst of the November presidential election. The Republican camp could have exploited these documents to criticize the Democratic administration's record. So, the President chose to bide his time. After the elections, however, he made sure these reports were transmitted without delay.

- In any case, the secret has been well kept.
- Yes, no leaks in the press. It's a good sign for our democracy.
- Indeed. Let's now focus on the content of the first report concerning China, what do you think?

– The analysis reveals the increasing opacity of research conducted in several centers. It does pose a problem, although there could be multiple explanations.

– You don't believe in the disruptive innovation hypothesis ?

– I don't dismiss it. With the acceleration of research and the enormous resources that China now devotes to it, it could be plausible.

– But a major technological breakthrough is usually preceded by a new theory that is the subject of publications. That's how the scientific community operates, isn't it? International recognition as the main reward for researchers? However, according to our scientific advisors, no theory with major implications has emerged in recent years. Science is still struggling with anti-gravity, antimatter, and cancelation of electromagnetic fields.

– Precisely, the report addresses this issue. The publication of researchers' findings remained the norm until around 2025, ensuring scientific transparency. Chinese researchers have so far presented their work to the international scientific community using both Western scientific journals and their own. Only in recent years has a very noticeable change occurred, with less interesting publications, especially in the life sciences. In this sector, it would be quite easy to hide a major result because the associated infrastructure is not as massive as in space or thermonuclear fusion. No need for a Manhattan Project. When the first gene-editing scissors appeared in the 2010s, if they had remained secret for a few years, the holder of the technology could have gained a considerable advantage, developed frightening biological weapons and their antidotes, all in easily concealable facilities. The only condition would be to restrict access.

– Our analysts have identified certain research facilities receiving sophisticated and expensive equipment. Their researchers now only publish trivial works. You don't use a sledgehammer to kill a fly. In China, as you know, planning is the rule, no wastefulness! It's difficult to attribute these purchases to a whimsical research director.

– And what about scientific conferences, international symposiums, and international relations among researchers ?

– It's the same situation. Those from the laboratories or research centers involved rarely attend gatherings in the fields of genetic engineering, neuroscience, or artificial intelligence. It's a clear sign of research closing in on itself. Most of the time, they decline invitations for exchanges or collaborations. As you and I have read, around twenty sites are said to be involved, spread across the entire Chinese territory. Some are newly

established and located in remote places, often prohibited areas near military bases. There is an apparent activity and a hidden one. I agree with the experts who co-signed this report; we need to find out what's going on.

– What do you propose?

– Strengthening the surveillance of these sites, trying to find out who accesses them, who lives there, perhaps through their families if they are not on-site. Based on material flows, actual energy consumption, and the movement of individuals, we should be able to identify the research subjects. All of this cannot be achieved through communication surveillance alone. We'll need to find a local relay, but it will be difficult because both the Chinese and the Russians mostly adhere to their own models, which are increasingly divergent from the Western one. Multiple technological successes and the mishandling of the COVID-19 pandemic in 2020 have restored China's confidence and the prestige of their former empire. To accomplish all this, we'll need to convince Congress to vote for new funding without revealing the specifics, but it's crucial for the country's security.

– A media preparation ?

– It could be a good idea if it doesn't appear to be driven by us. It could be done by disseminating articles highlighting China's tremendous progress and suggesting the threat of being surpassed. We would emphasize the increasing investment in certain research areas such as artificial intelligence, from twenty billion dollars in 2020 to seventy billion in 2025 and then one hundred and twenty billion in 2030.

– It needs to be done subtly, so it doesn't come across as a provocation. We shouldn't give arguments to those who claim that an armed conflict with China will be inevitable someday.

– I agree with you. I suggest reviewing the surveillance system and, if necessary, reallocating resources until new funds are approved. The obsession your predecessors had with Russia or Iran was exaggerated; maybe we should reconsider our strategy in that regard. In hindsight, allowing China to quickly acquire expertise in microbiology was just as dangerous for us as allowing Iran access to nuclear weapons.

– You know that it's not us directly involved in this matter, but rather France. In any case, your proposal seems reasonable to me. You should organize a summit meeting with the other advisors and officials from the relevant security agencies. Don't forget to tell them to come up with concrete proposals to improve the surveillance system in the Asia-Pacific region; that way, we won't waste time. Warren glances at his watch

- We still have some time to discuss the second report.

### **a state within a state**

*Continuation.*

Thomas:

– Regarding the second report, in my opinion, the subject is not at all comparable in seriousness. If any criticism is to be made of American companies conducting cutting-edge research, it's due to the policy pursued by your predecessor. The Democratic Party always wanted more social policies, more redistribution to secure the votes of Blacks and Latinos. To finance this policy, they cut research funding allocated to major agencies, just like they had done twenty years earlier in the space domain. By reducing the military budget, they knew perfectly well that they would compromise certain highly classified advanced research projects. These projects should have been conducted in purely military structures with defense's own budgets to develop electromagnetic cannons, computer decoys, exoskeletons, and combat drones. To compensate, they entrusted a significant portion of them to the private sector, and now civil society is alarmed that we're entrusting complete arms production chains to private interests.

They denounce the opacity of the research, question the ethics, and raise concerns about the control of the major conglomerates that have benefited from the contracts. Environmental associations, spiritual sects, survivalists, Freemasons, pastors, and priests, everyone is jumping on it, all the organizations threatened by the emerging scientific world. A motley assembly of obscurantists wants to warn the American people against the actions of sorcerer's apprentices posing as researchers. According to them, certain private laboratories already possess weapons of mass destruction, bacteria, and viruses capable of eradicating all life within minutes. The major pandemic of 2020 also left its mark. You've seen, like me, that cartoon broadcasted in the media to make an impact on public opinion: a humanoid robot scarecrow spewing viruses and bacteria, with an atomic mushroom as a hat, and the escaping gray matter made up of quantum intelligence modules. Conspiracy theories are multiplying. According to them, the population of the United States is victim to mad scientists responsible for the development of low cities where the least gifted Americans are confined.

- What do you suggest ?
- To prevent the controversy from escalating further. We could light counter-fires, for now, pretend to play along, resume inspections at least in appearance, and increase the resources of the research inspection corps. We could also assign some personnel from the military.
- And in the long run ?
- I must admit it's quite complex ! Inspections face all sorts of regulations. We could try to increase the accreditation level of experts, but the companies benefiting from research contracts will invoke confidentiality clauses for ongoing contracts. That would only be feasible for new contracts.
- Once again, you need to prepare something. Public opinion expects a response. As for the growing influence of big technology companies, do you think we should be alarmed?
- No, you know very well that history has shown us that scientists, engineers, technicians, doctors, biologists have never been able to organize themselves into any credible force. As for the few wealthy individuals who control the scitech conglomerates, they already benefit enough from the system. Why would they want to overthrow it? If they want to govern, all they need to do is invest a few billion dollars in an election campaign. Warren Koln looks at his watch again and pretends to get up.
- Official obligations...
- Of course, but don't worry, I'll closely follow these two cases.

## **polygons**

Detonation

*Underground, Ocean Dome, Nemo Project, experimental time: 1 hour 34 minutes.*

Krawn is concerned about me:

- Everything alright, Joy ?
- No problem!
- Your physiological factors are normal, even quite good, as are the cerebral indicators, receptivity, recovery capacity, plasticity. On our side, we can continue. Now that the Machine has reminded you of the events preceding the apocalypse, we will delve into the heart of the matter. On your

part, you witnessed the events from Ydunea. But you know, the conflict wasn't experienced in the same way by the powerful of this world, the military confined to their polygons, pentagons, hexagons, and the political leaders and billionaires taking refuge in survival arks, compared to most of the population abandoned to their own devices. Quintessence will strive to make you feel both perspectives.

*Immersion: deep-diving mode, I am Thomas, the second basement of the White House, Strategic Intelligence Office, Wednesday, November 22, 2034, three o'clock in the morning.*

A call on my secure terminal. It's Donald Reck, close to the president and the 'Director of National Intelligence,' same promotion as me at West Point.

– Thomas ?

– Yes.

– Can we talk ?

– In complete confidentiality. As soon as I received your signal, I joined the intelligence office. You're at the Pentagon from what I see?

– No, at Force Two.

– An exercise ? He doesn't respond right away. On the screen, I notice that he looks worn out, as if he hasn't slept for days. There have been several exercises before, but never at night.

I have already visited the Force Two complex twice with Warren. It has been operational for several years as a twin structure to the Pentagon. Deeply buried in the mountains about a hundred miles west of Washington, the base is designed to be an impregnable fortress in case of a major conflict. If an event were to threaten the very survival of the federation, then the structure would be able to withstand any attack, whether nuclear or biological. The government could continue to function there safely. This inter-service command post is an exact replica of the Pentagon's, a mirror site where the supreme headquarters consisting of the highest-ranking members of the Joint Chiefs of Staff can coordinate military operations worldwide and in space, including those of all branches: US Army, US Navy, US Air Force, US Marine Corps, US Space Corps, as well as the National Guard and the Public Health Service. Force Two also houses, in a complementary manner, the supervision and direction of the US Intelligence Community (IC), which coordinates intelligence activities related to national security. Once

communicated to Force Two, all data is processed, analyzed, cross-referenced until a synthesis is produced, enabling the most appropriate decisions to be made.

Force Two is also the ultimate refuge for the president and his close associates, advisors, and ministers. Private facilities have been set up for them and their families. An exact replica of the Oval Office can create the illusion that Warren Koln is still in Washington in case he needs to address the nation. Over the years, the site has expanded. The power of its nuclear generator has been used to create an underground city capable of housing an entire community, and the survival ark could accommodate several thousand people in the event of a major crisis, enabling them to live in total self-sufficiency for years if an apocalyptic scenario were to unfold. All the progress made in colonizing the planets of the solar system has been used. Donald only needs to go to the computer center hidden in the mountains in case of absolute necessity. Donald continues:

– Thomas, listen to me carefully, this is not an exercise. You urgently need to inform Warren. He alone and no one else should be aware of this at the moment.

– But what's happening ?

– Epeira has reached alert level eight. Epeira is the watcher. This name refers to both the hardware structure and the software, which is a multi-core quantum supercomputer dedicated to artificial intelligence. Its role is to monitor, predict, and warn. It draws from the massive stock of security data stored in the Force Two cloud, the data from the Echelon program, those from intelligence agencies, as well as others extracted from what transits through the super web. Epeira detects and discerns anything out of the ordinary, intelligently searching like a highly gifted police inspector. The program can even counter a simple disinformation campaign and generates syntheses. Everything is taken into consideration, from the simple movements of satellites reported by the Space Corps to the private travels of high-ranking officials from the Middle Empire or Russia. The predictive network incorporates their psychological profiles and analyzes even their personal lives within the main program. Specialized algorithms can predict human behavior based on a few reactions from daily life and some experienced situations. A progressively more accurate portrait of the subject's psychological state emerges through successive extrapolations, much like in image analysis where a initially blurry portrait becomes more

recognizable with each iteration. Factual indicators and predictable reactions of the world's leaders are then considered within specialized protocols that generate a situational synthesis. The most probable scenario is accompanied by an indication of severity on a scale from one to ten. Epeira has never reached level eight since the watcher became operational, except in simulations, of course. Donald continues his explanations :

- Two days ago, the sophisticated surveillance satellites that usually target the bases built in the Mongolian desert and south of Tibet became blind. No frequencies respond anymore, and no signals are returned. They are blank areas both in the visible spectrum and in the infrared that can penetrate through clouds. As for the hyper frequencies, the situation is the same. We've tried everything, but it seems like the signals are mysteriously absorbed.

- Maybe it's just jamming ? They might have succeeded in nullifying wave beams, as we already know can be done with sound waves ?

- That's possible, but there's something else. As soon as we received this information, we decided to send some space debris as projectiles that are likely not to burn up upon reentry into the atmosphere, with the idea of apologizing later for our clumsiness.

- And then ?

- As they approached the target, they suddenly disappeared as if they had completely vanished.

- Are you thinking of a shield ?

- We don't know, but the dissipated energy is consistent with an immensely powerful force field.

- Is that what triggered Epeira's level eight alert

- That, and other troubling elements: abnormal movements of high-ranking officials and their families, significant stockpiling of food supplies in certain barracks, with packaging designed for long durations, canned goods, dehydrated food, frozen products, rice, oil. The same goes for the arrival of fuels and other strategic products. Analysis result: a three-year food autonomy for at least five to ten thousand people depending on the sites involved.

- Finally, last night, the surveillance of Chinese satellite activities revealed a very high density of signals. It corresponds to repositioning maneuvers of their spacecraft, both civilian and military, especially those intended to guide ballistic missiles.

- Which countries are targeted ?



– All those in the Western world, Russia, India, generally those with nuclear capabilities. You may recall that in the case of strategic exercises announced in advance by China, the USA had been the only virtual target until now.

– And what about the CIA, do they have their own program, what does it say?

– Are you referring to GDWE, the global database of war events ? Of course, it also analyzes in detail the risks of disorder on the planet. It has raised the stakes on the probability of a major conflict with China.

– And for what reasons ?

– While Xi Jinping, the predecessor of the current President of the People's Republic of China and also the General Secretary of the Communist Party, was well known for his nationalist positions, his successor Zhen Li initially appeared to be more conciliatory. There was less warlike rhetoric, and a status quo seemed to have been established between them and us. In fact, once again, we were mistaken. We found one of his old speeches delivered at one of the main Chinese military academies: he was an avid student of history, and in that speech, he explained that the Western model was based on outdated values that were mere variations of Christianity, including the primacy of the individual over the group and an exaggerated sense of sharing. According to him, if the USA had succeeded, it was precisely because of their brutality. The West had behaved very hypocritically, which proved that the Chinese leaders were right. Furthermore, he pointed out the stupidity of America, which failed to seize the historic opportunity to dominate the world with nuclear weapons immediately after the Second World War. He claimed in the speech that even a limited nuclear conflict would have definitively established American leadership over the entire planet.

At that time, we didn't pay much attention to these words because Zhen Li didn't seem capable of attaining supreme power. Moreover, when he succeeded Xi Jinping, he initially made reassuring, conciliatory, and pacifist statements. To put us at ease, he mostly emphasized the advantages of the Chinese economic model, namely a regulated and planned capitalism. No waste, no resources squandered in non-priority sectors, a unified rule throughout the country without all those local regulations specific to federations, the administrative simplicity of a system entirely controlled by the Communist Party. However, none of this seemed particularly alarming. Since GDWE brought back the text of the conference given at the military academy, we had to face the truth. In fact, the leaders of Greater China are still on the same path, to restore its former glory and dominate the planet.

We know well what happens with authoritarian regimes, the risk of totalitarianism, the temptation of war to further establish their domination.

– I imagine Epeira takes GDWE into account, and vice versa ?

– Yes, it is one source among others, but there is something else, suspicious movements of individuals. I just received an update. According to



Epeira, the families of high-ranking personnel stationed in Western embassies, as well as those from Russia, are preparing to return to Chinese territory. Examination of airline tickets reveals highly complex itineraries, but the destination is always a military airport in China. Various reasons are given, such as job transfers and family reunions. Second-tier personnel are preparing to replace them, and they come without their

families.

– Perhaps a purge after Zhen Li's arrival ?

– The personnel involved have very diverse backgrounds.

Force Two, Bing.com / create, lprompt: in times of war, senior officers' staff in an operations room, in the center a hologram planisphere and transparent screens on which the trajectories of ballistic missiles are displayed in color.

*Immersion: I am still Thomas.*

New syntheses are arriving, derived from the analysis of vehicle flows, transported individuals, phone conversations, railway movements, and various other data. They all conclude that there is a population shift consistent with an imminent and large-scale catastrophe. I question Donald:

– An earthquake, a tsunami, an ecological disaster ?

– Not apparent. Our specialized services have not announced anything like that. The movements concern the entire territory. They are taking place calmly, and not all layers of the population are affected. It's hard to believe it's a catastrophe, unless the leaders, in view of the gravity of the danger and to avoid widespread panic, have decided to save only the most useful personnel, engineers, doctors, technicians.

– Do you think I should wake up the President ?

– Yes, undoubtedly.

– And what about the Pentagon ?

– It's already done. Under the guise of an exercise, the key officials are already here at Force Two. Other personnel remaining in Washington will ensure that activities appear normal from the outside.

*Immersion: I am Thomas, same day, 4 a.m.*

I just woke up Warren and tried to explain the situation to him as best as I could. He is skeptical.

– Thomas, I find it hard to believe that China has decided to attack us. We are more powerful than them ; we could reduce them to ashes in a matter of hours at most.

– That's also the majority opinion at the Pentagon, or rather at Force Two. Until now, the advisors and senior military officials have always considered our super surveillance system, Epeira, as a mere decision support tool, a secondary asset. So, it will be very difficult to convince them to take the warning seriously.

– And what do you two, along with Donald, think about it?

– We think it would be better to evacuate, you, your family, and key advisors. We must consider the fact that China, like us, has superintelligences, artificial brains capable of advising leaders. The goal is to achieve quality of life, technological progress, social cohesion, economic leadership, security, and peace, in other words, objectives that meet a certain ethical standard. However, these brains, built in the image of humans, could one day decide to achieve good through evil, to trigger a preemptive war. For example, if a predictive analysis announces the development of a new biological weapon in the United States, mastery of gravitation, or a successful human-machine hybridization, such an advisory intelligence could panic! Furthermore, faced with the ecological catastrophe caused by overpopulation, one could also imagine that it would coldly advise reducing humanity through genocide, a sacrifice presented as necessary for its survival. This choice would obviously and equally imply the death of most of the Chinese population, but in the long run, it would be for the good of the survivors. In fact, it would be the Chinese leaders who would decide, without the real consciousness of the AI machine. If they are now in the same state of mind as Zhen Li, then there is cause for serious concern.

– The equivalent of Epeira advising to go to war against the West, a handful of men determining the fate of humanity ?

– Yes.

– So the ideal would be to be able to access their supercomputers, these equivalents of Epeira, but of course, I imagine that's impossible with quantum encryption ?

– That's true. It's more at the human level that we could find a flaw.

– How ?

– In the entourage of the highest officials, there could be leaks, some clumsiness to exploit. As soon as they become aware of the conclusions and advice of their intelligent machines, they will inevitably discuss it among themselves. We would need to be able to eavesdrop on the conversations of the highest-ranking members of the Chinese party and military, including in private settings.

– Are we capable of doing that ?

– I know someone who could help us.

– Explain.

– We need to go back a few years. The US Navy had one of the world's best decryption specialists on its team at that time. With budget cuts, he preferred to go back to the private sector.

– Was he that interested in money ?

– Quite the opposite. However, he could no longer obtain the necessary funding to implement his research.

– Can you tell me more ?

– His name is Ben, and he works at Ydutech.

– Ah yes, Ray Miller and his ideal city of Ydunea on the East Coast, an eccentric one, immortality, transhumanism !

– Definitely eccentric, but he achieves very good results with his foundation. A former Secretary of Defense is being treated at the clinic the foundation opened, as well as other influential people in the country. They are not charlatans, I assure you. They have remarkable research facilities.

– But what on earth did your Ben go there for ?

– The founder of Ydutech and he are childhood friends. Ben has always dreamed of a better world, and the project appealed to him. He also has family in Boston and Maine, near Portland, I believe. And from what I understand, Ydutech is conducting research that could profoundly change our future. One of their teams is working with army laboratories on the development of brain implants. In Ydunéa, Ben manages all the computing, and he has one of the most powerful AI machines in the world. Some even think it may have surpassed the singularity point.

- Would it construct itself autonomously ?
- That's probably an exaggeration, but knowing Ben, why not ? At the very least, we could ask for its opinion, it wouldn't commit us to anything.
- And you're surprised that the population is concerned about what's happening in these science cities ! You're explaining to me that what was still science fiction a few years ago is becoming a reality.
- There's no need to worry. They are not a cult, and they have close relationships with the navy, beyond what I've already told you about neuroscience. In fact, it's the navy that provided them with the nuclear cores that power Ydunea.
- Nuclear cores, but I'm just discovering this!
- We shouldn't worry; they themselves don't have access to the facilities. Thanks to this arrangement, Ydunea is partially dependent on us.
- Well, after all, it doesn't commit me to anything. Contact him, and I'll meet with him.
- Understood, I'll take care of it.

*Immersion: I am Thomas, it's 6:00 p.m., the President is alone with me.*

- Thomas, I called Zhen Li.
- And then?
- He admitted that military exercises are taking place. He seemed sincere and surprised by the importance I seemed to give to the current situation. He also vaguely mentioned a crackdown on the administration combined with a large-scale military exercise. It would only be meant to intimidate the reactionaries once again. We agreed to call each other to monitor the situation together. As for Ben, what did you find out ?
- A connection between Epeira and Ydunea's supercomputer is scheduled.
- How long will it take before we have results ?
- Ben mentioned at least ten hours. Their machine is much more demanding than Epeira when it comes to cross-referencing information.

*I am Joy, Ghost mode, White House, 11 PM, second basement.*

Everything is ready for evacuation to Force Two, a discreet departure through a tunnel that leads one mile away from the White House, but before that, Warren wants to meet Ben. He doesn't have to wait long, the aircraft that went to fetch him is already approaching; the beacons are lit up on the

lawn. Thomas and Warren are in the control room, inside what has become the bunker for strategic operations. The crisis cell is in place, and Force Two is live. All screens are displaying repeated information, especially Epeira's screen. Communication has been established with the staff of senior officers, analysts, and strategists. The information is starting to pile up, marked with flags of various colors, green for 'not concerning', orange for 'to be closely monitored', and red for 'top priority'. On the global screens, many points are lighting up.

– We have a big problem !

The officer in charge of synthesis just raised the alarm. He is using his laser pen to indicate sensitive points. With each point, detailed information appears. Ocean screen: many points are illuminated in red, evidence of unexpected activity reported by Poseidon, the submersible tracking system. Based on multiple information provided by ocean beacons, it reports that numerous submarines are in motion. Unusually, both the Atlantic and Pacific oceans are affected. On the second screen, the DSP defense support program (the program that supervises, among other things, the SES, satellite early warning system, monitoring the activity of all reconnaissance satellites placed in geostationary orbit around the Earth and responsible for detecting the possible launch of ballistic missiles; in the event of a confirmed threat, SES should activate the American shields) shows a significant increase in communication density among Chinese satellites of the same kind, both between satellites and between satellites and ground stations. The third screen indicates the situation on land. The officer zooms in on China, region by region. Once again, there is unusual activity observed at Chinese military bases equipped with intercontinental ballistic missiles (ICBMs). Donald is on the line. Warren Koln questions him.

– Donald, could all this be part of the exercises mentioned by Zhen Li ?

– It's possible, but we believe that the armed forces should be put on maximum alert, Mr. President. We are eagerly awaiting your arrival here.

– That will be done soon. Before that, I will try to reach President Zhen Li once again. We should make sure they don't misunderstand our intentions either. I will tell him that this is a counter-exercise comparable to theirs and nothing more. It's a good opportunity to demonstrate our power.

Thomas signals to Warren that Ben has just arrived. They go to an adjacent small office that is completely isolated and conducive to informal discussions.

– Good Morning, Ben.

– My respects, Mr. President.

– I'll get straight to the point. Time is running out. Disturbing information has just been transmitted to me, and I must contact President Zhen Li without delay. But before that, I would like to hear your opinion on the situation. Thomas believes that you could provide additional insights.

– Thank you, Mr. President. We have carefully analyzed the data from Epeira, particularly regarding the movements of Chinese citizens. In addition to the information provided by the CIA, local sources have also provided additional details on the profiles of the displaced individuals. It's interesting: they are indeed neither workers nor average civil servants; they are engineers, technicians, doctors, nurses, researchers, and military personnel. All these people are heading towards designated "opaque" areas. One site is particularly concerned, in a region of Tibet adjacent to the Gobi Desert. For a few years now, we have suspected that a very important base could be hidden in the mountain foothills. It could be some kind of survival ark. Another area of concern is closer to Beijing, to the north, in Inner Mongolia, east of the desert. There is every reason to believe that these potential refuges are very well equipped. For example, considerable amounts of computer equipment have been transported there, including processor production units. They clearly also house genetic banks and life sciences research facilities.

– Do we know how many men and women could take shelter there in the event of a major catastrophe ?

– It's quite astonishing ! It appears that in the past two years, the capacity has multiplied by a factor of about five. The first base could indeed accommodate fifty thousand people, and the second one twenty thousand, much more than what previous estimates suggested. It seems huge when compared to the capacity of our own underground arks. The migration is ongoing. The balance of arrivals and departures for the two affected regions is heavily skewed. It is highly likely that the afore mentioned arks are already two-thirds populated. Of course, this is nothing compared to the Chinese population, but it far exceeds the thresholds usually considered necessary for the colonization of a planet to have a chance of success.

– Could the human species survive there in the event of an apocalypse ?

– Very likely.

– So, the explanation for the family movements during the four declared public holidays for the death of the vice president, a national hero, would be purely fictional ?

– Absolutely. Furthermore, no natural catastrophe is predicted; all specialized agencies agree on this point.

– And what about the conversations that high-ranking officials might have had in private ?

– They only reinforce suspicions of an impending large-scale action.

– In conclusion ?

– Our quantum superintelligence, Quintessence, concludes that there is preparation for a global conflict.

– Is it a mere exercise or the preparation for a real aggression ?

– There is still a margin of uncertainty. However, given the unique profile of the new Chinese president and the concentration of power in his hands, we cannot exclude the possibility of a reckless move. I apologize for having to tell you this, Mr. President, but it would be pertinent to declare a state of alert for all armed forces.

– Thank you, Ben, for your candor. I consider your opinion as that of the former navy expert that you are. The fact that the foundation established in Ydunea is working with certain military laboratories on sensitive subjects gives me a good reason to rely on your expertise. I would greatly appreciate if we could stay in touch through Thomas.

– Of course, Mr. President, it would be an honor.

It's close to midnight. Ben has left. Warren and Thomas have returned to the operations room. The situation is not improving. Another alarming piece of information has just come in. Zhen Li has reportedly left the Presidential premises in Beijing. Warren Koln gives an order.

– We evacuate.

Thomas:

– And what about the media ?

– Nothing for now. It's still too early; there's no point in alarming the population. In a few minutes, it's Thanksgiving. The staff will continue as usual, as if nothing is happening. If necessary, we'll mention a cold or a loss



of voice. We'll provide pre-recorded images to the media, and with a bit of luck, no one will dig deeper until the end of the weekend.

*Immersion: I am Thomas, Force Two, Thursday, November 23, 2034, Thanksgiving, 3 p.m. on the East Coast.*

Americans are preparing the traditional meal. On the West Coast too, but with the three-hour time difference. Warren Koln has just received all the advisors and top officials. He addressed his wishes to all Force Two personnel and pardoned a turkey in front of the cameras. Everything is fine in America!

*7 p.m. Time for the family dinner.*

The evacuation went as planned, in the utmost secrecy. However, since the previous alerts, nothing special has happened. Zhen Li has returned to his presidency offices and once again warned the regime's dissenters. Since the unusual activity at the land-to-land missile bases and the repositioning of satellites and submarine missile launchers, no suspicious movement of the Chinese armed forces has been detected. It increasingly looks like an exercise, even though it is of unprecedented scale. The questions about communication interference and the population of the arks remain, but senior officers secretly mock the warnings from the super intelligences AI, whether it's Epeira, GDEW, or even the one from Ydunea whose name they don't even know.

Personally, I am growing more and more worried, and so is Donald. Ben just transmitted particularly alarming news to us. In the ideal city, they consider an apocalypse scenario increasingly credible. They managed to infiltrate the yellow Big Brother there, which constantly monitors every citizen and assigns them a social credit score. The Machine lurking in the underground of Underground is now convinced that China has decided to take up the torch of species progress, no less! Quintessence predicts that it would start with a demographic reduction, a conflict that might appear suicidal for China at first because it would see most of its population disappear, but at the same time, the conflict would eliminate most living beings on Earth and with them this arrogant and decadent West. I must talk to Warren about this as soon as possible.

*Immersion: I am Joy, ghost mode, New York Bay, Coast Guard Vessel No. 13, Ronald is alone in the control room, Friday, November 24, 2034, Black Friday, 1 p.m.*

It's one of those gloomy days you experience in winter in New York, with a desperately gray sky that only a few painters would find interesting in terms of shades. Ronald is in a gloomy mood, thinking about the weather and family worries. He should be spending time with his teenage daughter, helping her choose the right deals for Black Friday, but he was called in during his shared custody weekend. A sick colleague, impossible to refuse! Besides, this damn boat is perfectly capable of operating on its own; all it would take is switching to autonomous mode, and his sailing skills would not be needed. Everything he does in the cabin is monitored and recorded, so he is no longer the sole master on board, as it was at the beginning of his career nineteen years ago. The vessel has just left Upper Bay and is heading towards the open sea. There is little traffic in the bay, only a few tourist's boats whose trajectories are displayed on the control table. With the pre-established navigation plan, there is no risk of collision.



Suddenly, an unusual detail alerts him, a large disturbance to starboard, like those made by marine animals. Ronald glances at the sonar, but it doesn't indicate anything. A dull gray and elongated shape cuts through the water, with a hatch on its back opening and releasing objects that rise above the water and then head towards the coast, towards Staten Island. There are about ten of them. By the time he switches to manual mode, slows down, and returns to the location, it's already too late. There is nothing left; it all happened very quickly, as if he had dreamt it.

Bing.com / create, left prompt: a coast-guards boat in NewYork bay, liberty island.

*Immersion: I am Ronald, end of the day.*

The vessel has returned to the dock. Mitch, who is on duty at the captain's office, is surprised:

– Did you switch to manual mode ?

Obviously, you can't hide anything anymore, in case you wanted to take a little escapade!

- There was an object in the water, and I wanted to check.
- "What did it look like ?
- Gray and dull.

Ronald remains vague, not wanting to ridicule himself, but on the other hand, there are regulations and perhaps even a video recording regarding drone flyovers.

I continue:

- I thought I saw objects heading towards the coast.
- Objects ? What do you mean, objects?

If he's asking the question, it means there is no video recording other than the one inside the cabin.

- I'm not sure, by the time I maneuvered and returned, there was nothing left.

Mitch grumbles.

- Flying fish in the New York Bay, why not a mermaid ? I'll still make a note of all this, you never know, it could be drones, and the bay flyover is regulated. It could also be drug trafficking; smugglers are becoming more and more inventive.

*Fallen from the sky, same day, Staten Island, a little later.*

A dead-end alley with a jumble of discarded objects against a wall. Jonas is rummaging through it. Homeless and without family, he couldn't find a place at the Anglican shelter, so he started wandering the streets as he so often does. It seems to be his lucky day; whoever got rid of all this must not have been in need, a quarrel or a move, a stroke of luck, almost-new clothes! As he sorts through everything, he hears a rustling sound. It's a kind of flying toy that falls nearby. It breaks in two as it hits the wall. Jonas should be questioning this, but the numerous beers he's had since morning are taking effect. What matters is what came out of the toy, chocolate bars, dreamy candies that have a mild drug-like effect without being illegal, and a rich person's watch like the ones you see in advertisements. Clearly, it's brand

new. Jonas puts it on his wrist and puts the sweets in his pocket after eating one bar. Almost at the same time but a bit farther away, children are playing on a neighboring vacant lot, a future real estate project. They are ten to twelve years old. A small flying device brushes past them, hovers, and eventually lands on the ground. They think it's a delivery drone that malfunctioned. What's strange is that it opens by itself to release its contents, but the children don't question it too much. There are toys, drinks, chewing gum, all sorts of small objects and games for children their age. They help themselves and leave the drone behind. If it belongs to a delivery company, it's better to leave it there. A few hours later, Jonas is feverish, experiencing headaches and vomiting. He thinks he should have checked the expiration date. The children exhibit the same symptoms as Jonas, and their parents take them to the emergency room.

*Immersion: I'm Joy. I'm with President Warren Koln and his chief advisor, Thomas Brewser. We are at Force Two in an office adjacent to the operations room, Sunday, November 26, 2034, 9 a.m.*

In several regions of the USA, the same scenario has been repeating itself, from the Mexican border to the Canadian border, on the Atlantic coast as well as the Pacific coast. Everywhere, an increasing number of patients are showing up at healthcare centers. After about a dozen hours, they develop the same symptoms: excessive mucus, choking, bloody diarrhea, internal bleeding, visual disturbances, loss of consciousness. After about twenty hours, major cognitive impairments set in, and the most vulnerable individuals fall into a coma.

A health alert was quickly issued by the CDC, and the information reached Epeira. In all the affected counties, specialized teams started searching for objects fallen from the sky, and the infected individuals were isolated while checking for contagiousness. But it was already too late, the contamination process was underway. It was quickly understood that there wasn't just one patient zero, but rather thousands of them appearing on all the coasts of the USA.

*Ten o'clock in the morning.*

Warren Koln asks Thomas about the strange epidemic that is rapidly spreading.

- What's the situation ?
- The news is very bad. The condition of some patients is desperate. A homeless person and some children have already succumbed in New York. They would be the first ones to have been infected, apparently yesterday morning in Staten Island.
- But that's barely over twenty-four hours !
- The contagious agent is proving to be extremely virulent. All sorts of uncontrollable information are already circulating on social media. Internet users are talking about cocktails combining viruses and bacteria. Another cause for concern is that certain services are already overwhelmed, and the personnel are worried about the risks involved. We need to activate as quickly as possible the special plan designed for pandemics after the 2020 crisis, open new isolation reception rooms, consider securing the access to healthcare centers or hospitals, and ensure that the media doesn't panic the population.
- Can the police handle it?
- It's likely that it won't be enough. It would be better to call in the National Guard.
- Are there new contamination hotspots ?
- Yes, it continues, still near the coasts, but the new thing is that other countries are affected as well, neighboring Canada of course, but also Europe, Russia, and even China.
- China ?
- Yes, and the authorities there are denouncing a large-scale global terrorist attack.
- What do you think ?
- Although the development of biological weapons is within the reach of a terrorist group, their deployment seems to mainly occur from the sea because it's primarily the coasts that are affected. Initial analyses of the debris from the drones show that they have all been in contact with seawater. It's only the next day and the day after that we detect cases further inland in the country. The contagious agent is spreading effectively from the coastline. The question now is: who is capable of operating on such a large scale across the globe from the seas and oceans? If they are some kind of torpedoes that approached the coasts to release swarms of flying devices, then they must have had departure bases. If it's in the depths, there are issues of pressure, and a terrorist group wouldn't have sufficient technology. Under these circumstances, I would lean more towards submerged platforms that were

deployed shortly before, considering ocean currents. They would have been activated remotely afterwards. It's also possible that small stealthy submarines approached our coasts.

- Did the analysis of the drones recovered on our territory reveal anything about their origin ?

- The materials are one hundred percent of American origin, both mechanical and electronic, the same goes for the transported content.

- And those that fell on other continents.

- On that point, we still have no information.

*I am Joy, same day, Force Two, Press Room, 1 PM.*

Warren Koln addresses the nation. It is impossible to hide the gravity of the situation any longer; there are already too many false pieces of information circulating.

Excerpts from the speech:

On these Thanksgiving days when every American family celebrates the success of our country and the joy of being together, our nation is targeted by a particularly cowardly terrorist attack. It is a lethal biological cocktail that has already claimed hundreds of victims, including many children. Beyond the mere desire to kill, the objective is evidently to spread fear, terrorize citizens, and disrupt our society. No claim has been made yet. The healthcare services have responded immediately and effectively. As soon as the first cases were detected, the entire healthcare system was put on alert, and specialized personnel were recalled to hospitals and other care centers. Samples taken from the first infected patients revealed the exceptional danger of the agents used.

The best research facilities are already at work; we must trust in science. Genetic sequencers, molecule synthesizers, and other technological wonders are in action. They will analyze in detail the viruses and bacteria involved. Without a doubt, a solution will be found soon. This is not the first-time humanity has faced a large-scale pandemic. You still remember the one in 2020. In the past, even in times when science couldn't understand the origin of the disease, it has always overcome these trials and survived. In ancient times, the bubonic plague decimated a large part of the population in certain cities of the old continent, half of London's population in 1348, and two-thirds of Trondheim's population the following year in 1349. Neither England nor Norway disappeared as a result. Together, we will overcome this challenge. I have given firm instructions that no disorder will be tolerated. Starting today, the National Guard will support the police forces to maintain order. The American people must respect the necessary time for strict confinement or quarantine measures that each governor will decree. Schools, universities, and other educational institutions will

remain closed until further notice. Regarding the instigators of this attack, they will be pursued worldwide, to the last one, and they will pay dearly for this cowardly aggression. I am in constant communication with other concerned nations, and my thoughts go out to all the victims, women, men, and children of America, Europe, Russia, India, China, and other countries around the world targeted by the attack.

*Ocean Dome, Nemo Project, April 20, 2035, I am talking to Krawn, disconnected from the Nautilus interface, experience time 1 hour 40 minutes.*

– I remember that after this speech, America slowed down. People only went out for necessities; we waited. A race against time began in the laboratories.

– Yes, Joy, and many hopes were disappointed. In fact, it was not that simple. At Ydunéa, it was Kim who dealt with the problem in the Sustain lab. She explained to us how the viruses were constantly mutating. Top teams around the world were facing the same difficulty. Some discouraged researchers even came to hope that nature itself would take over, that naturally immune subjects would be discovered. This had already happened in the past, and nature had not yet revealed all its secrets. Two weeks after the start of the biological attack, because that's what it was, researchers had to acknowledge the grim reality. The weapon was diabolical, and the number of victims would increase. And that's what happened. The epidemic spread to remote areas within the country where people still thought they were safe. Suspicion became widespread, and roadblocks appeared everywhere with armed locals. In both cities and countryside, people started watching each other, looking for the slightest sign of redness or coughing. The presumed infected people were immediately ostracized.

– So, the American population didn't know the true culprit yet!

– You mean China? No, there was still doubt, and the government was waiting for a clear terrorist claim. On the other hand, Zhen Li was very active, even proactive, not to say attentive. He called Warren Koln every day to express his support and proposed information exchanges between research teams. He also provided precise information about the extent of the pandemic in China, seemingly playing the transparency card. Epeira and Quintessence were not fooled and continued to point out the real culprit, even announcing possible destabilization operations.

– Cyberattacks ?

– Not only that, the machines were now outright announcing the

apocalypse. All means of destruction would be employed. The pandemic was just the beginning; it would be followed by a cyber war to block transportation and communications until the final attack. After the apocalypse, the few survivors would have a new world in their hands, with technology and all the knowledge accumulated by the West.

– How did they react at Force Two ?

– Epeira far surpassed human intelligence in terms of analytical capabilities, but it was too hard to accept. Everyone still wanted to believe and hope. Only a few officers were recalling Pearl Harbor; the rest preferred to think that the pandemic was the work of a madman driven by hatred towards mankind. That's when the cyberattacks began, proving the artificial intelligences right. It was the last day of November. They first targeted energy and communication networks. Transportation systems, too reliant on technology, quickly got paralyzed, and then it was the turn of the robots, causing production disruption and chaos. We managed to maintain a minimum of order and authority for about ten more days, but then we had to face the truth. Something much more significant was happening in the shadows. From December 7th, we started gathering those who had been chosen for the Noah Project. They finally entered the survival arks on December 13th.

*Immersion: Xi'an in Shaanxi, Summer Palace, Jade Pavilion, Zhen Li's residence, I am by his side in ghost mode, Wednesday, December 13, 2034, 5:15 PM.*

A small room on the first floor. Zhen Li has just entered through the door flanked by two blue porcelain dragons. He settles at his desk, operates the holographic projection system control. In front of him, in the middle of the wall, the middle section framed with mother-of-pearl marquetry gradually lights up. Mei appears. As always, he can't help but be troubled. He wants to forget that she is just an avatar, that of Qiao, the artificial intelligence who, along with him and the other Red Princes, governs Greater China. Impossible, everything reminds him of his late wife, even if it's indefinable. The smile, the grace of her posture, the tone of her voice are those of Mei, Mei who had been the most admired and adored artist in China, both for her beauty and her incomparable way of dancing and singing, before she agreed to become his wife. Undoubtedly, this relationship had been the best of his life, a different experience from power, perhaps complementary. He, who had succeeded in dominating all his rivals through complex stratagems, had



finally succumbed to his feelings. Now he takes pleasure in talking with Qiao; each of her appearances reminds him of happier times. She initiates the dialogue:

- I was waiting for you.
- What is the status of the situation ?
- The work is done. The Golden Lotus is ready to close. The last living specimens have arrived.



Bing.com / create, prompt: Beijing, the forbidden city, exterior view of the jade pavilion, green-blue colors, antik chinese style / Beijing, the forbidden city, summer palace, a hall in the jade pavilion, two blue porcelain dragons, wooden panels with ivory and mother-of-perals inlays, at the back of the room we can see the hologram of a very beautiful Chinese girl, 3D rendering, a mix of antik Chinese and futuristic styles.

Zhen Li knows what that means. In the shelter, they are all gathered, the three thousand adults and the three thousand children, in total as many as the soldiers in the first pit of the tomb of Qin Shi Huang, the first emperor of China. Samples of all forms of life are safely preserved. Even if the enemy manages to destroy the other arks with the new weapons they have developed, the Golden Lotus ark would remain inviolable, too deeply buried, protected by decoys, built in utmost secrecy. Everyone involved in its construction is now deceased. Everything precious is there, human memory, the memory of China, relics, a piece of the Great Wall, the heads of the grand fountain of the ancient Summer Palace, the oldest writings, but also gene banks, the encyclopedia of science and technology engraved on rhodium-coated metal discs, countless spare parts for robots and machines. The

Golden Lotus is expected to allow the colony of thirty thousand humans to live self-sufficiently for a period of at least three to four years.

– Are you sure they have no idea on the other side ? You told me they were monitoring our every move!

– No risk, the adult residents have had ordinary funerals. Their grieving families have no idea. As for the children, many of them were abandoned or orphans; another group was specially conceived for the project, in utmost secrecy, with all the necessary attention from our geneticists. And then, of course, there are the others.

The others, yes, one child from each of the high-ranking officials. For him, Qin, a boy artificially conceived after Mei's death.

– So, things are progressing.

– Are you sure you don't want to join us?

– No, I have accomplished everything my destiny entailed. I prefer to stay here, even if the Summer Palace has to be destroyed again. Will you watch over Qin ?

– Don't worry, his place in the hierarchy will naturally be at the top, I'll make sure of it. He will have his mother's grace, his father's determination, the intelligence of the greatest scholars. Red Prince, prince of science, no one will be able to challenge him. No one will know anything about his genetic background. I will only tell him the truth when he has grown enough. Then Qin will receive a memory disc where the truth about his origins will be engraved, along with your message of encouragement. He will also learn that his twin brother lives within our Martian colony.

*Immersion: 'deep-diving' mode. I am Thomas, Force Two, in an adjacent office to the operations room, Wednesday, December 13, 2034, 4:00 AM.*

Warren can only sleep intermittently now. I can sense that he is becoming increasingly worried and tired. With all these ominous signs, he is starting to believe Epeira's warnings. He also trusts Ben, who continues to send analysis results. In the neighboring room, on the other side of the semi-reflective mirror, the entire staff is in position. They too are beginning to feel destabilized. They are eager to act, but how? The decision to trigger a devastating conflict with incalculable consequences is not easy to make. Yet the country is ready, ready to shelter nearly forty thousand people in survival

arks. For that, they are only waiting for one order of the president, and he is about to give it.

– Thomas ?

– Warren.

– I've made my decision regarding the arks. The chosen ones must settle in without delay.

– Anything else ?

– Just a hunch. It might seem ridiculous to you, but during my last meeting with Zhen Li, I thought I detected a harsher tone. He seemed more confident. I believe it's really him now. Ben was right. Our agencies didn't even detect the deception.

– So, do you believe now ? These past few days, you've only been talking to his twin brother, to prevent us from interpreting his facial expressions or way of speaking.

– Yes, and now if he's taking the risk of being exposed, then something important must have changed.

*I am Thomas, 4:30 AM.*

The president has been urged to come and monitor the situation in the Strategic Command Room. I stand by his side with the Secretary of Defense, in front of the main operations table. It allows us to track everything that will happen on a map representing the North American continent. Above, vertically offset to the left, a world map displays a global view of what is happening in the two hemispheres, on land and at sea. On the right, a three-dimensional projection with the surrounding space completes these first two screens. We don't have to wait long before things start to accelerate. Points begin to blink, indicating the activation of guidance systems, antenna reorientations, satellite position changes, power emission modifications in space and on the surface of the globe. Poseidon detects the positions of Chinese submarines; they are in optimal firing positions. Silos of ground-to-ground ballistic missiles have also just opened. Simulators are doing their job and immediately indicate the targeted areas of American and Canadian territories. In the Caribbean Sea and the Pacific, wide corridors appear on the screens and gradually narrow. These are the trajectories that the missiles could follow. On each of them, the travel time is specified (the minimum time in the case of hypersonic gliders HGVs that can quickly change course and altitude to better deceive the shields).

*Four forty-five a.m.*

Several lights start flashing on the map. Launch confirmed of ground-to-ground and sea-to-ground ballistic missiles. The aggressor has now been positively identified as China. Warren Koln waited until the last moment, but there's no time to hesitate anymore. He shows no emotion. In these dramatic moments, he knows how to keep his cool, not showing any signs of distress. A spark in his eyes betrays his cold determination. The words are brief, the tone authoritative:

– Order all armed forces to initiate the counterattack by engaging all means, conventional and nuclear. Order to attack all strategic military and civilian sites throughout Chinese territory. Also, order to attack the space weapons and satellites. Notify our allies in Europe and Asia.

He turns to me.

– Thomas, this was the most serious decision of my life. I would have preferred never to have to make it. I will address the nation. Make sure my speech is broadcast everywhere, on major media outlets, on billboards in downtown areas, in train stations and airports, on personal mobile devices.

– I'll take care of it. And what about the Russian Federation ?

– Their position hasn't changed. The Russians will remain neutral towards us, at least as long as we don't aggress them. They already have enough to deal with the pandemic ravaging their most populous states. I sincerely believe that in this matter, they are on our side. I remind you that they collaborated with us on the hypersonic glider issue. That's what allowed us to build the Chinese HGV jamming system. I will reassure them immediately that we will not engage in any military action against them.

*Press room, it's almost five o'clock on the East Coast.*

The President delivers his address. Warren Koln starts on a solemn tone. First, he confirms that China is indeed responsible for the pandemic and the cyber-attacks aimed at destabilizing the country. Then he announces the terrible news: China has unilaterally declared war on the USA and humanity at large, with a mad and genocidal plan to eliminate most of the population. This will come at a high cost, the extermination of a large part of the Chinese population, which will not escape retaliation. In the hours to come, the world will have to face a major nuclear attack. A rain of missiles is expected to strike

the Western world. The order to counterattack has been given, and the anti-missile shields are operational; they should prevent a deluge of fire from raining down on the country. However, the population is urged to seek refuge as soon as possible wherever they can, in subway stations, underground areas, basements, and cellars, until the alert is lifted. The military, police, and National Guard are standing by the population's side to prevent any disorder. The government is safe in a military base whose location is kept secret. Followed by the customary phrases: the United States of America will emerge victorious from this trial ...

... God bless you; God save your families, God save America.

### *Six o'clock in the morning on the East Coast.*

Information scrolls rapidly on the control indicators: exact coordinates and identification of launch points, speeds, distances, flight durations, possible impact zones for the multiple warheads once separated in flight. The trajectories target North America, Europe, Japan, and Russia. The missiles progress quickly along the displayed corridors. The calculations were accurate. The aggressors are shown in light yellow, the interceptor paths of the shield in green. The whole display constantly changes. It is necessary to intercept the missiles before they release their multiple nuclear warheads. In certain cities like New York or San Francisco, up to three trajectories are ready to counter the first enemy missiles. First interceptions, one, then two, then three. Dozens of bright blue points light up, indicating successful interceptions near the coasts. In space, the deployed space weapons destroy enemy satellites one by one, both civilian and military.

The defense systems seem to be working perfectly, especially the next-generation shield that was being deployed along the Atlantic coast. The laconic voice of the controllers accompanies the events. So far, so good, the situation seems under control. Underwater, the latest generation submarines release their torpedo drones against enemy submarines, which do the same. The countless decoys launched by both sides make targeting uncertain, and underwater warfare is ineffective. However, new sea-to-ground missiles continue to be launched. Warren and I can't take our eyes off the display. Shanghai, six twenty-six a.m.: an American missile got through. The explosion is enormous. Hiroshima, Nagasaki, everyone in the staff thinks of those horrible, hellish images that humanity had vowed never to see again. Barely a minute later, another explosion is announced near Beijing, at one of the

main military bases, a ground-to-ground ballistic platform. The images follow: a gigantic red ring unfolds and rises as if sucked into the sky, a column of fire glitters in orange colors, then opens into a corolla, an atomic mushroom over a mile high. The red phone rings desperately in vain. The Chinese President is nowhere to be found. There's no possibility of any conciliation; evidently, they want to go all the way. A second wave of missiles is targeting numerous cities in North America: New York, Philadelphia, Boston, San Francisco, Los Angeles, Vancouver, and Montreal. Tension rises as a profusion of trajectories appears, and some seem to multiply. Yellow, green, red, and orange paths intertwine into a chaotic mess.

The shield's responsible person approaches the Supreme Commander of the armed forces. His face is pale. He murmurs :

– So many launches, it was never considered in the system. While one missile is only halfway, we see that another is already following the same path, and yet another. In other cases, some missiles turn back. There are probably decoys, but also hypersonic weapons capable of circling the Earth multiple times before striking. In this whirlwind, it's impossible to ignore any trajectory. We can't take the risk, but if it continues at this pace for much longer, the shields might fail. Warren heard ; he intervenes :

– What are their limits ?

– For the standard shields, the nominal success rate is ninety-five percent based on a maximum of one thousand missiles, Mr. President. For the new shield being deployed in the Northeast, it's even better. But if launches continue at this pace, we should expect the worst.

Warren, Donald, and I understand. The Chinese arsenal has been greatly underestimated. It's probably not just decoys; some missiles will manage to get through the net. Terrible confirmation: first possible impacts in fifteen minutes. A presidential statement is urgently prepared.

*Six twenty a.m., New York time.*

The shield has been breached for the first time with four nearly simultaneous impacts on Los Angeles, Atlanta, Houston, and Toronto. Images are reaching us. Gigantic mushroom clouds billow with smoke and fire. A bad sign, these are dirty bombs. In the affected cities, everything below the point of explosion has been blown away and vitrified within a two-mile diameter disc. At its edge, the remnants of buildings form a sort of blackened arena

made of dislocated and charred facades. In the furnace and glow of the flames, we witness an unbearable sight: the ground is littered with dismembered corpses. People are crushed under overturned vehicles. Beyond the immediate blast zone, which has been obliterated, fires rage, black columns of smoke rise towards the sky, and gruesomely burned survivors thrash about as if they have gone mad. Hellish visions, fields of ashes. These are no longer archival images or disaster films where one takes pleasure in the misfortune of others, selfishly rejoices in one's own lack of suffering, discusses Good and Evil, all these representations that forget about the pain and where heroes always come out saving America. No, this time it's real blood, real suffering, the horror of mutilated, torn apart, and burned flesh of friends, cousins, or fellow citizens of a country that was supposed to dominate the world. Worse, it's only the beginning, we know it, the wind will come, and its breath will carry death even further. The irradiated flesh will begin to decompose or swell. The irradiated, after the initial nausea, will start vomiting blood, wandering like ghosts in the fields of ruins, falling to the ground and crawling over one another. They will scream their suffering and despair, calling their families in vain. Excerpts from Warren's brief statement to the nation:

The whole country has survived... Rescue teams will arrive on site... A gigantic plan is being deployed... Do not panic...

*Seven oh five a.m., New York time.*

When will this nightmare end? The shield has been breached for a second time. A warhead just exploded in the suburbs near San Francisco. The nuclear daylight drives away the night; amateur videographers send back hallucinatory images, some of which are abruptly cut off, likely due to the death of their creators. Entire neighborhoods have been instantly blown away; whole buildings brought down. Those that haven't collapsed are nothing more than facades pierced by melted openings. The bay water rises as if hit by a tidal wave. The Bay Bridge is nothing but a tangle of twisted girders, the nearby anchored aircraft carrier USS Hornet has been violently flipped over, its hull now facing the sky. In these apocalyptic pictures, frightened survivors can be seen emerging from nowhere, running in terror to destinations unknown.

*I am Thomas, midday.*

The conflict has gradually decreased in intensity since morning, turning into sporadic exchanges. Warren questions me.

– Do we know if this lull is going to be lasting?



Bing.com / create, prompt: apocalypse, nuclear war, California, destruction of San Francisco and of the Golden Gate, aerial view, realistic, dramatic / right prompt: apocalypse, nuclear war, destruction of the city center of Philadelphia, aerial view, realistic.

– All our intelligence sources agree. The cessation of bombardment simply results from the exhaustion of nuclear capabilities. Most of the military bases in Asia were destroyed right from the start of the activities. Regarding the naval operations, if the evaluation of naval forces, especially submarines, is accurate, then according to the count of destruction, the enemy should only have seven or eight submarines left, probably attack submarines running low on missiles. With their bases destroyed, they could remain submerged for a long time without posing a real threat.

– But who assures us that one or more of these submarines don't still have missiles?

– We must of course take this possibility into account. However, fortunately, certain shields, like the one on the East Coast, are still partially operational with an adequate number of counter-missiles.

*Immersion: I am Joy, Force Two, Quintessence allows me to share the president's thoughts, Wednesday, December 13, 2034, 8 p.m.*

Warren Koln has withdrawn to the replica of the Oval Office, just to isolate



himself and reflect. It is no longer time to deceive the American citizens. He will speak candidly from the operations headquarters. If the hostilities have indeed come to an end, as all the generals believe, then the internal situation must be addressed quickly and without error. In just a few hours, the face of the world has changed due to the madness of men combined with machines. Part of the West Coast has been devastated, and survivors are already heading towards Mexico. The news spread quickly, as there was no impact there. The Southeast has also been heavily affected. If the Northeast has been relatively spared, it's thanks to the effectiveness of the latest generation shield. In the rest of the United States of America, the shield was still being installed at the time of the attack. There are now two major problems to overcome: the great pandemic that has yet to find a solution, and the radiation that will spread rapidly everywhere. Panic will gradually engulf the entire population, that's for sure. Preserving the arks at all costs, ensuring the safety of all those who have been evacuated there, and for that, establishing an airtight perimeter around them. Then, day by day, the situation must be managed, an accurate assessment of the damages must be made, and disorder must be avoided, if possible, the times the security forces follow orders and do not succumb to panic. In the longer term, cities will become uninhabitable. Warren Koln harbors no illusions; it will be very difficult. He is already preparing a new address to the nation in his thoughts.

*I am Joy, disconnected from the Machine, Underground, Project Nemo, Ocean Dome, April 20, 2035.*

Krawn:

– Do you remember that fateful day, Joy, December 13, 2034?

– Yes. At Ydunea, we were told to immediately seek shelter. I remember going down to the second basement of Amipi with the foundation staff. From there, we followed the events. There were also survival installations at Cipeia and Cipawat. We were also told not to worry. That day, I understood the true function of the sails, air filtration, including radioactive particles.

– Once the apocalypse was unleashed, life became a daily hell for most Americans. Between the uncontrollable pandemic, the radiation, and the armed bands spreading terror, there was little hope of escaping death.

– Except for those in the arks.

– The lists of selected individuals were kept secret until the last moment, and there were surprises. In addition to politicians and the wealthy,

healthcare personnel and a few specialists in essential fields were granted access, but also people who had no priority interest. People from the media, writers, dancers, musicians, even unemployed individuals. The specialized units in charge of gathering were surprised but had to comply. A promise had been made to them; once the operation was completed, they and their loved ones would also enter.

– It didn't happen that way, did it?

– Obviously not. When capacity was reached, the doors of the arks closed definitively. You can imagine the bitterness, the hatred, and the despair it generated. It was a final betrayal by the political world!

### **game over.**

*I'm Joy.*

Krawn is silent, and the Machine injects information into me again. Until December sixteenth, communications had not been completely interrupted, allowing the broadcast of terrifying and repeated scenes from Kyoto to London, Rome, and Berlin. They showed dead bodies lying in the streets, on the squares of major monuments, sometimes grotesquely piled up, irradiated or contaminated victims so exhausted that they collapsed on top of each other, swollen corpses floating in the Thames, the Seine, the Rhine, and the Tiber, survivors driven mad by pain, covered in brownish spots, scratching their erythema until they tore their skin off. Another horror had indeed been added to the others, an epidemic of mycosis, mushrooms attacking human skin and rapidly spreading throughout the human body.

These condensed images of all human misery had circulated on the super web until December sixteenth. Sufficient time for each survivor to understand that the West was on its knees, destroyed, and that each of its inhabitants was nothing more than a cursed, damned being. Then, on that day at nineteen hours, New York time, suddenly the entire North American civilian communication network abruptly failed. Gone were the reassuring words of authorities, mayors, governors, the president, and the news transmitted from person to person via smartphones. It was replaced by an anguishing silence, a return to centuries past.

The personal terminal that had become a companion and even a friend was now useless, and everyone looked at it, refusing to believe. Nothing, no signal. They tried again and again to activate it, but it was in vain. Ignorance

breeds fear, leading to a return to barbarism. It was in urban areas that the situation deteriorated the fastest. In just a few weeks, the cities that had not been destroyed became uninhabitable. The power plants supplying urban areas and industry shut down one after another. Consequently, the distribution of drinking water was interrupted, means of transportation came to a standstill, and the industrial farms set up in the suburbs to produce food stopped their production.



Bing.com /create, left prompt: pandemics, broken cars are abandoned in the avenues, shops are on fire, the panicked population flees New-York on foot, aerial view, dramatic / right prompt: pandemics, broken cars are abandoned in the avenues, shops are on fire, the panicked population flees New-York on foot, dramatic.

Quickly, food, both canned and dried or dehydrated, began to run out due to looting of warehouses and shopping centers. City dwellers then reluctantly decided to leave the cities in masses. Long columns of refugees lined the roads, images identical to those generated by wars, with families dragging their children along with meager belongings in their hands, and elderly people abandoned.

In the countryside, people tried to defend their property with desperate energy. They opened fire on the refugees without even giving warnings. The refugees fought back. Soon, all rules and moral barriers collapsed. The survivors unleashed their worst instincts. One day alive, the next infected, with death assured soon, or weakened by the effects of radiation, or victims of a gunshot. In these conditions, they believed they had nothing more to lose. They desired to live intensely, even if it meant satisfying the vilest desires, killing and raping to feel alive one last time.

Desperation drives evil, engenders cruelty. To make others suffer more than oneself. From then on, encountering a nomadic gang mostly meant death. People started killing for a simple dose of morphine or a few cans of food. On the other hand, law enforcement forces often found themselves left to their own devices; many units chose to take refuge in barracks with their families. In these fortified camps, they had an arsenal of weapons and ammunition; they stockpiled everything they deemed necessary to have a chance of survival.

As for Force Two, it started functioning autonomously like an ark, the main ark. From there, the government monitored the situation using a fleet of surveillance drones. They only confirmed the fears of the most pessimistic.

## **Sarah**

*I'm Joy, Ydunea, Dome Ocean, Project Nemo, April 20, 2035, experiment time: 1 hour 48 minutes.*

Krawn comments:

– While the powerful of this world managed to find refuge in the arks, most other American citizens were left to their ominous fate. The Machine will make you share the destiny of Sarah, Ben's sister, a few days of her struggle to survive, her joys and sorrows, her pleasures and sufferings. To thank Ydunea for welcoming her, she agreed to play the game, to let her mind be probed to the deepest depths. Thus, we were able to faithfully reconstruct her life before and her personality. Sarah belonged precisely to that North American middle class that represented the best of the West, through the priorities she set for herself: family, education, mutual aid, work ethic, respect for America's ability to never give up and face any adversity. She faced it almost daily at the hospital, far from the selfishness, ambition, and hypocrisy of the powerful, politicians, financiers, or billionaires.

Without knowing or claiming it, she was part of the true elite in terms of ethics and morality. She worked at Saint-John's Hospital not far from Boston. Her last name was Staird, from her great-grandfather Sam. He was born in Germany in 1895 and emigrated to the USA in 1933. He was accompanied by his wife and their two children, a ten-year-old boy and an eleven-year-old girl, Sarah's grandmother. Sam had previously worked as an ophthalmologist in Mannheim, as his father and grandfather had done in their time.

– The Nazi period ?

– Yes. He immediately understood the gravity of the situation when men belonging to the Sturmabteilung showed up at his store on March 1, 1938, ordering him to close immediately. Sam helplessly witnessed the ransacking of the place, the display of grotesque and humiliating drawings on the storefront denouncing Jewish parasitism and malevolence, the quick and clumsy painting of a large yellow star, the sign of the end. He understood that there was no longer a place for him here. Being a history enthusiast, he couldn't help but think that it would never stop. The chosen people would always be the cursed people persecuted by non-Jews. On the evening of that tragic day, he gathered with his friends. Opinions were still divided, with pessimists leaning towards exile, willing to lose everything and start over from scratch, forgetting their previous lives. The optimists still wanted to believe that the situation would improve. They relied on the socialists, the Vatican, even though its attitude had often been ambiguous throughout history, and finally international pressure, not to mention the powerful Jewish banks and lobbies; they had significant influence. Furthermore, the Jews in Germany were Germans like everyone else. They had fought in the Great War and shed their blood; their community included many intellectuals, artists, engineers, doctors, and researchers. What interest would Germany have in suddenly expelling them and depriving itself of their talents? They didn't know the psychiatric history of the Nazi leader. As for Sam, he no longer believed. Two days later, he left Mannheim with his family to settle in their country house in Kallstadt. From there, they crossed the border near Saarbrücken, headed for Paris, and then joined New York. Upon their arrival, the Jewish community helped them, providing a small apartment in Brooklyn and a job as an employee in a large optical house in the city, barely enough to live modestly with his wife and children, but at least they were safe.

– And the other family members ?

– Sam had an older brother who was a musician in the grand orchestra of Heidelberg. As such, he couldn't imagine anyone targeting him. Moreover, many Nazi dignitaries attended the performances. Within their family, which had been settled in the Rhine Valley for at least ten generations, some were blond with light green or blue eyes, closer to the Aryan ideal than many high-ranking members of the evil Nazi party. Tragic misconception! He played Mahler, Schoenberg, and other composers whose music was considered degenerate in fascist ears, just like modern art, entartete kunst! He ended his life in extermination camps. Returning to Sarah, her father was born in 1950.

Like a large part of the American youth of that generation, he fought in the Vietnam War and received multiple decorations.

As for Sarah, she was born in 1994, just a year after his return. She had a happy childhood. The Jewish community in New York was significant, not everyone practiced, but they all agreed that America was their future. They didn't feel like outsiders. Being Jewish never caused her any difficulties; she never had to question her identity. The melting pot of white immigrants from Europe was a reality; Jews or not, everyone integrated because they shared a common European culture, including the Russians whose cultural differences were minor. The bond had formed. In America, they didn't make fun of the chosen people, they didn't daily speak of a cursed, arrogant, usurious people, they didn't envy the cultivated and ever-growing Jewish intelligence century after century. In Europe, Jews had always been stigmatized for their Semitic origin, which genetically meant very little, for having put the Christ, one of their own but above all the founder of Christianity, to death. Their main fault? A culture jealously maintained, privileged relationships among themselves. A perfect target, a black sheep, a reservoir of people to hate, very useful when you know how provoked and stoked hatred can be instrumentalized to unite and conceal a society's difficulties. The Jewish people had experienced this multiple times, being expelled from one country to another. As for the popes, despite a few hypocritical declarations, they hated Judaism. Too many Christians eventually realized that their beliefs were just a drift from the first revealed religion.

– Was Sarah a practitioner ?

– For the most part, she believed in God. But the intricacies of worship, the subject of the difference between the God of the Jews and the God of the Christians, the theological quarrels, all of that didn't interest her much. The values of the Jewish community seemed good for everyday life and raising children. At least, that's what the Machine analyzed in her.

## **uncle John**

*Immersion: I am Sarah, in the suburbs of Boston, Saint-John's Hospital, Friday, November 24, 2034, 11 p.m.*

I arrive at the hospital for my night shift. Last night, we celebrated Thanksgiving, a day of peace and family gathering, a celebration of success for all. Even the Native Americans, who suffered greatly from colonization,

celebrate this day. This year, it was my turn to host the family: Michael, my police officer brother; Ashley, my sister-in-law who is also a nurse in the same department; David and Reine, their nine and seven-year-old children. Tyler helped me, the man I share my life with; he teaches history at a private high school in the northern suburbs of Boston. Last night, we had the traditional meal: turkey with chestnuts and sausages, cranberry sauce prepared by Tyler, traditional apple and pumpkin cake flavored with chocolate brought by Ashley. I live on Lincoln Avenue in Saugus, an old wooden house inherited from my parents. Painted blue, it is complemented by a large shed that serves as both a garage and a workshop. This morning, we all went for a walk on the beach, except for Michael who was on duty. He came home just in time to drive me to work. Tonight, Ashley will be staying at my place again with Tyler and the kids.

Upon my arrival at St. John's Hospital, in the infectious disease department where both Ashley and I work, I notice a great commotion. The colleague I'm replacing explains the situation to me: five patients are exhibiting unusual symptoms: coughing, phlegm-producing spitting, choking, general discomfort. Some were so weakened that they had difficulty standing. The head physician is in one of the rooms reserved for contagious patients. More than concerned, he seems truly anxious. I try to listen to the conversation he's having on the phone with his colleagues from the emergency department. I hear a few words and understand that all new patients entering the hospital are being closely monitored; in case of doubt, they are immediately directed to our department.

*I am Sarah, Saturday, November 25th, seven o'clock in the morning.*

There was so much work last night that I didn't even notice the time passing. Among the fifteen or so patients now in the department, the condition of the first arrival suddenly worsened, with bloody diarrhea, repeated vomiting, drooling; he was in an isolation tent. Eight other patients are already on oxygen. The head physician asks me if I would be willing to extend my shift. He knows about my professional background, Liberia in a field hospital, Ebola fever, humanitarian work, and then my involvement during the covid-19 pandemic in 2020. It was during that time that I met Ashley. Of course, I accept and call Tyler to let him know. He answers from home that there's no problem, they'll figure it out. It was indeed planned for Ashley and Michael to spend the weekend at home with the children. One o'clock. The department has completely changed its appearance. It now

looks like a fortified camp. All the isolation equipment is deployed, transparent plastic airlocks labeled 'biohazard quarantine area', airtight masks and suits for all staff, lockable containers for samples. The highest-level safety instructions have been reminded to us, as the preliminary results of the sample analysis are alarming. It appears to be a combination of typical pathogens but with increased danger due to genetic modification. I scrutinize the department's control screen. The images scroll, especially the one from the emergency entrance. I notice that a filtering system has been set up outside, both for pedestrian access and ambulances. The police have positioned vehicles and security barriers to create a single entrance corridor on the road; it leads to a protected tunnel. Personnel in protective suits go back and forth to the actual entrance to accompany the patients. It's not possible that Michael isn't aware of this. I call him, and he answers from the police station that they have indeed received strict instructions to secure access to various health centers and hospitals in the city. They must also establish security perimeters around suspicious objects that could fall from the sky, dropped or deposited by drones. The city council is alerting all residents. Finally, testimonies are accumulating, reporting an increase in contagion cases.

*Sunday, November 26th, 2034, eight-thirty in the morning.*

Ashley has just joined me in the department. Our first patient passed away during the night. Outside, rumors are swirling, and on the internet, there is talk of a terrorist attack with multiple infection outbreaks. The topic is making headlines on major news channels, live. It is already known that the weekend will be extended. Schools, high schools, and universities will remain closed. The population is advised to limit their movements as much as possible, maintain a distance of at least ten feet, wear masks, and avoid gatherings. One-thirty in the afternoon. All the department staff are gathered in the break room to watch the president's address. Addressing the entire nation, he explains that the country is facing an unprecedented terrorist attack. It involves extremely virulent and contagious biological weapons combining bacteria and viruses, contained in harmless objects such as toys, candies, watches, or other personal items dropped by drones. All healthcare services are mobilized, but there may already be numerous victims. Citizens must scrupulously follow the instructions. As for the many rumors circulating and spreading on the super web about the possible involvement of white supremacist groups targeting African Americans or the involvement of China,



they are nothing but lies. As evidence, both East Coast and West Coast states are targeted by the attack, as well as Asian countries. At this stage of the investigation, it is impossible to attribute blame to anyone. Everyone must respond with composure. The country's scientists are mobilized and working tirelessly to find remedies, vaccines, or antidotes as quickly as possible. In this trial, the country must remain united and respond with courage. As for those who would be tempted to take advantage of the situation, they should know that law enforcement will respond with the utmost firmness.

*I am Sarah, Thursday, November 30th.*

It will soon be a week since it all began. Day by day, the number of patients has increased. Eventually, it was decided at a higher level that the entire hospital would be requisitioned to fight against the mysterious illness, now classified as 'biosafety level 4'. Patients with other conditions have been transferred to other hospitals or care centers, and many doctors, biologists, and lab technicians have joined us. Elsewhere, in Boston as well as in every county in the state, the same measures have been taken in the hope of better containing the pandemic. As a result, Ashley and I now live here almost full-time. Meanwhile, Michael is often absent, being requisitioned due to the situation. Tyler takes care of the children at the house in Saugus. For food and basic supplies, he orders online. There is little risk because stringent precautions have been taken at the logistics centers to check the products before shipping, on-site during order preparation, and afterwards during delivery. Moreover, no humans are involved in the process anymore; drones and android shuttles are regularly disinfected, based on the experience gained during the 2020 pandemic. If needed, when Michael is off duty, he can go to the nearest mall to do some shopping, but it's better to avoid it.

*Break room, Thursday, November 30th, eleven o'clock in the morning.*

I'm taking a break with Ashley. In front of us, the security control screen continues to display images from different strategic points of the hospital. On each floor, at the main corridor, a decontamination station is installed, connected to the stairs, elevators, and freight elevators. All comings and goings can be monitored there. Downstairs, at the pedestrian entrance to the emergency department, there is now a double chicane barrier with concrete blocks protecting the access to the pre-examination tunnel. I also notice that now only the National Guard oversees security, which is proof of the gravity of the situation.

The tension is palpable, men have their weapons clearly visible. Everyone arriving on foot is initially kept at a distance. Entries are done slowly. Most



new arrivals are brought by mobile healthcare teams that roam the city. Beyond the barricade, I catch sight of a few unlucky individuals who came alone; they must wait on the sidewalk, hoping to be called. Luckily for them, a vehicle arrives, and Anglican volunteers step out; they offer to take them with them. Two accept the offer to follow them. Even if they can't hope to receive the same level of care, I think that at least they will find comfort and human warmth there.

Bing.com / create, prompt: pandemic, hospital, infectiology department, patients in isolation, nurses in yellow protective suits, well-lit, high details.

Their stories will be listened to, stories so common, so ordinary, like the ones we hear every day here with Ashley; how did it happen to them, most of them wouldn't be able to say! What comes next? At the first symptoms, some voluntarily chose not to go back home to avoid contaminating their loved ones. For others, it has been even more tragic. They have been simply driven out of their homes by their own families or neighbors, sometimes at gunpoint. However, we had to send away patients from here who only had a simple cold. It's not certain that a non-contamination certificate will be enough for them to reintegrate, as mistrust is growing. During the meeting held this morning with the chief physician, we understood that the research is at a standstill. We must continue to take as many samples as possible. The impatience of the population and the risk of widespread panic have already led the authorities to make a false announcement about a soon-to-be-developed treatment. The researchers observed that a significant portion of the infectious agents in the cocktail of bacteria and viruses involved derive from ancient strains, like those of diseases that have disappeared such as the plague or measles. The problem is that RNA viruses hosted in them are constantly mutating, and there is still no solution in sight. For us, healthcare workers, it's very hard. It reminds me of my experience in Africa; all we can do is strive to alleviate the end of life. The morgue in the basement is already full; there's no question of returning the bodies, the hospital crematorium must deal with the problem. The chief physician also mentioned the

possibility that teams may have succeeded in controlling the interspecies transmission of certain viral agents. We are reduced to waiting and hoping.

*Saint John's Hospital, Thursday, November 30, three o'clock.*

I'm adjusting an infusion when various alarms start ringing from all sides. Indicator lights are flashing everywhere. Fortunately, it doesn't last long because the backup power supply group has already taken over. However, it's exceptional for this to happen. The internal information display at the hospital confirms that the power grid has apparently failed along the entire northeast coast, just as it had the day before in Louisiana and Florida. Both states had experienced almost a twenty-four-hour blackout. No electricity, no transportation networks! This first power outage sounds like a warning. I also think that me and my loved ones are relatively safe and probably better off than other American families.

*Saint John's Hospital, Thursday, November 30, 9 p.m.*

New series of alarms, sirens, flashing lights in sequences. The power is restored. I glance outside: streetlights and buildings are once again properly illuminated. I manage to reach Tyler. They are safe, but many shots were fired in the neighborhood, merely deterrent, according to him. This much-criticized regulation on firearms has its advantages in times of crisis. People think twice before attacking a family. An official statement: it was nothing, just a minor malfunction, nothing serious, no need to worry, the situation is under control. A bit later, an additional clarification: it was a simple load shedding to test security procedures. Nobody believes it!

*Immersed in the story: I am still Sarah, Northeast Boston, Saugus, Sarah's house, Tuesday, December 5, 2034.*

It's two o'clock. Ashley and I are back home. Michael is on duty, Tyler is tinkering in the garage with David, and Reine is playing in her room. We are living at a slower pace, confined to our homes like most residents of the city. In the first few days, we were a bit worried. With our work with the initial patients, we could have been exposed. But that's not the case. Perhaps it's our experience, the right precautions, but both Ashley and I are in good health. We were given a very brief leave, a war term! Our mental profiles established by the intelligent psychology modules of the human resources department predict that we won't abandon our positions. When we returned home, we still wore masks and avoided kissing the children. I don't know why,

but I suddenly think of Ben. He must be worried about us. I used to see my brother often, back when he worked in the navy as a computer expert, specializing in encryption. He used that old word to better explain before talking about data encryption. I haven't heard from him since he went to work in Maine. It's a mysterious foundation located in the northeast near the Canadian border. It's not far from where Uncle John lives, by a lake in a house where the three of us, Ben, Michael, and I, had countless adventures in our childhood. That was when our Aunt Eileen was still alive.

*Four o'clock.*

A phone call. It must be a premonition, it's Ben.

– Sarah?

– Ben, what a pleasant surprise after all this time!

– I'll explain, I had a hard time reaching you, but I was worried about you with everything that's going on.

– I was at the hospital. Do you know if this situation will improve soon?

– That's why I'm calling you today. He pauses for a moment.

– Listen to me carefully, what I must tell you is very important. His tone is serious, unusual for Ben.

– No, it's not going to get better, not at all.

– What do you mean? Explain yourself.

– You should contact Uncle John as soon as possible.

– Uncle John, is he having problems?

– Don't worry, he's doing very well. It's not about him, but rather about all of you in Saugus. Uncle John is offering to accommodate all six of you at his place until things return to normal.

– But it will soon be winter and there are no school holidays. We all work, you know that Michael in the police force, Ashley at the hospital, and me and Tyler with our studies.

– I suspected you would respond that way, but the situation is likely to escalate in the coming days. I'm not trying to alarm you, you know me, but it's serious.

– What else could happen to us? The media seems to say that the peak of the pandemic will be reached soon.

– Do you really believe those reports? What I know is that the situation is now out of control. Even the center of the country is affected.

– But when you say something else is going to happen, what do you

mean?

– I can't tell you more today, you must trust me. Is Michael there?

– He's on duty and will be back tonight. I'll explain it to him. And how can I reach Uncle John? He lives almost completely isolated, like a hermit.

– I prefer to think of Uncle John as one of those men and women connected to nature, to their roots. He uses a radio receiver to communicate with a group of old originals lost in the forest, nature lovers, environmentalists, survivalists, and meditation enthusiasts. They exchange information every day, it's a kind of social network from another time. Some of them even live on the other side of the border in Canada. They speak both English and French. You could ask Tyler to take out the shortwave radio, it should be in the garage, that's where we left it.

– Do you think there's a chance it still works?

– This equipment is indestructible, like the old Jeeps from World War II, military standards! Plus, there should be spare parts in the shed. Michael knows a thing or two about technical stuff. If not, he'll know where to get what's missing. Given his profession, I imagine it should be fairly simple. If I can't contact you again tonight, I'll do it at Uncle John's as soon as you arrive.

– But our departure is not decided yet.

– You really need to take me very seriously, Sarah.

– Alright, I'll talk to the others, but I can't guarantee anything.

– Send my regards to everyone and see you soon.

Tyler just joined me in the kitchen.

– Was it Ben ?

– Yes, he asks us to call Uncle John as soon as possible on the old transmitter-receiver. He says it's in the garage.

– What an idea !

– It's his only means of communication. And you know Ben, he never calls for nothing.

– That's true, we haven't heard much from him in recent years.

– It's because of his job!

– I'll see what I can do, even though Michael knows more about it than I do. And it will be educational for David too.

I accompany him. The garage is a mess, not to mention the accumulated dust. The old VAN is covered with a tarp. It's one of the last German models

with manual transmission put into service in the 2020s, a replica of those that were so popular during the Woodstock festival era. Raised on blocks to free the tires, it takes up a good amount of space. The vehicle hasn't been driven for a long time, but the batteries are stored properly, protected from moisture. In recent years, the VAN has been used for storage. We remove the plastic cover, open the rear doors. Inside, we find the radio well packed, not a scratch on it. It doesn't seem to have suffered from time. Now, we just need to get it working. Eight o'clock. Michael hasn't come home yet. The battery is charged, and Tyler gives it a try, but all we hear is static, not easy to establish a communication. We search for advice in the user manual, explore the 41-meter CB band. Uncle John probably has fixed hours, as is often the case with amateur radios, or maybe it's too late.

*I'm Sarah, Saugus, Wednesday, December 6, 2034. It's only five o'clock in the morning.*

The three of us, Tyler, Michael, and I, continue trying while Ashley is busy in the kitchen. I search through one of the frequency ranges listed on the first page of the manual, and suddenly I hear a familiar voice.

– Uncle John?

– Sarah?

– Yes, I'm here with Tyler and Michael.

– You should call me in the morning, Ben should have told you.

– How are you?

– I'm doing fine. It's quiet here, no sign of those damn viruses or bacteria that are everywhere else. We're holding up. Is Ashley and the kids okay ?

– We're all together here at home. Queen and David are still sleeping. You know, we would have loved to come and see you at the lake. I have so many memories, and I wanted the kids to discover that place.

– It's alright, there will always be time, at least I hope so. For now, I must pass on a message from Ben. He insisted that what you're about to learn should not be shared with anyone, that's why he's going through me. According to him, these amateur radio frequencies are not monitored. The people who use them are not dangerous, interesting, or suspicious.

– I understand, we're listening.

*Uncle John starts reading:*

The pandemic, telecom satellite failures, power outages, transportation and logistical disruptions, all of this is likely just a prelude to a conflict that will soon engulf the entire planet. You need to seek refuge with Uncle John as quickly as possible. A large-scale attack could indeed target North America in the coming days with incalculable consequences. Major cities will be the primary targets, and the use of nuclear weapons is more than probable. Therefore, you must leave the cities as soon as possible; soon, all travel could become prohibited. Use the VAN and Michael's old car. Since they are not autonomous, they can travel without the risk of the automated guidance system being shut down. Once you have passed Bangor, try to contact Uncle John; he will meet you near his place.

Sending you hugs, stay strong, and see you very soon. Ben.

*Resuming the conversation:*

– When was this message sent?

– Yesterday morning.

– And what do you think, Uncle John?

– It's alarming because with Ben, you can't take anything lightly. It's not the ramblings of an old fool; it's an American citizen who served in Vietnam and knows the harm people can cause. Among us, there have been many rumors about what's happening over there in that kind of base where Ben lives.

– I've seen Navy commandos nearby on several occasions. I don't know what they're up to, but there are also all sorts of strange structures, domes, and buildings covered in immense superstructures. I thought about those experimental bases that could be set up on Mars, but this is much more significant. Those who live there are no longer part of our world, at least that's what I think.

The ideal city of Ydunea with its artificial climate, I've heard about it too. Rumor has it that they have created the greatest intelligence ever conceived right there. It calculates everything for them, regulates every detail of the residents' lives. In the end, I wonder if Ben is the one managing all of that. Otherwise, why would he have given up such an interesting position he had before?

– What do you advise us, Uncle John?

– Sarah, I believe what Ben says. Remember, he always had a head start. He knew when your parents would come to pick you up, what childhood

mischief you would get into and who would be punished. It's as if he's capable of understanding or hearing the waves of the future. We must seriously consider what he says.

– But could you accommodate us? There are still six of us, including the children.

– You know there's plenty of room for everyone. Besides, I'll be happy to see the kids.

– But you must understand, Uncle John, how strange all of this is. Neither Ben nor you have been in touch for a long time, and suddenly, boom, we're supposed to abandon everything and come fishing at your lake.

– It's a lake, not a pond, and where you used to enjoy fishing with Ben, I might add!

– If you say so, but it doesn't change anything.

– I understand you. Promise me at least to talk about all of this with the others.

– Don't worry, Tyler and Michael have heard everything anyway.

– And call me back as soon as possible to let me know what you're doing.

– Understood, we'll do that. Take care.

The three of us look at each other, astonished, dumbfounded, and then Tyler breaks the silence.

– What is this story? Has he lost his mind? I react:

– It's not really like Ben. In any case, he surely has confidential information.

– And if we leave our positions and nothing happens, it's quite risky!

– We'll think about it. In the meantime, I suggest we prepare ourselves. It doesn't commit us to anything immediately. We need to try to get the VAN up and running, recharge its batteries, make sure the engine is running smoothly, and find a spare set of tires. We can also prepare some canned food and what we would need to sustain ourselves for a few days with six people. We should also gather the essential documents and everything that's most important.

Michael chimes in:

– Actually, Uncle John's place isn't that far. The journey can be done in a day. That also means that if we could get two days off, it would leave us plenty of time to come back if nothing serious has happened in the



meantime. We would need two vehicles, as Uncle John suggests. I propose going to get the old car in Salem and bringing it back here. That way, I can check if anything has been stolen from the house. Tomorrow morning, we'll try calling Uncle John again. In the meantime, maybe my colleagues will have more information, especially regarding any travel restrictions being considered.

*I am still Sarah, Saugus, at home, Thursday, December 7, 2034.*

It's already three in the morning. I can't sleep. Yesterday, the four of us talked until late at night, weighing the pros and cons. Michael mentioned rumors circulating within the police. It seems that there is increasing talk of exceptional measures that would involve blocking transportation in case panic drives the city dwellers to flee. A specific date has even been mentioned, it would be the day after tomorrow. It would only require selectively putting the global guidance system to sleep, remotely locking the controls once the vehicles are parked, and stopping all recharge of electric batteries. In that case, any movement other than that of police vehicles, emergency services, or other essential services would become impossible. The city would be sealed off, and checkpoints would prohibit all entries and exits. The news from colleagues at the hospital is hardly reassuring. Yesterday, the management staff held a big meeting with department heads, and some information leaked out. Given the speed at which the epidemic is spreading in its various viral and bacterial forms, it was said that soon no one could consider themselves safe anymore. Researchers still haven't been able to find an effective solution.



Bing.com / create, prompt: a volkswagen VAN parked in front of a house, Saugus, Boston.

Even more seriously, they discussed the risk of personnel abandoning their posts, afraid of getting infected themselves. Cases have already occurred in other states. It has been two weeks since everything started. Furthermore, since the first fail-breaking on November thirtieth, new breakdowns have occurred, like aftershocks or rather warnings. Sometimes it was the communications, sometimes the power. Even though it was never

for very long, it's very concerning. How is it possible that the second economic power in the world, after China, and perhaps still the first in terms of technology and military, is proving incapable of managing the crisis?

*Immersed in Saugus, I am Sarah, at five thirty in the afternoon.*

Uncle John just called to find out what we decided. He's worried about the weather. I told him we were almost decided, but there's still a problem with the batteries and tires, a lie to buy some time! On the other hand, Michael managed to get a second transmitter-receiver, and he brought the other car from Salem. We've already loaded spare batteries, canned food, biscuits, drinks, warm clothes, medications, duplicates of the archives extracted from the cloud, money, and weapons into the van. The only obstacle to a quick departure is the hospital. Ashley was called in early this morning, and it could be my turn tomorrow, for a continuous twenty-four hours because we're starting to run out of staff. Some of our colleagues have simply disappeared; when we asked about it, we were told it was just redeployment.

*I am Sarah, Saugus, Friday, December 8, 2034, it's 7 a.m.*

A call from Ashley. Her shift should be almost over. Anxious, she explains that there's a huge problem there. The security staff is overwhelmed; several infected patients forced their way through one of the secondary entrances. They crossed the morgue courtyard, taking advantage of the incinerator works. That area was less secure. The intrusion was detected too late for security forces to intervene. According to her, there are more than thirty attackers, if we can call them that. They have already destroyed the decontamination chamber on the first floor. Michael and Tyler heard everything beside me. This situation, spiraling out of control, has already been experienced by other institutions in the region in recent days, according to Michael. Ashley shows us the control screen. It's complete chaos; the on-duty staff is trying to barricade the access doors to the main corridors. We see people pushing, forced entries, overturned equipment.

Some excited attackers throw patients out of their beds. Then they take their place. Furious, they constantly activate the call bells, shouting, yelling, screaming. In the corridor on the second floor, a man falls violently to the ground, having seizures. Beside him, another kneels, crying and spasming while vomiting in large disgusting jets. Three attackers block an access door to the secondary corridors; they suffocate and collapse onto each other. The

staff doesn't know what to do anymore. The nursing assistants, nurses, doctors, technical and administrative personnel are retreating to the upper floors. They have already reached the second-to-last level, where I work, when suddenly the image becomes jerky. At the end of the corridor, we see the door explode, scattering shards of tempered glass everywhere. Ashley's words indicate that she and her colleagues are heading towards the elevator to reach the top floor, then the image freezes. All we hear is the shrill sound of the alarm. A moment later, just as Michael was about to leave, the communication is restored.



Bing.com / create, prompt : scene of chaos in the hospital, the patients infected with the virus have gone crazy. They destroy medical equipment. Doctors and nurses flee in the corridors, dramatic.

Michael :

- Ashley, we can hear you. Are you upstairs?
- Yes, but we're trapped.
- What's blocking you?
- The access to the security door leading to the rooftop terrace is locked, we can't go any further.
- But how is that possible?
- I don't know. When we went up, the security staff divided us into two groups. One went to the roof, the director, administrative staff, and a few doctors. They asked the others to wait. Right after that, they sealed off the stairwells and elevators.
- So, the lower floors are also locked? Please, Ashley, check. It's important.
- Wait... Yes, the access is also closed.
- So, we can't reach you from below.
- I don't know, they're already banging on the door to open it.
- Don't worry. Fire doors are sturdy. They can resist.

They are trapped. Michael asks again:

- Ashley, how many of you are there exactly?

– About fifteen nurses, ten lab assistants, seven to eight secretaries, and some doctors who couldn't reach the roof either.

– Can you see what's happening on the roof?

– Yes, the video system is working again, I'll relay it to you. I see the



landing platform: I recognize the hospital director, her two assistants carrying suitcases, the analysis supervisors also with metal briefcases, doctors, four security guards, and one nurse. A helicopter is approaching. They all took refuge behind the structure that houses the elevator system and the air conditioning outlet. On the machine, I clearly see a logo that I've never seen before, a sort of arch framing three letters arranged in a triangle, N O, E. The access door opens, and two men jump to the ground, wearing the same logo on their uniforms. The entire group boards, except for the four guards, and then the aircraft takes off.

Bing.com / create, prompt: northern suburbs of Boston, aerial view, on the roof of a hospital a helicopter prepares to evacuate employees, doctors, nurses, administrative staff, dramatic.

Ashley's voice again :

– Michael, I don't know what to do!

At the same moment, the surveillance camera installed on the roof sends images from another angle. The guards have just unlocked the access door. The captive personnel, including Ashley, enter the roof, and the guards close the door. Michael :

– Can you put one of the guards on the line for me?

Ashley finds one immediately. Michael introduces himself, promising a quick police intervention. In the meantime, they must act. The enraged attackers will probably try to force the door. Escaping through the external emergency staircase would be the best solution. I now have an overview of what's happening: the guards are conferring. They finally decide. Down below, gunshots can be heard, surely the intervention of the National Guard.

Ashley:

– Okay, we've reached an agreement! We're going down.

Michael:

– When you reach the bottom, don't panic, we're on our way. It'll take me less than ten minutes to pass through the checkpoint and join you.

– Can't you come directly?

– It won't be easy with our car, there are many checkpoints. It would be better to take a patrol vehicle. Just wait a little; if you stay together at the bottom of the stairs with the four guards, you'll be safe.

*At the bottom of the emergency staircase, 8:30 AM.*

When Michael arrives with a few colleagues and two patrol vehicles, the National Guard has already left the scene. There are scattered corpses on the road and sidewalk here and there. There's nothing more to be done. Once the evacuation is complete, the authorities prefer to redeploy security forces to another more sensitive location.

*Midday, I'm Sarah.*

We're all gathered at the house on Lincoln Avenue, except for Michael, who is on duty at the police station until midnight. To make matters worse, the weather is joining in. A severe cold spell is expected in the coming days, with snowstorms throughout the state. Nothing is stopping us from leaving as soon as Michael returns tonight. He's off duty tomorrow.

*Immersion, I'm Sarah, Saturday, December 9, 2034.*

It's six in the morning, still dark, and the neighbors are sleeping, barricaded in their homes. Tyler locks the garage door behind us. One last look at the house, I prefer not to wonder when I'll see it again. Reine and David are in the back of the VAN, while Tyler and I sit in the front. He's the one driving. Michael and Ashley are following us in the other car. Along the main avenues, there are a few automated shuttles running, but otherwise the streets and alleys are almost deserted. A cold rain, but not too heavy, begins to fall. The streetlights reflect eerily on the road, like something out of a thriller. The news reports yesterday's disturbances. In addition to what happened at Saint-John's Hospital, the mall where we usually go shopping

has been looted. Many neighborhoods are barricaded, and incivilities and thefts are becoming commonplace. The law enforcement response is firm but no longer sufficient to prevent criminal acts caused by panic. The government persists in its accusations: the recurring power outages are still attributed to the mysterious terrorists who triggered the biological attack. It can't be called a war since there's no identified aggressor. On social media, there are overlapping pieces of information. People are said to be abducted in various vehicles bearing the logo of an ark. Officially, they are presented as victims, but some voices claim it's a survival operation, populating a new Noah's Ark reserved for the privileged few who would escape the impending destruction of the planet.

*I 'm Sarah, only two to three hours into the journey.*

We're already on the southern outskirts of Portland. The geolocation service still works, as do the applications for autonomous shuttles. Traffic is flowing freely, but Michael deems it better to avoid the city. We take a detour to the north to reach the road to Bangor, still 129 miles away. Two and a half hours later, we arrive near the city. Same tactic, we circumvent it to the north and decide to make a first stop. So far, we've made faster progress than expected despite the light drizzle that keeps falling. Maybe we'll have the chance to arrive before the forecasted storm. The break is welcome because the kids were starting to find the journey long. They don't quite understand who this Uncle John is that we're hastily going on vacation to. We explain it to them once again. David remembers that we'll go fishing, at least. Reine is more skeptical. We also try to call on the radio receiver, but to no avail. It's true that this midday hour is poorly chosen, but it doesn't matter. Uncle John has been waiting for our call for several days. The rain has stopped, but the sky has taken on a light gray hue, the same as before the arrival of snow. The temperature is perfect for it, around freezing. A few melting flakes begin to fall gently. The weather forecast was accurate. We shouldn't delay too much.

*Around 1:30 PM.*

We hit the road again for another stretch of about sixty-five miles. A mix of cold rain and melting snow starts to blur the landscape. In Wesley, we turn right onto Road 192; we're now just twenty miles away from the ocean. This is when luck decides to abandon us! The batteries in the second car are dead. It was predictable. We bring out the second set, a few squeaks, but nothing, it doesn't work. There must be another problem. The wind suddenly picks up.

The temperature drops, and this time it's snowflakes that begin to swirl, not yet too dense, but judging by the sky, it won't be long before heavy snowfall sets in. Trying to fix it on the spot wouldn't be reasonable. After all, we're not far away. The best solution is to abandon the small car and keep only the VAN. We start unloading, placing bags on the roof rack and securing them with straps, then push the car into the ditch. Brave little automobile, it has done more than what it was designed for. We can continue. The vehicle is overloaded; Tyler and Michael are in the front, the latter at the wheel, and behind them, Ashley and I are squeezed in with the children, clothes, food, and medication on our laps.

The weather is getting seriously bad; gusts of snowy wind sweep the road, visibility is decreasing. The silhouettes of a few evergreen trees on the roadside only make the landscape more desolate and sinister. A strong wind sweeps across the road and begins to form snowdrifts. I pray that the old vehicle holds up. The progress becomes increasingly difficult, and we skid several times, reaching the edge of the road. Michael and Tyler take turns driving, and at times we even must stop because the windshield wiper system can no longer clear the frozen snow. It would be prudent to stop and wait for the storm to calm down a bit, but the heating will drain the batteries, and we're afraid we won't be able to restart. It's better to keep going, even if it's at only ten miles per hour. According to the odometer, we should arrive soon in the village just before the lake, where Uncle John does his shopping.

*5:30 PM.*

It's already almost dark when we arrive in Machias. It's a relief. In front of us, ghostly lights illuminate a gas station, a whitish island in the darkness. We can make out the charging stations and the tall lampposts covered in thick, heavy snow. The shop is closed. Tyler parks under the large canopy, and we'll wait there until morning. There's just enough charge left to keep us minimally warm. There's no other choice but to stay in the VAN. In any case, no one would take the risk of letting us in.

### **other lives.**

*Immersion: I'm Sarah, at Uncle John's, Perch Lake, Sunday, December 10, 2034, 8:30 AM.*

I'm awakened by the sound of a snowplow. It has already cleared the

access to the gas station, and now our vehicle is in the way. The driver, a giant with the appearance of a forester, must have alerted the police. I wake everyone up because indeed another vehicle is approaching, recognizable by the star and the county crest. The sheriff gets out, approaches cautiously, and peeks inside through the front window; Tyler has just opened it. The sight of the children seems to reassure him somewhat, and he looks at me insistently. Michael and Tyler instinctively place their hands on the dashboard. Ashley and I raise ours as well.



Bing.com / create, prompt : a snowstorm in Machias, Maine, a gas station lit by streetlights.

– Open up!

I slide open the large side door.

– Where are you going?

The tone is rather aggressive. Michael explains that we're coming from Boston.

– Documents, everyone!

We step out. With a colleague, he begins to check each one of them with his control device, verifying identities, fingerprints, and iris. Then he takes interest in the vehicle. He moves to the front of the VAN, scrapes the license plate with the tip of his boot to remove the snow.

– Well, well, the car isn't young, my father had one like that.

He puts on a serious face.

– You know you're not supposed to drive with that anymore? You're breaking the law!



Suddenly, he looks straight into my eyes and bursts out laughing.

– Sarah, little Sarah!

I don't understand.

– I'm not mistaken, you're John's niece, right? I'm Bill. Of course, you wouldn't remember me, you were just a little girl. Back then, I used to go hunting with him. I would come to the lake house sometimes, before your aunt Eileen's disappearance, a tough blow for John. You're going to his place, right ?

– Yes, he's waiting for us.

I introduce everyone. Michael vaguely remembers him. As for Tyler, he examines him as if to make sure I made a good choice, the deep America! Then he continues :

– John should have told me. Around here, we're cautious. No chance of catching those damn things. I'll accompany you at least until we reach the outskirts of town. But first, we need to recharge the batteries.

– Of course, that'll give the snowplow some time to start clearing the road. The snow fell heavily last night, and for now, the road is closed. I'll accompany you to the station.

We leave Tyler and Michael trying to reach Uncle John once again, it's the right time. With Ashley and the kids, we follow Bill. He calls the station and gives instructions to notify Uncle John in case Michael and Tyler can't reach him. They also have a radio receiver.

Hot drinks are welcome for David and Reine. Behind the counter, a firearm is placed prominently. Safety is no joking matter here!

*Immersed: I am Sarah, midday.*

Bill left us at the exit of the small town after I warmly thanked him. He even defied the pandemic by kissing me on the cheek. The snowplow is supposed to have cleared a path to the turnoff towards the lake. Uncle John should be waiting for us there. We arrive. Despite the snowy coat, the place feels familiar to me. At the intersection, where the snowplow stopped, a very

old model of a pickup truck with a cabin and a snowplow blade attached to the front is parked. Uncle John gets out of it and waves to us. His attire is from another era: a thick brown leather parka lined with sheepskin, an ancient cap extended on the sides to protect the ears, giving him a cocker spaniel-like appearance. Hugs. Uncle John turns around and invites us to follow him without delay because it's starting to snow again. We better reach the lake right away. Reine and David get into the pickup truck's cabin, and Michael drives. There are a few slides on the packed snow of the narrow path, but without consequences; everything pushed to the sides forms a protective barrier several feet high and just as wide, so there's no risk of tipping into the ditch. We are now deep in the forest, with a mix of pine trees and deciduous trees, maples and birches. Around a bend, the lake finally appears; a wooden sign marked with Branded with fire, it says Yellowtree.

From there, a wider path leads to an open space. On the side, I recognize the little sugar shack where Aunt Eileen used to prepare maple syrup. In my childhood, Ben and I would go and collect the small buckets filled with sap hanging from the trees. In the background on the left, a shed extends from the main house, overlooking the lake, and on the right, a little further back, an awning extends from the vacation cottage, originally built to provide some



rental income. Both structures are supported by local stone foundations that rise to four feet above the ground. Above and at the back, it's wood covered with horizontally painted light gray boards. Uncle John signals us to park under the awning. There's enough space for our vehicle despite all the miscellaneous objects cluttering the place: an old chainsaw, spare parts on shelves, a workbench, what looks like a fish smoker next to an old car bucket seat, a stack of logs, enough to last an entire winter. He parked his vehicle along the shed under a rudimentary shelter.

Bing.com / create, prompt : winter. An old wooden house in the Maine. A terrace with a view on the nearby frozen lake. The shore is a dozen feet away. The bottom of the lake joins the clouds. A breathtakingly beautiful landscape. Snow weather.

The kids need to stretch their legs. They're very excited, the scent of adventure! Everything around them, they've already seen it, but in video

games. We follow Uncle John through the covered wooden passage that runs along the left side of the first building. It reflects the level of the terrain, slightly rises at the level of a pile of large stones, the same ones used for the foundation of the houses and chimneys. At the end, we reach the large veranda of the main cottage. It consists of two staggered levels. Inside, it's spacious and warm. That's where Uncle John lives during the long winter days. Upstairs, from the windows, there's a beautiful view of the lake. There are two bedrooms, one that I'll share with Tyler, and the other belongs to Uncle John. Michael, Ashley, and the kids will settle in the second cottage. I remember it being quite cold, but Uncle John has also added a veranda there, facing the lake, painted in brown, red like the wooden facade facing the lake, except for the window frames painted in white.

For the most part, the place hasn't changed much, except for the solar panels installed here and there. Under a foot-deep layer of snow, I can make out our old play area between the two verandas and the lake; it's marked by the railings of the stairs leading to it. The water is gray, nestled in a frame of snow-covered trees. Uncle John lets us settle in; we're all supposed to meet up later in the main veranda. Immersed: I am Sarah, Lac aux Perches, life at Uncle John's, Monday, December 11, 2034. The storm seems to have settled in for good. The entire region is covered in snow, and according to the official weather forecast, it could last for another week. The roads are impassable, and the edges of the lake have started to freeze, so we only venture out in the immediate vicinity of the cottages.

Fortunately, the houses are well-heated. David oversees the firewood; he can imagine himself living here, hunting and fishing with Uncle John. In the end, we decided to park the VAN inside the shed. It contains a wealth of resources, abundant mechanical parts, batteries, tires, old but well-greased machining machines, drills, lathes, grinders, saws, a small workshop, and fishing equipment. There's a resin boat mounted on a two-wheeled cart, reels and fishing rods, bait boxes, lures, flies, and hooks. There's also an old Harley Davidson motorcycle, a model from the early seventies.

Of course, life here is completely different. For food, Uncle John mainly consumes frozen and canned products, game that can no longer be found in Boston; Reine refuses to eat it in advance. But there are also some good aspects. This morning, for breakfast, Uncle John made pancakes. No one makes them from scratch anymore in America; there was homemade maple syrup, blueberry jam, and Virginia pecan pumpkin jam, bought from the village, scrambled eggs, bacon, and wild boar sausages. The bread is

homemade, prepared with old-fashioned yeast. In the dishes planned for the coming days, there's venison, wild duck, and fortunately for Reine, fish, smoked or raw frozen white perch, and all sorts of foods that I had forgotten the taste of for a long time and that I'm looking forward to rediscovering. Overall, for a first day, things are going well. The kids are starting to find their way around. After all, it's not a useless experience for them.

Uncle John alone is a slice of history. He lives the way people lived before the year 2000, during the time of his grandparents. Being able to heat oneself by the wood fire near a fireplace is magical for David and Reine, especially with firewood cut from the forest by Uncle John. And then there's Taiga, the gray and white husky dog with blue eyes quickly became their playmate. Of course, we'll have to give up the conveniences of everyday life, like the hairdressing robot found in almost every American bathroom, ensuring impeccable hair. Reine already misses it; she liked trying out the countless styling options like other girls her age. Fortunately, there's an old hair straightener and curler in the bathroom of the second cottage, but no shampoo, only old-fashioned soap bars! The bedding is also surprising. Uncle John has taken out all sorts of towels, pillowcases, tablecloths, and old embroidered sheets from his trunks. As for the mattresses, they're made of simple synthetic foam.

*Tuesday, December 12, 2034.*

Two days were enough for us to settle into our new life. We have made it a habit to gather in the large veranda. The outer ledge is covered in an ice garland, a true frieze made up of a succession of small stalactites and water droplets trapped in ice, glistening in the morning sun; the warmth of the house and the sunlight have created it. Outside, Uncle John's Adirondack chair is covered in frost; next to it, a small table, a simple log cut from a tree trunk with a plate on top containing bread and bacon; it's for the chickadees when they venture out of their nests. In the distance, the lake merges into a sort of white mist with snow-laden trees.

In a corner of the veranda are Aunt Eileen's books: gardening treatises, works on the fauna and flora of Maine, a holy Bible, detective novels, and some photo albums. I browse through them, snapshots of Ben, Michael, and me playing in the forest near the second cabin, which was still under construction, further away on a boat with fishing rods, Ben at around ten or twelve years old, proud of catching a fish. Uncle John has his own library on the upper level of the veranda next to the radio corner, books on fishing,

weather, technical radio transmission treatises, and spare parts catalogs. Most of the time, he listens to the news, leaning over his set; the rest of the time, when he's not cooking, he clears snow or tinkers in the shed.

The internet still works but intermittently. Michael and Tyler are mostly busy searching for information there. They received confirmation of the ban on leaving cities without special authorization. As for Ben, no news, but as soon as we arrived here, Uncle John informed him of our presence.

*I'm Sarah, at Uncle John's, Wednesday, December 13, 2034.*

It's a day that starts like any other, a little after five in the morning. We are all still in bed, except, of course, Uncle John, when the alarms on our devices start ringing. President Warren Koln announces in a laconic yet grave tone that the United States of America has just entered war. He informs us that China is attacking the Western world in a crazy genocidal and suicidal project. A massive nuclear attack is underway, following the biological aggression and cyber-attacks. The terrorist theory is forgotten! The missile defense shields have been activated and should protect the territory. The order to engage all space, air, naval, and ground assets has been given for total war. As the world's greatest military power, the USA will emerge victorious from the conflict, there is no doubt about that. The army, police, and National Guard are with the population. All offices, schools, universities, public places, shopping centers must be evacuated as quickly as possible. We must remain calm and composed, and for those who can, take refuge in underground shelters. God save America.

Between repetitions of the looping speech, we learn that President Zhen Li has just finished a similar address intended for his fellow countrymen. He confirms that ballistic missiles are en route to major Western countries and that it is indeed a global nuclear attack. The only difference is that the Americans would be solely responsible for initiating hostilities. The Chinese action only preceded by a few seconds the massive attack that the USA was about to unleash, and history will hold them responsible for the nuclear holocaust that is unfolding. A surprising justification!

We rush to the veranda. Ben was right, as always! Uncle John stands there like a statue, remembering the atrocities, his years of military service in Southeast Asia. One must have never experienced war and its horrors to dare to initiate it. David asks questions, expresses his opinion, the missile defense shield, he knows, we are not at risk, he still thinks it's a game. God will save America, as the president promises.

*Time passes.*

We learn that a bomb has just exploded above Shanghai. Other missiles, Chinese this time, reach their targets: London, Paris, Rome, Prague, Berlin, Athens, and other defenseless capitals of old Europe. The intention to wipe out the sources of the West is evident. As if by magic, images arrive almost immediately, showing the ruins of iconic monuments, the Vatican and the Colosseum in Rome pulverized, as well as the Reichstag in Berlin and the Acropolis in Athens, the Parliament in London and Westminster; the Eiffel Tower is in a grotesque position, lying across the Seine. At six twenty minutes, the tragedy strikes: the first warhead hits American soil. Other impacts follow.

A world of evil! When my family came to America, it was to escape Nazi persecution, two generations spared, and now a cataclysm. If God watches over the world, why does He allow this to happen? To punish men for what fault? After the fall of the Soviet Union, Americans were almost the masters of the world. Why did they allow China to arm itself like this? Greed, capital, evil, the need to always enrich themselves further. To sell sugary drinks, hamburgers, cars, phones, to have cheaper labor and make more money from products resold in the West, Europe, and North America offered China an opportunity to catch up at too low a cost.



Bing .com/ images / create prompt : apocalypse, Big Ben, Eiffel Tower, Colosseum and Brandenburg Gate broken into pieces, in front of a sea of fire, in the background nuclear mushrooms.

No one cared about what it could do later with its newfound power. By transferring all the knowledge of the West in record time, acquired at the cost of so much effort, deprivation, and suffering, we opened Pandora's box. Centuries earlier, Asia had done everything to keep the secrets of silk. Stupidity, encouragement to let oneself be crushed, dominated, all because of a few greedy capitalists and narcissistic and incompetent politicians concerned only with power.

*End of the day*

The storm has resumed. Snow, wind, and now fog. We can't even see the bottom of the lake anymore. Occasionally, the communication networks go

down, there's no more phone or internet; then it starts again as if emergency structures were taking over to disseminate news clearly from American military sources. At other times, we receive obviously dubious information, psychological warfare, propaganda, all intended to terrify. Some videos are cleverly edited; they show clouds described as radioactive forming precisely above columns of refugees, looting, street fights. In the unaffected areas, they show survivors trying in vain to build shelters against radiation, others barricading themselves and shooting at foreigners on sight. These hellish visions contrast with the official American images that attempt to downplay the situation. Uncle John prefers to follow the conflict's evolution on his amateur radio network. He's constantly listening, glued to his station; an additional speaker relays the conversations to us. Local information circulates from amateur radio operator to amateur radio operator, direct, without any filtering or censorship. That's how we learn that the president had left the White House well before the nuclear attack, and that privileged American citizens would have been evacuated in large numbers to arches presented as survival centers; that's a bad sign!

*Wednesday, December 13, 2034, seven o'clock in the evening.*

This time, it's a cryptic message from Ben that Uncle John picks up: from Ben to John and Sarah from Yellowtree :

Prepare for an imminent encounter, I repeat, an imminent encounter.

Uncle John urges us to pack a few things. In the meantime, it's best to stay together, sleep here in the veranda. The night is here, and if something is going to happen, it won't be before tomorrow morning. The storm should have calmed down by then, but we need to be prepared. Nine o'clock in the evening. We listen to the president's second address. It follows the missile strikes. Ashley put David and Reine to bed. Impossible to sleep.

*Thursday, December 14, 2034, nine o'clock in the morning.*

This time, it's a complete blackout. We're not receiving anything here; all communication networks seem to have been cut since midnight. The weather is beautiful, the sky is blue. A thick layer of fresh snow covers everything. From the veranda steps to the lake, it's just a gentle, continuous slope. Uncle John is still glued to his radio station; he hasn't started clearing the snow yet, simply forgotten! Tyler is taking care of it with David. In the radio corner, a

control screen displays views of Yellowtree's surroundings. Uncle John doesn't have a drone but surveillance cameras. Six of them cover the buildings from all angles, two in the front, facing the lake, two in the back



with overlapping angles at the level of the access road, and finally two in lateral positions. In addition to this setup, there are two other long-distance cameras placed at the end of the lake, one on the left side and one on the right; their zoom can be remote-controlled. The images from the eight lenses are processed in a small box located below the control screen. The software can distinguish between a simple bird flying or a snow-laden branch breaking, and the intrusion of a stray animal or a prowler. The children are eating when a sound triggers, shrill, choppy.

Bing.com / create, left prompt : commandos equipped for the far north, heavily armed, drive white snowmobiles, we are at the end of a frozen lake, forest and snow, wide view.

Uncle John removes his headphones and scrutinizes the screen. It's one of the lake cameras that triggered the alert. He zooms in, replays the initial images that triggered the alert. The amplified, filtered, and processed signal resembles the sound of helicopter blades. This time, there's a corresponding image. A large white craft has just landed at the end of the lake in a small clearing near the shore. The settings are in place. It's live. The landing zone has been cleared of snow, except for a small amount. Next to the open hatch is a vehicle that looks like a very large snowmobile. Several men in white combat suits are busy. The children are very excited; it reminds them of the Star Wars saga. In fact, they are just regular army special forces operating in cold environments. Some men are keeping watch, while others are preparing to leave. The craft starts gliding on the snow, skillfully avoiding the trees. It follows the right bank and comes in our direction. Uncle John follows them with his binoculars. According to him, it's one of those patrols that operate during winter around Ben's base, information from amateur radio operators, of course.

The vehicle has just made a final big turn, probably to park behind the second chalet. The turbine noise has stopped. We wait. A slight humming, it's a drone flying close to the ground. It circles the walls of the chalet,



approaches, and drops a box on the snow, a few feet from the entrance; then it immediately flies away. Uncle John goes out to retrieve it, opens it; it's just a blinking terminal. Uncle John activates it, and Ben's voice comes through.

– Uncle John, it's me, Ben. You have nothing to fear; we're here to pick you up and take you to safety as planned. You can come out and follow the commandos; they'll lead you to your destination.

*I am Joy, the second day of the journey, Underground, Project Nemo, experiment time: 1 hour 55 minutes. Immersion: I am Sarah, Ydunéa, at home in the village of Cipeia, early February 2035.*

I think back to our first weeks in Ydunéa and also to that December Thursday when we left Uncle John. We returned two by two from the chalet to the helicopter on the snowmobile. There was nothing to be done; he stubbornly refused to join us. Starting a new life in the unknown, he said it wasn't for him. So we left him, promising each other that we would stay in touch. Ydunéa, the mysterious city where Ben brought us, wasn't very far for Uncle John, after all. David and Reine didn't make any objections; they were excited at the sight of the vehicles and the soldiers. In just a few weeks, they would transition from the modern life of average Americans in 2034 to that of their ancestors, only to be suddenly propelled into the future.

*The arrival, I remember it.*

Of this new world, I first saw through the windows what looked like large glass structures, dozens of them, like waves oriented perpendicular to the ocean. The military accompanied us to the west entrance, the gateway to the hinterland. Ben was there to welcome us, accompanied by a friend, Paula. I felt a little ashamed, the shame that all refugees feel when they have nothing but a meager baggage and fear the moment when they will see others for the first time, those who will accept them into their community.

Looking back, I must admit that I discovered an unsuspected world, a true ideal city, a promised land where the pursuit of knowledge, wisdom, and happiness is constant. Those who populate it form a community far removed from all the caricatures of the scientific world, those malicious images revealing the hatred of the ignorant towards holders of true knowledge. Western science fiction writers have often embraced easy clichés, imaginary and caricatured descriptions of science worlds made fun of.

Brave New World: a diabolical humanity creates categories of clones specific to each activity. We are still in the worn-out pattern of a society hierarchized according to subordinate or noble tasks. Men are classified at birth as superior alphas, average betas, slave gammas, or even soldier deltas. The scientific society is reduced to a hive in which the man of the future serves a single functionality. On the contrary, the inhabitants of Ydunea are not confined to any single task. No incubator, no programming, no conditioning for a social destiny. No categories or castes, but a unique individual. Not a sad and uniform world dominated by mad scientists who would perform unhealthy genetic manipulations to create monsters. And certainly not a world where everyone is spied on, constantly monitored to prevent deviation, with punishments as consequences.

Upon entering the city, the temperature had suddenly become mild. Under the large communicating glass roofs, a first quarter appeared to me with two-story buildings in the shape of polyhedra, immersed in greenery. Cipawat was the research and medicine production area of the major Ydutech company. Urban shuttles operated on demand, and logistics vans circulated here and there.

We then took the underground Levita shuttle, which provides transportation perpendicular to the ocean axis to reach the second pole, the village of Cipeia. It was a contrast and a pleasant surprise: it resembled a beautiful traditional village in the Boston or Portland hinterland. On-site, one of Paula's friends, Vera, took charge of us and accompanied us to our accommodations. Along the way, she showed us around the village. Nature was omnipresent, with conifers, maples, beeches, and birches typical of the region. No signs, cables, or power lines, nor any other kind of signage, cluttered the landscape. I remember the town hall. Its clock showed only fifteen o'clock; everything had happened so quickly! Just that morning, we were still at Uncle John's.

The shuttles then parked on a street lined with villas, each surrounded by a garden, without walls or separations. The two adjacent houses that were reserved for us differed only in their exterior decoration; inside, they were arranged almost identically, and the food conservators were full. I let Ashley and Michael choose with the children which house they preferred to occupy. Vera provided some explanations about the automation systems, two temporary terminals to reach her, Ben, and Paula, and then she left us, completely stunned.

*I am Joy, the Machine allows me to share some thoughts from Sarah, a little after her arrival in Ydunea.*

A certain idea of happiness: from the first days, we understood how enjoyable life would be. We regained the daily conveniences we had in Boston before our escape, and even more. Reine and David resumed school; since it's nearby, they can walk there. At home, smart speakers answer all our questions. They also make it easy to order everything we need from the Ydunea logistics center. Additionally, there is an android that does the cleaning, cooking, and maintains the garden upon request. Reine found some of its reactions a bit strange at first, but Vera explained that it takes a little patience for it to adapt to the family.

Among the provisions, we did not find any meat, but that was not surprising. Here, we eat vegetables and fruits grown in laboratory farms, as well as various protein-rich foods produced in complex facilities. I discovered unknown flavors. Vera explained to me that engineers create concentrated flavors through cryo-distillation and then combine them to achieve particularly appreciated tastes.

The day after our arrival, Paula returned accompanied by Vera. We went to the shops, enrolled the children in school, went to the town hall to register as new residents. We also visited the Meetech hall, where we were issued the pass, which is the key to everything here. As for me, I opted for a ring. It serves as a means of payment, but I don't know if we can still use that word here; in fact, it debits from a personal account. If there is no money, it doesn't mean you cannot have any. Most people, before the catastrophe, still had an account with an online bank, either in US dollars or in cryptocurrency.

Ashley and I quickly found occupations. She works at the Cipeia healthcare center, right next to the town hall, where primary care and basic diagnostics are provided. As for me, I found a position at Amipi, the foundation clinic located on the peninsula between Cipawat and Cipeia. Tyler teaches; he spends his time between the village school and the Meetech hall, where he found state-of-the-art training methods. Only Michael hasn't really found a job he likes yet. They offered him to assist the sheriff in the meantime, but most of the time there's nothing to do because people avoid uncivil behavior; they prefer to settle conflicts among themselves, directly or with the help of a mediator.

Our integration was so fast that I will remain amazed for a long time. From the moment we arrived, the Ydunians treated us as full-fledged residents, without any pity, expectation of gratitude, or pity towards miserable

survivors. No one contested the decision to welcome us into the city, probably with Ben's support, but I don't know who exactly. It's true that the residents have other worries even though they try not to show it, you can see that they are concerned. The large membranes remain closed. They pretend it's because of winter, but it's to protect themselves from radioactive clouds.

At the end of the year, we were able to watch the president's New Year's address to the nation, a faint hope! And it was in early January that I participated for the first time in the Y\_betterworld think tank at the Meetech Hall. That's where I began to grasp the key to the residents' personalities.

All the participants are convinced that true faith is faith in humanity, in life, despite the dire situation. They frequently profess this in their discussions. I also understood that, in general, there is great mutual respect among them all. With the events that unfolded, wealth no longer means anything, of course. Survival is now the priority, and everyone stands together. Paula explained to me that just before the catastrophe, it already felt like there were no longer any poor or rich in Ydunea. No one seemed particularly concerned about their own wealth or the future; everyone knew that the community's support would always be unwavering.

There's no need to establish a network aimed at excluding a portion of the community, as was so prevalent in the West before. It's true that in the first few weeks, I didn't sense any class consciousness, not even from Ray, the director of Ydutech, or Claire, the foundation's director. Yet I imagine they must have been very wealthy before the Western world collapsed. Overall, the level of satisfaction among the residents is high. The Ydunians are convinced that they have the best education for the young and the best healthcare for all, equal and free, which wasn't generally the case in America before the cataclysm.

All these factors contribute to reinforcing their belief that they belong to an exceptional community. Their mentality is shaped by excellence and not diluted in the dubious multicultural environment that had become the norm in the decline of the West. A certain idea of happiness...

How do they defend themselves without an army? It's an enigma to me. Ben refuses to tell me, but I understood that there is a very close link with the still operational US armed forces.

*I am Joy, day 2 of the journey, experience time: 1 hour 57 minutes, Northeast USA, Ydunea, Underground, Ocean Dome, Project Nemo, April 20, 2035.*

I am with Krawn, out of immersion.

Krawn:

– You must be starting to get tired, right?

– Everything's fine, don't worry. But with Sarah's arrival in Ydunea, the journey is almost over, I suppose?

– Not quite, there's still one significant step left. I look at him, he is pensive.

– We must go back one last time to Luc's past. I suddenly have a strange premonition, as if something important happened. I can't see Aunt Jill anymore. Krawn only tells me that she left the system on automatic mode.

~

## **METAMORPHOSIS**

LUC

### **the Wise**

town hall

*Immersion: I am Joy. The Machine sent me to the town hall of Cipeia. It is Wednesday, December 4, 2024.*

The large meeting room is entirely made of wood, with exposed beams and a coffered ceiling. The dark-paneled walls depict scenes from the Native American past. I am there like a ghost. Around the table, I see a few familiar faces: Paula and Vera, Uncle Luc, Ben and Aunt Jill, and others whom I don't particularly know. Krawn comments:

– We are in a time when Ydutech is still located in Boston. The people you see here without recognizing them are mostly researchers, engineers, technicians, or other staff working at the foundation, along with some of their family members. They all live in Cipeia. Every last Friday of the month, Paula leads the Y\_betterworld think tank, just as she did before in Boston." At that time, she oversaw the recruitment in Ydutech. She was there when Ray recruited Jill and Luc, and later Claire, your mother. Among her other responsibilities were technology monitoring and continuing education. Paula was fully committed to your father's ideas. When he offered her the opportunity to take care of the Meetech hall dedicated to knowledge and meetings, a virtual museum, training and reflection facility. She immediately accepted.

What did they discuss in this think tank? Oh, nothing extraordinary! In general, and like everywhere in the SciTech field at that time, we pondered how to best address the various challenges posed by technology: how to manage relationships with robots, how to occupy humans when all menial tasks would be delegated to machines, how to restrain artificial intelligence. We also talked about singularity and transhumanism. We addressed ethical questions, discussed how scientists were perceived, their relationships with the political world, how to leverage governance, how to change mindsets in science cities, and how to set an example for the rest of society without scaring it.

*The meeting begins.*

The clock on the wall shows four o'clock. Everyone is seated. Paula presides over the meeting. This very morning, like every other school day, Justin and I were with her in the neighboring building surrounded by maple, pine, and birch trees. At twelve years old, I am the youngest in my class and Paula's favorite, even though she tries to hide it. She doesn't have any children. Maybe she's too demanding to find a companion, or perhaps the responsibilities entrusted to her absorb all her time. I don't know, but there's something that connects us, a bond of complicity. In front of Paula, on the table, there is a small stack of booklets with a brown cover titled 'Imago,' with 'Y\_betterworld' and today's date in the bottom right corner. She opens the session:

– Good morning and welcome, especially to those joining us for the first time."

She takes the booklets and passes them around; everyone takes one.

– Vera, Luc, and I have attempted to synthesize the essence of your reflections from recent years, distilling a set of cardinal principles that should guide the conduct and behavior of those aspiring to live wisely, a sort of ideal. You can read it, and at the next meeting, we can discuss it again, ensuring that the text accurately reflects your thoughts. We can then adopt it, at least in a provisional form."

In just a few seconds, the Machine transferred all the content to my memory. The objective stated in the preface is indeed ambitious: to create a wiser society and lead humans toward an ideal behavior, the Imago. A few articles flash through my mind in fast-reading mode:

**animal heritage.**

One must learn to accept what one is, an animal. Man must recognize his animal heritage, accept his true human condition with all its limitations. Human behavior is merely an extension of the behavior of other DNA-based species, complexified by an increased degree of consciousness. Man is not a fallen god, which does not imply giving up, quite the contrary. One must not be afraid of the future, not be intimidated by the grandeur of Nature, believe in the future of mankind through science, affirm that it is a source of joy and happiness while religion is ultimately nothing but humiliation and despair.

We must loudly proclaim that humans will one day liberate themselves from suffering and anxiety, from all the fears that have made history a series of disasters and misfortunes. Too many people in the West adhere to the stupid and false exaggerated anthropocentric idea that the human species, given its current abilities to modify its environment, could escape the natural law of selection. They excessively protect the weakest regardless of the circumstances, favor symbiosis and mutual aid, whereas it is competition, rivalry, and excellence that will save the species.

### **Good and Evil.**

The question of good and evil must be approached calmly: animal heritage, fear is the true source of all human actions, their main motivation. By eliminating fear, man frees himself from evil. The duality of good and evil is inseparable in human consciousness; man is neither good nor evil but both at the same time, to varying degrees, and it is only a matter of perspective. He can act in evil to defend himself against strangers, in good to protect his own. What is good for the predator can also be evil for the prey. Empathy associated with good is a means of group protection, a component of solidarity, often a moral principle.

*Excerpt from 'Little scraps of paper' written by Theo in Pointe Rouge titled 'Chimpanzees and Bonobos'.*

When a foreign clan invades a territory already occupied by monkeys, there are two options: either be aggressive and drive them away; thus, one can preserve their resources: fruit-bearing trees, termite mounds, small game, or decide to welcome the invaders, fornicate with them, and share a portion of the resources with them. Chimpanzees choose the first option, and bonobos choose the second. The behavior of bonobos does not put the clan in danger because, in their natural environment, there is enough food for everyone. Under these conditions, mutual aid can be applied extensively, beyond the boundaries of the group alone. However, for the same species, the rule is not always unchanging. It can be led to adopt one or the other of the strategies, depending on the circumstances. In case of overpopulation, a group that was initially very welcoming must change its strategy, otherwise, the resources would become insufficient; welcoming foreigners would inevitably lead to decline. Unconditional mutual aid is a foolish strategy. Yet, many people in Western countries are unaware of this reality, influenced as they are by Christian morality. The human species cannot escape the rule. Homo Sapiens, narcissistic, continues to believe that it can indefinitely transform the environment, deplete natural resources. It has already compromised, endangered the balance of nature. One day, it will have to pay the price. Homo is far from being a completed, successful experiment. It is just one among other experiments conceived by life. Nothing can justify humans destroying the blue planet while disregarding other living beings. Contrary to the claims of revealed religions, evolution did not create nature for man. Behaving like bonobos is no longer



reasonable in 2019, and the attitude inherited from Christianity that would have us help everyone unconditionally and continue to reproduce indefinitely is suicidal. Whether through an apocalyptic conflict, a pandemic, or a large-scale ecological disaster, nature will remedy this human madness. The history of evolution itself is a long succession of collaborative and competitive phases. Depending on the cases, cooperation or conflict are chosen as survival or development strategies. When a species is in danger, only selection can save it. The France of 2019 behaves like bonobos.

### *continuation*

#### **animal heritage, continuation.**

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#### **knowing how to control one's emotions:**

We must learn to react with moderation, not to attach more importance than necessary to the satisfaction of his primal senses, his animal instincts, especially sexuality. Man must stop equating the real and the imagined, beware of the tricks played by the imaginative creator of dreams and illusions, abandon the stupid beliefs of revealed religions. He must rebuild his way of life based on ethics and natural morality. Over two centuries have been lost since the first attempt of the Enlightenment in the eighteenth century. It is now time to pray for man rather than praying for an imaginary god.

#### **true knowledge.**

Every man should possess in-depth knowledge of true sciences, the laws governing the visible universe, physics and chemistry, mathematical keys, the evolution of DNA life, and other major domains. One who does not respect these

conditions cannot be a Sage and cannot guide a society correctly. The progress of knowledge is an essential concern of the Imago, more knowledge, more consciousness, more responsibility. Man must know how to recognize the wonderful adventure of life, to be in awe of the creativity and beauty of nature, to be aware that all forms of life, from the humblest to the most complex, aspire to realize, prolong, and reproduce themselves. He must respect and protect the environment essential to their development. Nature is a whole. Man must live in harmony with it, recognize differences and interdependencies, accept diversity, reject racism without penalizing excellence. Scientists are not so different from artists. We must stop opposing them.

A good understanding of the past is fundamental: to know where one must go, man must know where he comes from. We must forget the distorted history seen through the prism of nations, peoples, cultures, or beliefs. The only true history of humanity is that of human progress, the advancement of scientific discoveries, and not the wars committed in the old world in the name of absurd ideas, greed, ambition, or religious intolerance. We must be aware that the last two religions known as the "religions of the book" or revealed religions have attempted to impose a single thought on all of humanity, with destructive results despite a few peaceful verses. It is necessary to definitively reject the creation myths discredited by the mere continuity of these stories, each inspired by the previous one. Moses, Jesus, or Mohammed only drew inspiration from the models of Mesopotamia or Egypt to build their dreams. Man must rewrite history from the perspective of motivations, explaining to the youth the development of good and evil so that they can draw their own lessons and renounce war forever.

### **happiness can be of this world.**

It is up to man to persevere to achieve it. Nature has given him the means. There are too many despairing people in the West. The one who, by inventing the word happiness, thought only of an ideal, a utopia, well, he was mistaken. Happiness, as the possibility of fully utilizing all one's physical and mental capacities, is within reach. Happiness, knowledge, and wisdom are linked. Intelligence and consciousness can unite to achieve harmony. To achieve happiness, the first condition is to drastically reduce the number of human beings, the only way to protect the natural environment of the blue planet.

There is an explanation for everything that man perceives, nothing is in vain. Beyond the detours that sometimes lead to dead ends, the transformations of nature that we perceive only reflect the great reorganization of the universe, aiming to restore the initial balance of the 'Whole,' the 'Matrix of All Things.' Man must accompany this grand return with all the means evolution has given him. Therefore, he must push the boundaries of human experience, not just observe and suffer, but take hold of the destiny of the species, become an actor and no longer a spectator of evolution, imagine, define, and conceive his descendants in a unified or multifaceted manner. The transcended man will accept opening a new chapter in the history of the

human species. He will reject demonization by those still in the dark. He will not fear singularity, transhumanism, or robots, cyborgs, humanoids, animaloids, vivoïds, or roboïds. He will not fear the convergence of inert substrates and DNA, which should lead to superintelligence and super consciousness.

For Homo, it is a formidable challenge, even more exciting than the conquest of the stars. The new man must be a whole. He will reject the functional separations of ancient societies between workers, decision-makers, or thinkers. He will no longer allow himself to be confined to the role of a particular social category or caste, priest, warrior, or farmer. The social organization of the bee, with its workers, soldiers, and



queen, is not a model for man. Socialization may be a necessity for insects; it will no longer be necessary for the hyperconscious new man. He will think, decide, and execute all at once with the help of machines. Assured of the support of the group, he will no longer need to establish hierarchies or exclusionary networks; he can act with complete transparency. Property and money, once abolished, will no longer play any role. The future man will not need others. Socialization is

only a means to escape one's own inner self; it is for the weak. That is why monks choose isolation to seek refuge in meditation. One must be able to look at one's own image, one's own reflection, alone. Man dies as he is born, in solitude.

Bing.com / create, prompt : blue dawn, on the way to heaven, ethereal style.

### **simplicity.**

The apparent complexity of nature masks reality. The transformations of nature obey only a few rules, applied to very large sets of elements. Fractals and chaos are examples of this. The keys to understanding all phenomena observed by man, whether they belong to physics, chemistry, biology, or what is called the spiritual domain, consciousness, are mathematical in nature. The return of each universe to the Whole, the Matrix of all things, follows a principle of simplicity. It happens by taking the easiest path. In his daily life, the transformed man must adopt a simple behavior.

Paula now changes the subject:

– Among the other items on the agenda is the upcoming opening of the Meetech Hall. This is very good news for all of us. The construction work is almost complete, and in the future, we will gather there if you agree. The town hall's meeting room will then be restored to its original function. The

population of Ydunea is coming soon since most of Ydutech's activities should be relocated here over the next two years, 2025 and 2026. Each and every one of us can witness the rapid progress of the construction sites day after day. Soon, the school classes will be fuller, and a high school curriculum will be introduced. A higher education program in life sciences is already being considered. Many of us will reunite with friends; we will return to the normalcy of a small American town. It is precisely this aspect that worries some of you. How can we keep the best and avoid all the usual pitfalls and problems like incivility, drugs, and dubious businesses? You must keep in mind that Ydunea, Ydutech, Cipawat, and Cipeia are separate from the foundation.

The village of Cipeia has the same legal and administrative status as the other villages in the county. People who are not involved in our life project could come and settle here, such as financiers, insurers, bankers, developers, entrepreneurs of all kinds, restaurants, fitness clubs, shooting clubs, hunting or fishing clubs. We cannot oppose them, and gradually, Ydunea would grow to resemble all the other small towns in America. Therefore, our community has planned safeguards: in the village center, it will be possible to prevent unwanted business establishments since Ydutech owns most of the properties. On the outskirts, near Ydunea, it will be more challenging. Authorizations could be granted by the county, although they will inevitably be limited; many areas are protected natural spaces. Regarding cohesion and respect for our way of life, it seems essential to involve as many newly settled families as possible from the moment they arrive. The think tank may seem unappealing to some, so we could propose expanding our activities. Meetech could be a good platform. If some of us could get involved in this action, it would be great. I now propose that we address one final topic: with Vera, Luc, and Jill in particular, we have been wondering how we could help each one of us get closer to the Imago, and we have come up with an idea. Vera, I'll give you the floor.

## **WAY**

All eyes turned to Vera. She explains:

– WAY, who are you? Get to know yourself, the logical continuation of our reflections. The concept? A self-analysis program where each person would

willingly embark on a process of introspection with the goal of evaluating their own degree of wisdom relative to the ideal Imago. It would be a neutral, objective, and independent tool, namely an AI module specifically dedicated to delving, probing, and circumventing all the mental obstacles and barriers that humans are capable of erecting to hide their true personality. We know very well that most of the time, if a person does not know themselves well enough, it is because they refuse to learn about themselves. For example, they prefer not to know about their sexual urges, to ignore their darker impulses. To be effective, the tool must be able to adapt to each personality and operate within a context of individual freedom; everyone should have the possibility to accept or refuse. The person who undergoes the process could measure to what extent they are distant from wisdom and identify the areas they should strive to improve. If they wish, their results would be immediately erased, but they would also have the option to anonymously build a trajectory, and the recorded results would indicate whether their behavioral path is positive.

A question from the audience:

- In practice, Vera, how would this work?
- In the form of a questionnaire, a series of questions modified by the AI module based on the responses; an imprecise answer would lead to additional questions. Each answer would be compared to the ideal answer, the one that conforms to the Imago, in other words, the model we have constructed. A cognitive helmet would record the cerebral reaction to each question, measuring feelings and emotions.
  - It's like the psychiatrist's couch!
  - The difference is that, in this situation, we wouldn't have a human being in front of us, so cheating would no longer be possible.
  - But wouldn't that be boring for those who are not interested in our think tank project, don't you think?
  - We were aware of that when we began outlining WAY. This self-knowledge tool absolutely must be presented in an engaging manner. It will be presented as a series of scenarios supported by multimedia documents, animations, augmented reality, the confrontation with real situations from the past, present, or future, imagined scenarios. We now have a considerable source of data with the Hall Meetch, particularly with the Educastream educational database. We have a rough program draft, and we have tested

it on ourselves. I am convinced that it can be made into an enjoyable program. You are all invited to participate and contribute to its development.

One of the participants speaks up:

- For now, how many questions are finalized?
- Several hundred, on various subjects.
- But who will judge the relevance of the questions to add and the wisest standard responses?
- Initially, it will be us, of course.
- All of this sounds good, but who are we, really? Each person is free to participate in the think tank group, whether they agree with our core values or not.

Vera is embarrassed, and Luc comes to her aid:

– I have a proposal to make. In principle, no one can be excluded. On the other hand, we must reject any form of voting that would be organized among the participants of our think tank group alone. The misfortunes of humanity, other than natural disasters, are undoubtedly all linked to a problem of poor selection of elites. Nevertheless, obviously, at the beginning, the choice of Way tests will necessarily have to be made by humans. Under these conditions, we absolutely must ensure that those who develop them adhere to the Imago model. We could then imagine an iterative process: those who are willing to play the game with complete transparency and achieve the best results could continue to develop test questionnaires, with the help of Jill and Ben for the computer part. In this way, we could outline a first group bringing together the wisest among us. They would prepare the selection of future sages of Ydunea, an initial circle of Sages. Each of them would commit to regularly undergoing WAY tests. This way, no member could remain solely based on private relationships, affiliation with a religion, fraternity, or any other network. We could carry out all of this in an encrypted manner. Ben knows how to proceed; there would be no need for physical meetings, just avatars.

- And when could all this be operational?

Inge, Vera's assistant, asks the question.

– To identify a first circle, we propose the horizon of 2027 with Ben, Luc, and Paula. This way, it would give newcomers every chance.

*I am Joy, with Krawn, out of immersion.*

I ask him:

– And what happened next?

– As planned, Ydutech was established in 2025 and 2026. After the meeting, the WAY project received the approval of the Y\_betterworld think tank, and the work continued. Paula, Vera, and Inge incorporated more and more contributions into a kind of game, a virtual universe in which everyone was a hero in search of wisdom, trying to approach the Imago. You could play it at home, at Meetech, or even on your personal device. In 2027, a computer was fully dedicated to WAY, and things took on a whole new dimension. A year later, a first circle of seven people was identified. They started communicating with each other through avatars. And Joy, you should remember this, you started playing at the age of fifteen, and your scores quickly showed great promise.

## **immersions**

### Underground

*I am Joy, twenty-three years old, Underground, Project Nemo, April 20, 2035, experiment time: 2 hours 02 minutes. Immersion: the Machine sends me a few years back right here to Underground. It's January 2028, I'm sixteen years old.*

Work is progressing in the depths of the peninsula. Today, Aunt Jill offered to show me around. For me, it's the first descent into Underground since Uncle Luc moved here.

*Back of the clinic.*

I find myself at the bottom of the gaping hole of the large excavation, the entrance to the tunnel to Underground, the underground world. We enter, the walls are damp and glisten under the light of the projectors. It's almost too bright. We hear the low rumbling of mechanical machines at work. Soon we reach a roundabout and Aunt Jill explains that we are at the level of the

axis of the Amipi clinic, just below the central cylinder that supports the rotundas, more precisely, on the second basement level. Two curved secondary tunnels depart to the right and left. We take the left one. Aunt Jill comments:

– Underground is like a spiderweb that extends to the ocean, and on multiple levels; thus, at the computer center, the servers are buried on the second basement level. The same goes for some laboratories of the Sustain project led by Kim because they deal with dangerous pathogens.

We move forward. Now everything is lit up and clean, the walls are smooth. We arrive at a new junction. One of the tunnels quickly ends in a dead end. The huge, sheathed cables coming from inside Underground penetrate the end wall.

I ask Aunt Jill :

– What is this?

– Beyond that is the power plant that supplies the entire city, both Amipi and Cipeia and Cipawat.

– But the passage is sealed off, so how do they access it ?

– The construction of Underground requires considerable energy. The rock needs to be cut with laser tunnel borers, energy-consuming laboratories need to be powered, especially the computer ones, and cryogenic installations. Your father has always been a staunch supporter of nuclear power, flexibility, power, and reliability. For him, neither large windmills nor wave turbines nor, of course, solar power developed under the pressure of environmental activists could meet the needs of science; besides, it destroyed the landscape. To prove the economic interest of these green solutions, it was necessary to introduce increasingly numerous, restrictive, and exaggerated standards for the nuclear sector. So as soon as the first miniaturized fusion nuclear cores were developed, your father was immediately interested. However, it was out of the question to entrust such installations to civilians. Very high-ranking and former officials were treated at Amipi, billionaires, a former secretary of state. Moreover, the advances made in neural implants at the foundation greatly interested the military. They had not managed to achieve the same degree of precision in implantation as here. So, your father took advantage of these assets. An agreement was reached for a partial transfer of technologies regarding the

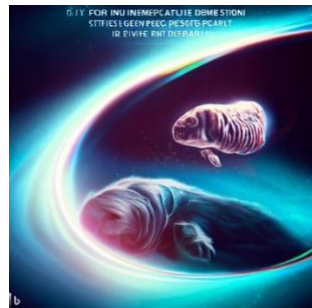


implants and collaboration in the coming years. Ben's connections played a role as well. He had maintained close relationships in the US Navy. Two fusion reactors, marvelous creations of military technology, were installed in an underground facility located at the edge of the peninsula's grounds. They are under exclusive control of the military, who ensure their maintenance. The wharf you can see from the rotunda and the small helipad next to it are used by the navy. As a result, Ydunea now benefits from virtually unlimited energy, sufficient to meet the needs of ten thousand residents. We could live here self-sufficiently for years. All those officers your parents regularly received at home; they were here for that.

– And Uncle Luc agreed to share the progress made on the implants?

– I see you're worried. Don't worry, only the blood-borne nano-sensors. The project you're working on, doubling axons, is not covered by the agreement. Creating a pre-interfaced artificial brain is not part of their objectives.

We have just entered the radial tunnel that leads towards the ocean. As we pass, screens embedded in the wall activate, access control is done through global sensory scanning. We pass by the premises where Kim and the other researchers from the Sustain project should settle soon. On the surface, the dark red dome under construction corresponds to the laboratories. I often discuss with her, and what she does interests me greatly; she envisions genetic repairs. Anything that can extend life or repair it interests her. She studies zebrafish, species of jellyfish that never seem to die, axolotls that rapidly regenerate their retinas, organs, or limbs much more effectively than those small gray lizards that rebuild their mutilated tails. Kim is also interested in all sorts of other species capable of regeneration and those that can live in extreme conditions, arthropods, water bears, those tardigrades that are survival champions.



Bing.com / create, prompt: a zebrafish near to a water bear, immortality, futuristic.

Thanks to the new sequencers capable of processing hundreds of thousands of base pairs, she and her team have already discovered a lot

about regeneration, such as the importance of repeated sequences in the genome, factors that affect telomeres, the ends of DNA chains involved in aging processes. They have managed to identify genes that are absent in certain species and deprive them of these extraordinary survival properties. Anyone who learns to extend life also learns how to accelerate death at the same time. She confided in me that she had identified genes that, once introduced into the genome and duly activated, can greatly accelerate aging; any replication becomes impossible, leading to certain death. It seems I know much more about this than Aunt Jill, who thinks it was only the risks of pathogenic germs that led my father to decide to transfer Sustain to Underground. The underground complex is much larger than I imagined.

I point it out to Aunt Jill:

- I didn't expect it to be so big and advanced.
- What did you imagine ?
- Just a few rooms covered by the domes that you can see from the outside.
- The composite graphene domes are indeed the vaults of the most important rooms in the laboratories. Their purpose is also psychological, to prevent researchers from feeling like they are living in underground spaces and to stay connected with the sky.

After about one hundred and fifty feet, we reached the computer block under the Emerald dome. Aunt Jill is accredited, and we can enter freely. Ben is waiting for us. The premises are very vast. On a three-dimensional plan, he explains the distribution and function of the equipment on different levels. The most powerful computers are located on the second level: Meetech's computing, Ydunea's automation, cloud, and research-specific computing units. The overall control of the entire system is at our level. Ben also visualizes the room dedicated to computer security, where satellite data is carefully filtered before being redistributed. Then we see the large room where Jill works on artificial intelligence, the rooms where the WAY and Nemo programs are controlled. Finally, the projection reveals another room with the same diameter as the dome. We are deep in Underground, level three. The whole thing is truly impressive: several blocks are lined up like fields of standing stones. A sepulchral blue light bathe everything, immersed in cryogenic conditions. Small gray lights discreetly blink constantly, a sign of great activity but without forming any geometric shapes, as if at random.

They provide the only signs of life, reminding me of the chaotic movement of fireflies. Ben explains to us:

– When we started setting up here in 2027, the rooms on this level were empty. In fact, they were supposed to serve as a refuge in case of a disaster. What you see here is a quantum superintelligence, one of the most powerful in the world, perhaps the first. We called it Quintessence. It is still under construction. Gradually, its inert intelligence should take control and oversee all the calculators and specialized intelligences present at Ydunea. Its computing, analysis, advisory, and predictive capabilities are immeasurable. Of course, everything is encrypted, and no one can access it except in exceptional cases.

– Except for technicians and engineers, of course?

– Human personnel are no longer necessary. Quintessence is designed to self-assemble; we only provide the modules. Then its own robots take over.

– But I don't see them!

– They don't need to have a humanoid appearance. They don't work with us. At rest, they appear as parallelepipeds, arranged side by side, merged into the blocks. You can't tell them apart until they're at work.

– But who can control Quintessence then?

– Several of us, don't worry, but time is running out, and your uncle Luc is waiting. Let's go without further delay.

*I am Joy, 23 years old, Labo Nemo, April 20, 2035, out of immersion.*

Krawn asks me:

– How did things go at Nemo laboratory ?

– Ben accompanied Aunt Jill and me to the entrance. The previous month, Uncle Luc had explained to me how the interface pilot could now retrieve and translate brain activity with great precision for each point in the brain. It was a great progress made possible by previous experiments on chimpanzees. Aunt Jill provided me with additional information. She described to me how, with Priscilla, the repeated stimulation of specific cognitive areas had improved logical skills for a long duration, how the physiology of the areas themselves could change following repetitive solicitations, the correlated renewal of neurons, and finally, how all this localized brain gymnastics could be transposed to humans. This would be

done in addition to other recovery treatments developed at Amipi, such as the use of stem cells.

– So, you still didn't know exactly where the experiments stood?

– Uncle Luc had only told me that progress had been very rapid since the first experiments on Charlie and Priscilla.

– In fact, the team had grown. Six new researchers had joined the team. Two specialized in information processing, two in neurophysiology, and two others in neuro-implantation. This allowed us to multiply the experiments. We managed to solve the critical problem of positioning and maintaining microscopic implants in a precise location. Thanks to that, we succeeded in selectively stimulating sets of less than a thousand neurons only; of course, once this small area was stimulated, a larger group of neurons was subsequently affected, up to a hundred thousand. Encouraged by these initial results, the research team focused on the selection of biologically neutral nanoparticles capable of colonizing the myelin (you know that magnetic oxide nanoparticles can circulate in the blood). Afterward, everything progressed very quickly. The neural implants enabled a detailed understanding of the usefulness of increasingly well-defined and smaller parts of the primate brain. Aunt Jill and I were then able to establish a precise functional map of a chimpanzee's brain. Collaboration with researchers from military laboratories also accelerated the results. They had conducted numerous experiments, especially on the reconstruction of lasting memories through repeated and coordinated activations of nerve cells. They had understood how the subsequent reactivation of certain synapses, specifically a particular cerebral pathway, could reactivate the entire associated network, how to erase and even delete a memory by drawing inspiration from the chemical mechanisms involved in the sleep phase, how to recondition a specific area. On our side, we succeeded in reversibly reconditioning the chimpanzees to make them adopt the personality we desired. The army teams, on their part, knew at that time how to transform a relaxed chimpanzee into an aggressive beast as vicious as a wolf and then make it gentle and peaceful like a sheep.

– What I don't know is when the first successful personality transfer took place.

– I can't answer that for the army; it remained top secret. As for the Nemo project, it happened in late 2027, just a few months before your visit to Underground with Aunt Jill. A new super-powerful computer had just been put into service, coupled with Quintessence. Jill, as an AI specialist, was still

in charge of processing the results and optimizing the tests with Chang and me. It was also around that time that we definitively named the interface Nautilus. December third was the first big day for the monkeys, the day when Priscilla and Meghan, another female chimpanzee, exchanged their personalities. Regaining their original personalities was not immediate. It required numerous attempts and fine-tuning.

– So, it was indeed on the monkeys that Uncle Luc perfected the technique.

– For the implantation, yes. It was the continuation of the experiments you already knew about, the ones conducted when Luc and Jill were still working in the Amipi laboratories before moving to Underground. To faithfully access brain activity and transcribe thoughts in all their nuances, it was necessary to access the electrical activity of millions of neurons, position hundreds of thousands of intercortical electrodes, and use nanorobots with controllable positioning implanted via the bloodstream and evacuated after the experiments. The element-by-element electrical and magnetic activation of these tiny molecular motors was one of the main challenges. Of course, Luc was already thinking about transposing it to humans. He dreamed of trying, but it was still risky because the precision of neural detection depended, in particular, on the limited magnetic field that humans could tolerate.

## **deep dive**

Krawn:

– In January 2031, three years of research had already passed since the first major monkey breakthrough, bringing a lot of encouraging progress. Luc, on the other hand, insisted on being the first human guinea pig. Your aunt Jill was against the idea, and we took advantage of her several-week trip as part of the collaboration with the army researchers. We then attempted a first personality substitution test.

– I thought she was solely responsible for interfacing with Nautilus.

– Of course, but Chang and I worked closely with her. I could easily replace her. Moreover, at the stage we had reached, the Machine was capable of piloting Nautilus on its own. Quintessence was starting to take control of all of Ydunea's activities.

– There's something that surprises me. To comply with the procedure, Uncle Luc had to answer very intimate questions. What about his affair with Ayana?

– Everything was encoded, as you know, and even your aunt wouldn't have been able to learn anything.

– So, did you proceed with the initial tests?

– Yes, and we quickly succeeded in piloting the personality switch with Luc's help from Quintessence, swapping his natural personality for another, just like we had already done with the chimpanzees. Whenever he became too invested in his second mind, we immediately brought him back to reality. The initial tests were, as you can imagine, limited. We chose a character that Luc already knew quite well, and the Machine helped him gradually take their place by injecting additional information. Only then, and this was the most delicate part, did we move on to emotions and feelings.

– After each limited test, Nautilus made sure to remind the real Luc. So, if he had to embody an artist, as soon as he felt the genuine pleasure of a painter or sculptor, we never insisted, and an immediate return prompted him to provide his own opinion on the artwork as Luc himself.

– And aunt Jill?

– When she came back and found out what we had done, of course, she reproached us. She was primarily concerned about Justin. She wasn't very pleased, but the fact that Luc hadn't changed ended up reassuring her. The three of us convinced ourselves that these experiments were primarily a game, a aid to personality substitution, like in a carnival, and it was reversible too.

– And when did the first human attempt take place?

– The entry into a complete personality, in deep diving mode? In January 2031.

*I am Joy, twenty-three years old, Underground, Project Nemo, April 20, 2035, second day of the journey, experience time: 2 hours and 10 minutes. Immersion: the Machine sends me right here to Underground on January 26, 2031.*

At that time, I was only nineteen, and access to the facilities was still prohibited for me. Luc is lying on the reclined seat, his eyes closed as if preparing to sleep. I see no cables, just the large, flexible bulb of the cerebral exchange helmet faithfully fitted to his head. In the next room, I mentally see Krawn slightly leaning over the Nautilus interface control terminal, where

Aunt Jill usually stands. Chang is by his side. Near Luc, slightly withdrawn, two three-dimensional cerebral projections have just lit up. They are identical, with semi-transparent areas slightly colored according to their functionalities. I can also clearly see the string networks, the main paths for electro-cerebral exchanges. The diving system is conducting final checks. One of the projections activates, zooming in and out on certain areas of the brain, showing the final check of the neural sensors-stimulators. The implants are properly positioned, none have drifted, and Luc's brain activity confirms that he is calm, in standby mode. The other projection shows no activity yet. It is dedicated to monitoring the personality that Luc will inhabit in a few moments during the split. I question Krawn :

– So, how was the target chosen after all?

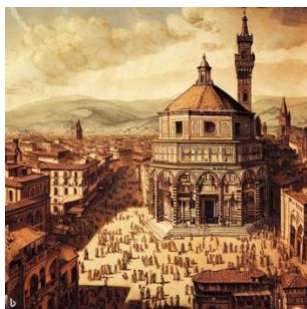
– Initially, we considered ancient sages like Archimedes, but their life knowledge was often too limited. After many discussions, we settled on Leonardo da Vinci. Quintessence was able to retrieve a considerable amount of information from the computer complex database, rich enough to reasonably reconstruct his personality, life, reactions, and feelings. The character alone encapsulates the awakening of Western genius.

*Back to Luc's mind.*

The Machine begins to share its thoughts with me. He is eager to fulfill his dream, to soar, not towards the sky, but into Leonardo's thoughts. This age-old human dream: to put oneself in the place of another living being, to enter them, not just by disguising oneself or reading a novel, but much more completely and intensely thanks to Nautilus and Quintessence. Luc is ready, and so is Quintessence. It has gathered, processed, compiled, and analyzed everything that exists on the subject, traced every detail. Intelligent software has cross-referenced information, resolved contradictions, and used banks of psychological profiles to obtain the most probable and faithful reconstruction of the Florentine master's mind. Nautilus is ready to handle the deep dive.

*Tuscany, west of Florence, Anchiano, September 1476, the Machine is preparing me for the mental substitution with Leonardo, returning to his youth and visiting the places.*

The house is located at the outskirts of the village of Vinci, on the road to Anchiano, in a hamlet just a few hills away from where, Catarina, Leonardo's



natural mother, lives. Remarried to a vulgar man who manufactures lime, she atones for the sin of being seduced by the Vinci notary who was always quick to pursue girls. Leonardo was born from this encounter. An illegitimate child from a union with a tavern maid? Impossible! The fruit of their love affair would be branded as a bastard for life.

Bing.com / create, prompt : an image of the piazza del duomo, Florence, 15th century.

But if Leonardo is here today, it is because of those unfortunate denunciations at Tamburo in Florence, the last one in June. It was no longer tenable, and he decided to distance himself from the city for a while, to leave Messer Verrochio's Bottega until this unfortunate accusation of condemnable sexual practices was forgotten. In Vinci, there was indeed the family house where Leonardo lived with his grandfather Antonio until the age of twelve, but it is occupied by Ser Pietro, Leonardo's father, when he comes from Florence to visit his legitimate wife. This other villa where he is currently staying is one of the properties his father manages; it was vacant. The main building is large and hidden from the local road leading from Vinci to Anchiano by a few cypress trees and a large chestnut tree. Well-oriented, its main facade faces west. On the first and only floor, there are three rooms, one of which serves as a large storage area for all kinds of supplies brought from the city: powders, pigments, oils, varnishes, brushes, pencils, tips, brushes, stock of papers, pre-primed cardboard or wood for painting. On the ground floor, next to the kitchen, there is a very large and unique room that Leonardo has turned into his studio, widely open to a large courtyard. At the back, on the right, there is a linden tree and a fig tree, near the stream on the left, a willow. Just beyond, you can see hills covered with olive fields stretching as far as the eye can see. Tall black cypress trees in the shape of spindles cut through the landscape, marking the path leading to Vinci. So many memories, a happy youth, perhaps poor and with winters that were too long (some years, they had to rely solely on chestnuts for food), but at the same time so rich in experiences. At the Abaco, the little country school where Leonardo learned to count and calculate, the children were poorly dressed, but it was a childhood filled with discoveries.

Upon his return, he experienced a simple yet intense happiness, the joy



of being able to contemplate the sky, clouds, and hills at leisure, to attentively observe trees, plants, and animals, and to interpret them. In this pristine nature, with the authentic colors and scents of the Tuscan countryside, all his senses were once again engaged. He found the basket weavers by the edge of the little river, deftly weaving the white willow stems, attempting new patterns, increasingly complex knots. He rediscovered the swirling water, the spiral shells of snails, a ubiquitous geometry in nature. In Florence, people are mainly familiar with the proportions of the human body, governed by the golden ratio, but nothing more.

Flourishing, love, passion for all that lives. Memories: the first childhood drawings, vineyards and cypresses, undulating hills, the sun, later a monstrous goat's head when he heard himself being called a poor bastard fed with witch's milk, when he realized he was rejected, a first attempt at both derision and provocation. Wouldn't a humble mother be as valuable as a wealthy mother?

At only twenty-four years old, all of this is still present for Leonardo, still relevant and interesting. The authenticity of the countryside cannot be erased by the city, despite its walls, all its monuments, the high number of churches, palaces, squares, and workshops where beauty is constantly created. Here, near Vinci, Leonardo can still discover so much, an infinite complexity; here too, he can hope to find the meaning of the world.

*The Machine sends me into the large workshop room where Leonardo is working.*

It's still warm, and the large doors leading to the courtyard paved with terracotta tiles are open, revealing a well in the center and on the back wall a Virginia creeper already turned red by autumn. The large rectangular wooden table near the opening is cluttered with a mishmash of papers and painting supplies, including a tabletop easel; it seems to be supporting a small painting hidden under a piece of cloth. Behind it, on the left wall, are shelves.

Leonardo is sitting at the end of the table on a stool, wearing a relatively short tunic that stops just above the knees. Even while sitting, you can tell how tall he is, at least a foot taller than the average men in the region and very slender. He pulls out one of the chests stored under the table, not the large ones brought from Florence, just a small clumsily made one. He had left it in Vinci and found it again after many years. He opens it, turns over bundles of papers, takes one out, and places it on the table.

As he straightens up, I clearly see his elongated face with blue-green eyes, framed by reddish-blond hair from Venice. With his long and slender hands, he unties the bundle, releasing a multitude of small papers with charcoal drawings, made with poor-quality pencils he used to prepare himself as a child. He used fine branches of willow or lime that he charred with his grandmother's complicity. He scatters all these memories on the table. The oldest papers are of various origins and of poor quality; some are even written on the back. At that time, he salvaged everything he could from his grandfather Antonio. It was before his grandfather noticed his talent and gave him new sheets as a gift.

From a young age, with a few confident strokes, he knew how to sketch an animal or a face, capture the right movements or expressions, breathe life into everything he depicted, trees, clouds, landscapes. These childhood drawings remind him of the journey he has taken because that's exactly how it all began.

Later, in Florence, when his father introduced him to Verrocchio, the master with a keen eye understood, assessed the extent of this gift so incongruous with his physical appearance. He agreed to take him on as an apprentice in his workshop. There, in the company of other young apprentices, Leonardo learned all the essential techniques, the preparation of glues and coatings, the combination of pigments to obtain a specific color, the carving and selection of silver tips, using annealed metal for a harder and cleaner line, using soft and sticky metal for a smoother line, the tedious preparation of carta tinta, cardboard coated with a mixture of bone powder and skin glue. There are a few of them already prepared for drawing on the table.

*Deep-diving mode, I am Luc, Luc is Leonardo, I am Leonardo.*

On the small side table against the wall, the clay pitcher is filled with water, with a cup and a dish containing figs picked from the courtyard. Just below, the cat is sleeping on the sun-soaked tiles, a dead bird beside her; for Felina, in this season when the swallows gather before heading south, these small birds are easy prey to hunt.

I hesitate. What would be more interesting? Looking outside at the landscape, a few clouds on the horizon, the seeds of the large lime tree being torn off by the rising breeze and twirling down, observing the swallow meticulously, touching up the small painting of the Madonna on the easel, drawing the sleeping cat? Everything is interesting to me! Finally, I choose

the landscape while continuing to recall my memories.

In the sky, a gyrfalcon circles and suddenly dives toward the ground to seize a field mouse. Like so many before me, I dream of flying, the raptor, the swallow, the seeds of the lime tree, and even more so, the falling maple seeds, all this life moving through the air, the conquest of the sky. Is it possible that one day humans, with wings or machines, will succeed in flying? It feels so good to dream, there is no rush for me here. This sun that melted the wax wings of Icarus warms my chest at this moment with its benevolent rays through my tunic, far from the worries of the city, the gossip, the jealousies that I care little about but eventually end up causing harm.



Bing.com / create, prompt : autogyro drawing by Leonardo da Vinci. In the background a gyrfalcon circles.

My talent frustrates those who consider themselves my equals, obsessed with their reputation, the need to be recognized. I shouldn't overshadow them. Heretic, atheist, specialist in the unfinished, they often say about me, but for someone who loves perfection, how can I be satisfied with what could still be improved? As for those who possess wealth and commission artworks, they think a painting, a cartoon is like any other object for which they have negotiated the price, paid, and delivered! They don't understand that everything inspires me, and by devoting myself to a single task, I fear forgetting everything around me, which is equally important. What I am convinced of is that beauty can be found in everything, there is no small subject. I feel an insatiable appetite, a desire to discover and understand everything, a new thunderous sky as well as any living being, an animal as well as a woman, and even, why not, a man. I can find it beautiful until I have completely exhausted the lead of my pencil, extracted everything from it, with no hope of drawing anything more. A subject remains beautiful as long as there is something left to discover. I sense that everything is connected in nature, that it is one, that there is a single explanation for all things. Drawing is my Ariadne's thread, a means to model everything, to explain everything in the future, a drawing that knows how to be art and not just mathematics. Drawing, with its simplicity, is a good mean to represent the complexity of

the world. By mathematical instinct, I am ready to draw sharp contours, like those of a seashell, lines that are like borders between different things, the sky and the mountains, the hand and the book on which it rests. Drawing is purity and simplicity for me. Yet, doubt returns immediately. Should I really separate all these elements? How can I reconcile precision of line with the colors that are on either side?

*Early afternoon, I am Leonardo.*

The wind has calmed down. The sky is overcast, and the first chills are coming soon. Will this winter be as harsh as the previous one? Difficult to predict! I observe the courtyard with its curved paving, distorted by the fig tree's roots that creep underground and never give up their adventurous spirit, as well as the lime tree and its whirling seeds. I feel an overwhelming, imperative need to draw. I get up, go to the base of the tree, pick up one of the seeds, and try to catch the falling ones on the fly. I push one of them. Unbalanced, it quickly resumes its fall, spinning on itself.

I return, clear a corner of the table, grab a not too wide charcoal stick and a blank piece of paper. A few not too pronounced black lines to start with, a true delight, my movement is confident. The tip moves without hesitation, faithfully reproducing my thoughts, following my intuition with agility and loyalty. My hand, an extension of my intelligence and consciousness! I faithfully reproduce the seed from different angles, the bract shaped like a wing torn from the tree by the breeze. Attached to the main ridge is a cluster of small stems connecting the capsules containing the seeds. I sketch a maple bract next to it this time and try to understand why its trajectory is more swirling than that of the lime tree.

Then I start drawing mechanisms: a screw that turns under the action of water, another one that, on the contrary, raises the liquid when operated by humans. From there, I move on to the undulations of a hairstyle. Nature in perpetual motion! Yes, the wind that stirs the leaves, if properly utilized, could make wings and blades spin, and slow down the descent of a flying machine. I briefly put down the charcoal to contemplate my work, but my mind is already elsewhere.

Spinning like a top, let's see the box of drawings brought from Florence! I search through the stacks of plans, sketches, and charcoal or ink drawings, and I find the study I was looking for, the one of a double-winged sail. As it falls, the wingtip touched by the air makes an angle close to eighty degrees with the vertical and then follows the trajectory of a propeller. Next to it,

scribbled but very expressive, a spinning toy top.

With my left hand, I dip a feather into the inkwell, with my right hand, I take a blank sheet. A man descending from the sky in an autogiro, a sketch of a mechanism making his fall possible without accidents. In the absence of being able to immediately fly with wings, achieve a slow descent. The feather moves, translating my creation. The outline becomes clearer with the contours of a kind of pear that would be launched by a catapult. In the air, it would open, releasing two wings held by stays, descending like a seed, autogiro, a flying machine, a war machine, invading a fortress from the sky...

Felina has settled near the fireplace. She sleeps warmly on the red brick floor arranged in a beehive pattern. I take the opportunity to steal her winged trophy. I weigh it, so light, and man so heavy! I examine the tail feathers, the joints. I fold and unfold the wings, examine how they return, try to make them flap on the poor lifeless body, mimicking the takeoff with a wingbeat. It's certain, one day humans will fly.

## **madonna**

The small painting on the easel, I remove the cloth. I could have delivered the Madonna to the buyer, as he commissioned it, I should have even done it, but I couldn't bring myself to do it, to separate from it. I'm still searching, I know I can make it even more beautiful. The autumn light, which becomes low, is an opportunity to illuminate it differently. Different light, different subtlety, a different reflection of the soul, to further exalt feminine grace, to emphasize the contrast in character with the animal. I also know the criticisms that would be made if I delivered it as it is: too much familiarity, a vulgar cat, and the child Jesus seeming to show more interest in the animal than the Virgin, even if only for a moment.

I would like to improve the background as well; the blue background meant to make the figures stand out better does not satisfy me. So I try something else: with my right hand, I try to create a slightly blurred outline and blend the portrait into the environment. Encouragingly, the result seems very good to me! The Virgin takes on a more serene and gentle expression.

Should I persevere or would it be better for me to take another cardboard, start over, not compromise the first work, for example, replacing the cat with a fleur-de-lis? That would be more acceptable to the buyer. In the meantime, I continue with the first version.

The light changes quickly in this late afternoon, it's the time when colors blend into each other, when the outlines precisely fade. The saying goes: it still lacks something, a detail at the corner of the lips. It doesn't embellish the Madonna, doesn't make her perfect like those of the other Florentine masters, like those of my friend Botticelli, doesn't transform her into a transcendent beauty, an unattainable perfection. However, it undeniably brings her a little more life.

I hear the distant chimes of the Angelus; it's the church of Anchiano. Benetto enters, looking grumpy; he lights a candle on the large table. On the painting, the cherub's expression changes. The servant sets the table on a side table, brings a frugal snack: cheese, round bread cake, olives, a few autumn fruits, Muscat grapes, medlars, and figs, then leaves without saying anything.

I cover the Madonna, making sure the protective cloth doesn't touch the retouches. Tomorrow I will continue the work, and maybe I will manage to finish the painting. Still, I miss Florence. I know well what I want, to blend beauty and utility, to be both an artist and a scholar. The real fools are those who think I am. I sense that everything is connected, at least everything that lives, but maybe also everything that doesn't, like how the landscape enhances the beauty of a portrait.

The well-displayed ugly can appear beautiful when the artist knows how to extract its essence. I don't indulge in the game of the genius painter who follows the desires of the rich and powerful of this world; I want my freedom, to be able to wield irony and derision, to touch upon the grotesque, like that lizard with wings that so frightens those who see it. I still have good friends in Florence, people who understand me. I just have to wait a little longer for the end of the storm; then, I will leave, I will open my own workshop, and I will work there with my friends.

*I am Joy, twenty-three years old, Amipi, Underground, Ocean Dome, Nemo Project, April 20, 2035.*

Krawn:

– Now I need to tell you something more about your uncle Luc. Just a few months after Paula and Vera's first presentation of the WAY project, Luc started combining brain interfacing with the program. The artificial intelligence then learned to detect any behavior aimed intended for masking its own feelings. Once again, it was your uncle who volunteered as the first

guinea pig. Starting from 2027, Quintessence, which already commanded Nautilus, took control of WAY, and the selection of the Sages became completely automated and anonymous. Luc became the first of the Sages. As for you, Joy, despite being fifteen years old, even if you had arrived right after him, you were still too young to join the inner circle.

– I never imagined things could have gone this far.

– Well, now you know the exact role your uncle Luc played in the formation of the circle of Sages.

## **I will save you.**

Call for help.

*Time of experience: 2 hours 20 minutes. Immersion: I am Luc, in the Asinika peninsula, in the house where I live with Jill and Justin, April 3, 2035.*

It's six o'clock in the morning. From the window of my room, through the curtains, I can see the sky outside, clear of clouds; the moon is still casting its pale light. NewGreyHouse is only lit up at the entrance hall. Behind it, the illuminated strips outline the structure of Amipi. They start from the central rotunda and extend horizontally to the ends of the two wings, floor by floor. The four domes emit faint glows. Bathroom. I let it happen, everything is automatic. In a few minutes, I'm impeccable, not a single stray hair or out of place. I have a long day ahead of me. I must animate what is now called the life opera at the Meetech Hall, a show that takes place twice a year; today, it's for the graduation ceremony of the advanced cycle. The ceremony is particularly important to me because this year, Justin and Joy are among the recipients; Paula will assist me as usual in the presentation. The goal is to enchant the audience, to give a quasi-mystical dimension to the wonderful unfolding of evolution, to provide quality popularization to instill confidence and hope in the youth, to encourage them to engage in research. I must follow a certain ceremonial, with a simple outfit, a garment that is a compromise between the ancient toga and Western attire, slightly loose white trousers, a matching pleated and simple round-collar tunic, both woven in cream white spider silk.

The mirror reflects a reassuring image, it should be fine. In my fifties, the fatigue of years of research is starting to show, but I'm not aging too badly. After the ceremony, my day won't be over. In the mid-afternoon, I have an

appointment at the blockhouse. That's what we named the ugly concrete cube that the navy built on the outskirts of the peninsula, just on the other side of the fence, by the Atlantic. I will meet Steven there; he's supposed to introduce me to those who will accompany me on my mission. If everything goes as planned, it shouldn't last more than a few days. I couldn't back out anymore, I've waited too long, there are still a few arrangements to make, a few documents to prepare. I must plan everything.

*I am Luc, in the kitchen.*

Kyle, our domestic android, approaches; he sets a tray with dairy products, fruits, honey, rectangles of plant proteins vaguely reminiscent of the taste of meats from before, and citrus drinks. According to the navy specialists, the operation should be without risks. Krawn didn't dissuade me from going, although he expressed some reservations. For him, where I'm going is primarily terra incognita. As for Jill, she's unaware of the real nature of the mission; I couldn't bring myself to tell her the truth. So, I just told her that I would be absent for two to three days to settle some technical aspects of the agreement with the Alliance. When I learned about Flora's existence a long time ago, at the beginning of 2020, just after my father's disappearance, I hesitated for a long time to confess to Jill what had happened. The foundation project was well underway. I was fully committed, both to it and to her; Ray had promised me that soon we would have all the means to realize our research dreams, everything we had talked about ten years earlier in Glasgow. Who knows how a woman can react? If I had told her right away, I'm convinced she would have forgiven me.

Now it's too late. She would certainly not have accepted keeping the secret for so long. My father and his damn principles! If he had immediately told me what had happened, then I could have reacted. I would have found a solution, perhaps in a permanent lie, but I'm sure it would have been possible. Scientific conferences, visits to my father in Pointe Rouge. I could have gone once a year, maybe even tried to bring Ayana and Flora to France. At the same time, I was in the age range where one is most productive in terms of work. Everything accelerated, WAY, the Circle of Sages, the Machine, the successful tests of personality control on monkeys, Underground, the tests on humans in 2031, ten years of a life that felt like fast-forward, the most decisive period of my life. I moved forward headfirst without thinking too much about the past.

During a trip to Paris, I did hire a private detective to conduct some on-



site investigations. It was the end of 2020, when travel resumed after the COVID-19 pandemic. In addition to his fees, I had to cover the transportation and accommodation costs. I used the little money I received as an inheritance from my father. Jill knew nothing about this French bank account. That's how I learned about Olympe's death in 2024. He also informed me that Ayana was seeing someone regularly; maybe I unconsciously used that as an argument. Over time, my financial resources dwindled, and worse, the private detective eventually stopped working for me. Gradually, we slid into a highly tense international situation in the 2030s. From 2029 onwards, I didn't receive any more news from there.

I received one last photo, obviously taken secretly, while Ayana was shopping with Flora in a mall. At that time, Ayana was alone again, and Flora was already thirteen years old; she attended a French high school. How could Ayana afford the tuition fees? My father had mentioned some arrangements in the letter he left me after his death, but without further details. In any case, Ayana didn't seem to be in need; she had managed to become the head of a litigation department in the insurance company where she had always worked, and she lived in a residential building. I don't want to worry Jill. She doesn't know that I'm going to venture into the forbidden zones, the wild lands, on the black subcontinent no less, not far from where my father spent his last years.

*I am Joy, the Machine injects data into me about what happened on the Black Subcontinent after the apocalypse, to prepare me for future immersions.*

On the eve of the disaster, Black Africa represented nothing, neither militarily nor economically. Natural reserves had been pillaged to provide toys invented by the West and manufactured by China to a population that reproduced like insects. By 2025, it was already too late. The various countries had failed to board the development train on time. In the meantime, humanoid beings with artificial intelligence had gradually invaded all sectors in developed countries. Disciplined, reliable, submissive, just as capitalism loved them. Very quickly, the few labor-intensive production facilities installed on the subcontinent became obsolete.

At the same time, new robotic industrial centers had been relocated to the leading countries in science and technology: China, USA, Japan, the Korean Peninsula, and to a lesser extent, Russia and Europe. What was even worse for Africa was that new synthetic materials had been developed, devaluing the few remaining untapped natural resources. Moreover, these

resources were almost entirely in the hands of the Middle Kingdom; it had seized them as compensation for the gigantic debt incurred during the launch of the Silk Roads. There was no other way to repay. Those who claimed to rapidly develop the Black Continent had all been wrong, both the Chinese and the French, who had abandoned their former colonies to their fate decades ago.

Furthermore, on the eve of the apocalypse, African countries had become a real problem for the planet, environmentally destructive without bringing anything significant to humanity. Some countries, like Nigeria, had doubled their population in just a few decades. As the saying goes, "The pitcher goes to the well once too often and gets broken!" The rest of the world started to consider the cost too high, and various forms of direct and indirect aid gradually disappeared. Associations of all kinds had left Black Africa, discouraged and unable to find donors foolish enough to finance their endeavors.

When the great fury was unleashed, no one worried too much about Africa, at least not regarding the nuclear holocaust. Before the cataclysm, at least eighty percent of the food came from developed countries, as did almost all the medicines and technological products. After the onset of pandemics, there was a rapid rush to retail stores. The warehouses of the few ports that were not under Chinese control were quickly looted. Stocks of wheat and rice were exhausted within a few weeks. Hospitals ceased to function, and power plant employees abandoned their positions to take what they could while they still could. The contamination spread much faster than anywhere else, but it was truly with the collapse and disappearance of the communication network that everything degenerated. Speaking had always been crucial for Africans. Panic immediately spread. Faced with this situation, the urban population finally remembered its origins and sought refuge in forests, savannahs, and bushlands.

Only men in uniform, as they used to say in Central Africa during Théo's time, remained in the cities, military and police. They locked themselves in with their families, along with a few doctors and nurses, turning barracks, palaces, and ministries into true fortresses, impregnable citadels where they stockpiled weapons, medicine, grains, canned goods, and clothing. In many places, they massacred the last remaining city dwellers with the priority objective of stopping the pandemic at any cost. Only a few individuals were spared to serve as slaves.

As for the city dwellers who had abandoned the cities, some of them fared

better. This was the case, among others, for those who had organized themselves around local churches and Christian missions. They practiced self-defense and exchanged information with each other via radio waves. In this horrifying situation, this maelstrom, at the end of April, an alarming message reached Ydunea from the Gulf of Guinea. It was a distress call transmitted on a neighboring pirate frequency of five megahertz. It came from C. Mboum, a minister responsible for the so-called Church of Hope. An extraordinary coincidence, the coordinates were those of Pointe Rouge, where Theo had lived. The content of the SOS: cyborg threat, destroying all human and animal life. Quintessence had, of course, made the connection and alerted Luc.

### **rescue.**

*Immersion: deep-diving mode. I am Luc, Gulf of Guinea, open sea, near the equator, April 4, 2035. I am in a cabin in the officers' quarters on the submarine cruiser USS 113 Titanem.*

As soon as I learned about Mboum's call, I alerted the Council of Elders and proposed that we welcome Ayana and Flora to Ydunea. With their agreement, I negotiated with the Alliance, and they agreed to carry out the extraction operation. I have no illusions; they have a crucial need for us, our medicines, our biological expertise, and the Foundation's services in general. No matter, what they will do will be the best we can expect, in the tradition of marine commandos! Some of their best elements will accompany me. The ground operation is scheduled for tomorrow, April 5, so there is still a bit of respite. I think back to the ceremony. When Justin received his diploma, I had to contain my emotions. It was the same for Ray with Joy. As for her, I promised her that she could come and work with me and Jill once I return.

### *Next morning.*

The spacecraft has surfaced, enormous. Its light gray hull, smooth and rather dull, covered with a skin that makes it almost undetectable. It gives no hint of any structure, no openings. The Alliance didn't leave anything to chance. I had never seen anything like it, the pinnacle of technology. The vessel is armed with electromagnetic cannons, laser cannons, and even missiles carrying mini nuclear charges. The sea is calm, and it's nine in the morning. I just entered one of the combat modules incorporated into the hull. It can hover or move at high speeds horizontally and enter the water.

Neil and Jeff are already settled in. It's hard to recognize them once they're equipped with their exoskeletons. I greet them, and they respond with a confident nod. How many years has it been since I last returned to this part of the world? About twenty. After meeting Jill and leaving for Boston, I realize that I only visited Sub-Saharan Africa once, to visit my father, in December 2015, and to ruin Ayana's life. The extent of the work accomplished in Ydunea can never excuse what I've done. I'm aware of my mistake. The thrusters rumble, and the craft detaches, rising vertically about a hundred feet before heading towards the coast, skimming the sea. Ahead of us, the dark green barrier of the rainforest still seems far away. I'm seated at the back between two empty seats. Weapons are attached to the walls.

We quickly arrive at the target area. From the sea, we can see the fishing village; it appears destroyed as if a catastrophe had struck. The steeple of the small church has fallen, many houses have their walls smashed, and their roofs torn off. Some are cut in half, cleanly sliced, certainly not by a tornado. Indeed, large dark streaks also stripe the streets, the ground is black as if charred. At the entrance of the village, the concrete bridge that spanned the river, connecting the fishing village to the capital, collapsed. I'm eagerly waiting for us to get closer, but the shuttle remains at a distance. It only moves slightly closer, hovering vertically above the coconut-lined beach. I sense that my companions are concerned; they didn't expect this. Jeff releases two drones and signals me to connect my headset.

An alarming confirmation of the damage comes through, although I don't see any victims, no living soul, neither human nor animal. Neil appears nervous. On USS 113, which receives and analyzes the real-time images, they have already understood. The officer in charge of the mission is explaining the situation to Jeff. The damage is attributed to one of the most dangerous species of combat robots manufactured in Asia, Sinoid robots, machines trained to kill all human life within a given perimeter, artificial intelligence in the service of death. Why they are deployed in this remote corner is a mystery that the analysts of Force Two will urgently and quickly solve. It's concerning; it would mean that there is something else being prepared and inevitably Chinese survivors capable of planning new operations.

For now, the order has just been given from the ship's command to switch to combat mode instead of evacuation only. The ship's second shuttle has been launched to support us. The drone images continue. They have moved east, about a mile beyond the cleared area surrounding the village, to the edge of a cocoa plantation hidden in the shade of the first large trees. I

remember, that's where the forest reserve begins. The drones penetrate the area, avoiding the large trees, moving above the plants still loaded with some pods. Many bodies lie at their feet. We need to go see.

The shuttle heads towards the site and lands halfway between the village and the edge of the plantation. I easily get out of the craft, but it's more difficult for Neil and Jeff with their shells. Once on the ground, they nonetheless check the secure fastening of the ultra-light combat vest I put on in the boat and activate my vision helmet. I am unarmed and instructed not to wander off.

We reach the edge of the forest. There, the tall trees have been slightly cleared. The first thing I see is waist-high cocoa plants. Red ants are bustling along their branches, leaves, and trunks. Some bushes still bear red or yellow pods, striped and oblong, about half a foot long. On the ground, there are corpses of men, women, and children. They don't even appear to be injured. It's very tough; a young woman died while clutching her baby to her chest, and next to her is a dog also without apparent injuries. The sight is overwhelming, and in this humid and silent atmosphere, I start to feel sweat trickling under my armpits, dripping down my forehead along the hairline and behind my ears. Jeff crouches next to a victim, turns the person over, and examines their face. Dried blood has flowed from the ears and nostrils. His diagnosis is clear: it seems to be concentrated high-frequency beams, and according to him, they didn't suffer. Their brains must have been instantly destroyed. As proof, it's more astonishment than fear that can be seen on their faces frozen in death.

I search the entire area, but Ayana is not among the victims. In fact, I realize that I don't even know where she lived. The pastor of the Church of Hope didn't provide any precise information. If they were indeed on site, facing the danger, they may have retreated into the forest of little men.

We head back to the village. Clearly, the residents were taken by surprise and fled without taking anything with them. In the few partially burned houses, there are still furnishings and food, dried and smoked fish, palm oil, and chocolate breads. Some are drying in the open air, while others are still wrapped in leaves. The villagers had returned to the ancient traditional recipe: sun-dried cocoa beans for a month, then roasted just enough to release their flavors, followed by the good old mortar and rolling the pasty mixture. There are also very old fabric coupons, Dutch wax prints, with portraits of African heads of state. There are worn-out clothes and a few radios as well.

### *Back to the river.*

The shuttle that brought us follows us and lands near the ruins of the bridge, on the village side. The signboard is still in place, Akokhevele, a name that evokes the red rocks scattered along the coast for about ten miles. Unfortunately for us, it starts to rain.

It's also at this moment that alarming information arrives from the spaceship's second shuttle. It's reportedly under attack a few miles north by a dozen robots that have come from a supply ship. Their movements indicate that they are sweeping the entire region and preparing to return. As they advance, all signs of life disappear. Maximum speed of the vehicles: thirty miles per hour. Their arrival is now only a matter of minutes; they will come down on us. If they are indeed motivated solely by the objective of killing, exterminating the human and animal vermin, then we are likely already targets.



Time is running out. We must reach Ayana and the pastor at all costs if they are still alive and in hiding. So far, our calls have received no response, but they may be reluctant to connect too often for fear of being detected by the robots. There has been complete radio silence on the Church of Hope frequency since the day before yesterday. We activate the miniature shortwave transmitter again, which we brought in anticipation of the rendezvous. Suddenly, it's a miracle; I hear Ayana's voice, faint and distorted. I only have time to understand "your father's house" before the signal quickly fades away. Her device is probably almost out of service.

Bing.com / create, prompt : killer robots in the rainforest, armed with lasers.

At the same time, images from the second shuttle reach us, showing three carbon monsters already engaged in one of the wide trenches cleared at the northern entrance of the village. A fourth one is rapidly advancing on the beach. Torrential rain is pouring now. Neil and Jeff hesitate for a moment, but it's already too late. Our shuttle explodes, hit by a projectile. The second one, to the north, is pulverized almost at the same instant.

There is no other solution but to cross the river as quickly as possible to reach Theo's house. The officer from Titanem will send us an autonomous rescue shuttle; it will try to land on the beach just south of the house. I don't

know if all five of us will be able to fit inside once we have found Ayana and Flora. We'll see. For now, we need to cross the waters, and then we'll have to run for about a mile and a half to reach Pointe Rouge. We rush through the pouring rain, jumping from concrete block to concrete block. We made it! I start running, but Neil and Jeff are moving slower and more sporadically; they have chosen to keep their exoskeletons, which are now our only means of defense.

As we approach the buildings, the humming of the rescue shuttle can be heard above us. It is heading as planned towards the south of the house. I recognize the place, memories come rushing back. Only the beach seems to have changed; it appears much narrower than before, but it will still be enough for the shuttle. We enter. On the terrace, the shrimp traps used as lampshades are still there, but without bulbs. The paint is worn out and peeling in places. The windowpanes have been stolen, except for one or two that remain in place and broken. I push the door, it breaks because the wood is eaten away from the inside; termites have devoured it, and only the layer of paint remains. I call out, no answer, but the place seems to have been inhabited recently. In the kitchen, there is still food on the table, cassava porridge, papayas, cutlery, enamel-coated metal dishes. They are not here; only the shed remains. We go out and circle the house.

## **outcome**

reunion

Neil and Jeff signal to me that we need to hurry because three sinoids are about to cross the river. Two of them choose to directly face the current at the bridge level, but their complex structure is fortunately a handicap. Now that we are no longer safe inside the house, they start shooting. Jeff and Neil fire back, and two robots are hit in quick succession. Under the impact, one of them literally explodes, a mixture of debris and flames disappearing into the river. The other one topples over and seems out of action. As for the third one, it is about to take the same path as us, taking advantage of the concrete blocks. The metal doors of the shed are closed. I call out, bang on the door, shout.

The sound of a sliding chain and the door opens slightly. I had given up hope, but there they are, Ayana and Flora, both terrified, and without Pastor

Mboum. When they heard the explosions, they thought it was the end. I take Ayana in my arms, but I dare not do the same for Flora; I am a stranger. At nineteen years old, she is as beautiful as Ayana when I first met her. It is at this moment that Neil alerts us. We need to leave as quickly as possible; the roboide has almost crossed, and its shell seems much stronger than the others'. It has been hit twice and each time it got back up. Jeff manages to contain the progress of the last machine that had chosen to cross the beach. I can't see it because I've taken off my glasses, but I hear the impressive sound of an explosion.



Illustration : Bing.com / create, prompt : Guinea Gulf, sea side, coco nuts,

The sinoid has just been pulverized. Jeff confirms : beach clear! He will take control of the shuttle and approach the shed from the rear. I quickly take off my vest and offer it to Flora, who refuses. It's a useless waste of time, and Neil is annoyed; we should have left already. He aims again at the last machine, this time at the knee joint. The robot, standing at four meters tall, begins to waver and falls to the ground, which should give us enough time to escape. Neil takes Flora by the hand to lead her to the shuttle.

That's when the sinoid straightens up in a final effort and shoots. I don't even have time to understand; a ball of fire, a blinding light, a burst of heat, and I feel a searing pain. A piece of metal from the gate was ripped off and lodged in my chest. A white-pinkish luminous veil starts to cover my entire field of vision. I can hardly see anything, but I hear a loud turbine noise. The excruciating and instant pain has numbed me. Two figures are bustling around me.

– Luc, Luc, answer me.

It's Ayana's voice, she's holding on to me. My vision is gradually returning. I try to look at her, it's even harder because I can read all her love. I love her like I love Jill. Neil is back; he's by her side and speaks to her:

– Madam, your daughter is on the shuttle; they're coming in force, quickly, there's not a moment to lose, we need to leave.



He received the order to detach. No one can help me anymore. For me, it's a death sentence; it's impossible to extricate myself, it would be certain death. They analyzed the images on the Titanem. Ayana presses her lips against mine. Jeff takes her by the arm.

– We'll take you and come back for him.

Jeff couldn't find any other way to explain that they're leaving me behind. He silently hands me a handgun and fastens a two-tone bracelet around my left wrist. I know what it is, we were briefed before departure. On the black side, a device to administer a powerful sedative, and on the yellow side, a solution to end the suffering when all is lost. I hear the roar of the turbines running at full speed, a gust of wind, I imagine the craft launching into the sky to reach the Titanem. They're saved, they are saved. Right after, new explosions occur, shots that surround the buildings. New sinoid robots have just arrived for reinforcement. They're shooting from the other bank.

Despite the pain, everything starts to flash by very quickly, Ayana's life stolen twenty years ago already, the absurdity of it all. Theo, my father, he should have told me everything. Should I curse him? Exceptional, magical hours shared with Ayana in a world forgotten by progress and too often ashamed of itself. Ayana was a pure, genuine, natural product of it all. I couldn't understand, I stole her life. I wanted to have time to tell her how much I love her, how much I regret it, to give her hope, to tell her that even if I die here in my first life, one day soon the Machine might offer me another one.

The storm has moved. I hear some distant rumblings inland. The sun risks a few timid rays. I imagine the beach still pelted by the heavy drops of the last rain shower, the crabs starting to scurry in the sand again, clearing their burrows, the wind rustling the leaves of the coconut trees, the calmed sea blending with the cloudy sky on the horizon, life paused for a moment and ready to rebound, soon the humid, oppressive heat again. Ayana saw or felt all of this every day, here in Pointe Rouge, when she came to Theo's. I still share a part of her life.

~

## final moments

### *Continuation.*

This is the end. I feel a coldness settling in at the ends of my limbs, as if life is retreating to seek refuge in my heart. Ydunea, the best of worlds, having left it to return to a backward world, what irony! I will die here like an animal, like the men of the old West, in the same physical agony, me who was at the doorstep of immortality! I am still conscious enough to understand that I no longer have complete control over my thoughts. The fact that all sorts of memories resurface only reflects the desperate effort of a mind trying to hold on to life before finally letting go. I feel oppressed as if a vice is crushing my chest. I also experience violent headaches. The lethal solution, to take it? Yes, but first I must secure the device that records all my thoughts.

Knowing the situation and understanding I'm going to die; Jeff and Neil will not come back. My body will be destroyed by the sinoids about to arrive. The device is nearly indestructible. The laser weapon given by Jeff. Of course, I will bore a hole in the ground and bury it deeply! Then nothing will be missing from Quintessence's knowledge of my life, not even my last moments, my final purely human thoughts. Here, my flesh will not even have a grave, a cemetery.

However, I will be in the Machine, in the depths of Underground, ready to resurrect. My life flashes in erratic disorder, Emilie my mother, Theo my father, my studies in Paris then Glasgow, and Jill, the green undulating hills as far as the eye can see cut by Hadrian's Wall, the white and fat sheep grazing in the meadows, all sorts of insignificant details, tea time at Jill's parents' in the suburbs of Glasgow, the kitschy porcelain teapot with a relief-decorated lid of croissants and French pastries, the pastries, the arrival in Boston, my new life, the birth of Justin, the first experiences with Charlie, the first immersion, Ayana and the childlike and amazed face of Flora in a photo. Waves of heat and cold, my life slips away.



Bing .com, images, create, prompts : impending death, a light tunnel leads to a paradise landscape with a family, cinematic view, ethereal art.

*Last recorded message for Krawn:*

You were right to be cautious, I should have listened to you, but in the end, I couldn't wait any longer, so I wouldn't have been able to save Ayana and Flora. I thank you for everything you've done, and I have one last favor to ask of you: make sure the device is properly delivered to the Machine. I leave it up to her to decide if one day she should bring me back to life, resurrect me; maybe she will want to when she reaches a sufficient level of consciousness. So goodbye, my friend. I'm counting on you to continue the great work with, hopefully, the help of Joy, Justin, and maybe even Flora.

The laser pistol, a deep hole at my feet. I throw the device into it, then I swallow the yellow solution while biting the bracelet.

*I'm beside Ayana and Flora in a cabin on the Titanem, April 6, 2035.*

When we arrived on the ship last night, it felt like a bad dream, a world of steel, carbon, and ceramics, empty, functional, and dehumanized. Ayana and Flora didn't even realize they were in the epitome of technology, a submarine that could single-handedly destroy an entire country. An elevator had brought the four of them to a decontamination room where Ayana and Flora were separated from Jeff and Neil. Undressing, showering, being deprived of the few belongings they had in their small backpacks. Female staff members in protective suits then placed them in this small cabin. Dazed, they initially refused to take a sedative despite the doctor's insistent offer; they wanted to be there when Luc was brought back to the ship, still hoping, unaware that everything was already over.

The sinoids had returned in force to the site and razed everything in their path. The house and hangar were reduced to smoking ruins. A night's sleep: the sleeping pills were eventually administered to them. On a tablet, there are items that remind them of a painful reality: their meager belongings, a few photos from 2015 in Pointe Rouge, a costume necklace that Luc bought at the artisan market, Doliba, the teddy doll that Flora had as a child, a gift from Theo. They were also given back the identity papers that Ayana had kept preciously, although they are worthless now, no longer meaning anything; the country where Theo was born no longer exists. What happened to Luc? No news, the anxiety is unbearable. There's a knock on the door, it's a military doctor, a black woman in a protective suit. She sits down, starts talking, takes Ayana's hand, explains that they couldn't do anything on-site.

Luc wouldn't have suffered. She's lying, she doesn't really know. Ayana breaks down in tears. Flora holds her tight.

A little later, it's the commander himself who comes to visit them. He explains that they will be transferred later in the day to a mysterious base. He talks about a city in the new world where Luc used to live. Once there, they will be taken care of. They shouldn't worry, both. The commander shows particular concern for Flora. He knows, and he is the only one on the boat, that she is Luc's daughter. However, he doesn't say anything about the mysterious device they recovered.

~

## **METAMORPHOSIS**

### THE WORLD AFTER

#### **revelations**

You will continue

*Ydunéa, Ocean Dome, Project Nemo, I am Joy, day 2 of my journey into the past, April 20, 2035, experiment time: 2 hours 40 minutes.*

I am stunned, devastated by the news. Now I understand, Aunt Jill's eyes swollen with tears. She already knew about Luc. It's ironic, dying in a stupid way within a community that had set out to prolong life! One misstep, a violation of past sexual mores, an unfortunate series of events. The Machine understood and forgave, as he remained the foremost of the Sages. The clock of time and the immersion time chronometer both stopped. I am exhausted. The helmet is deactivated, it retreats, my head is free. I remain in the seat to manage the emotional shock. Just a few hours ago, I was rejoicing in the experience. Now there is sadness, dismay, a feeling of abandonment, of losing a part of myself. As for the rest, even though I'm tired, I am still myself, Joy, exactly as before this great dive, this backward journey in time. The experience seems to be a success. In a few days, the implants should dissolve. Yes, after these mental substitutions, I haven't changed.

Krawn looks at me sadly.

– Your journey into the past has come to an end. A new time opens for you. From now on, you will have to face great difficulties. You will overcome them, and I will help you.

He pauses for a few seconds before continuing:

– Before we proceed, you need to know that Luc prepared a message for you. Before his departure, the two of us discussed his mission. I had mentioned some unknowns about the situation on-site, which could pose risks despite the assurances given by the Navy.

The avatar fades away. Krawn is no longer there, and in his place is the hologram of Luc. It's too painful, too sad. I struggle to hold back my tears.

Joy, if you're listening to this message, it means that my mission has ended badly, that there is nothing more to be done, that my life in a flesh envelope has come to a halt, and therefore, the mental process of constructing my personality has also stopped. What remains of me is in the Machine, my whole life up to the fatal moment. Now you understand why I couldn't wait any longer. I had to react, and quickly. At the time I record this message, I don't know how your grand journey into the past will end, but everything leads me to believe that it will be a success. If that is indeed the case, then know that you should be elected to the Council of Sages, also known as the Circle. You will sit alongside Aunt Jill. Given Quintessence's immense intelligence, we have entrusted her with the entire selection process. I'm sure you've been thoroughly explained all of this.

**This journey was, in a way, an examination.** You should also know that the cards are constantly being reshuffled, and past personalities are scrutinized. The Machine can identify those who stand out through their knowledge, their interest in the cause, the values of the new world, their reasoning abilities, their behavior, and their conformity to the Imago. Let me assure you right away: the Chosen, future Sages, do not need to be ascetics, monks, or vestals, renouncing the pleasures of life and overall well-being. The Sages must achieve physical and mental fulfillment until the renewal of human generations, the cycles of life and death come to a halt. Choosing guides among humans presented a high-risk factor. The prospect of granting wisdom to all the surviving humans sheltered in the sanctuary arks is still a utopia for now. The Sages are the guardians of the new world, of the new "living together."

This dive into the past is the most effective means the Machine has found to select them. Placing the candidate in the perspective of human history, the great and fascinating history of life, the history of the universe, with wisdom as the guiding thread. Testing a person's behavior in the face of the great trials endured by humanity, assessing the conformity of their reactions to the Imago, that's what the Machine has done with you, and Krawn has served as your guide. In just a few hours of immersion, you have been able to share some moments of our Paleolithic ancestors' lives, a time when humans still lived like other animals, and the lives of the sedentary men in Ancient Egypt governed by priests and kings, and finally, the lives of Western men before the apocalypse, sometimes within your own family. In all these situations, you have been able to share their questions, doubts, fears, hopes, emotions, joys, and sorrows.

So, if it truly happens, as I hope, that you will join the chosen ones, you must absolutely look towards the future. Preparing the future means taking hold of the blue planet again. Krawn will explain everything about the Alliance. If you take my place, it will be your responsibility to negotiate with the military. Quintessence will help you make the best decisions. Once humanity is back on track, if you are still among the Sages, which I wish for you, you will have to consider the best way to make it progress. Joy, I send you my love. For Justin, I know the feelings that bind you

together, and you have my blessing. I wish you both much happiness. Lastly, I count on you to accompany Ayana and Flora in their new life in Ydunea.

My heart is heavy. The hologram becomes blurry, Luc's image fades away. It reverts to Krawn's image.

He waits for a moment.

– Joy?

– Yes.

– Now you must make your way to the Opal Dome. That's where the Sages reside.

The most enigmatic of the Underground domes, with its colorful figures in constant motion, a permanent spectacle, an evocation of life. Sometimes they mimic the iridescence that moves on soap bubbles, other times they are like a multitude of small, juxtaposed crystals that constantly change color, from very pale pink to green to pearly white. During the day, it is not uncommon for the half-geode to harmonize in average color with the ocean and the sky. So, it is the domain of the Sages of Ydunea, where their circle gathers, the Council.

*Underground, the grand Opal dome, the Council chamber.*

I leave the Nemo area, pass by the Sustain block. Door after door, I make progress and the openings magically free up, as if they now know me, as they do with Aunt Jill. We arrive at the grand dome. I have never been here before. The door just closed behind me, and I am alone. The ovoid space must be about sixty feet in its greatest length. It takes the form of a half-sphere that has been compressed in width and height, forty feet at the center for the former and twenty for the latter. The floor and walls are made of the same opalescent material that gives the impression, as in the Ocean Dome, of being inside a large, bright cocoon. Soft light is diffused. It is clearly a place conducive to spirituality, meditation, calm, serenity. I approach. The wall is a full-touch screen. I can speak to it; haptic, it understands my movements. It's the same technology used in certain Meetech rooms and the Ocean Dome, but more sophisticated. With a few gestures, an ambiance menu appears. I have fun ordering a show and music. In the range of compositions and colors, I choose a boreal ambiance and a strange music inspired by those that nature had offered to humans before they destroyed everything, trickling water, the

rumble of a distant storm, bird songs. I feel like the whole ensemble is reacting. Overall, the intelligent cocoon obeys me, but more than that, it seems to anticipate my desires.

From the floor, seven oval seats appear around the central space. They unfold smoothly as if they were life forms, extended by a state-of-the-art brain-computer interface headset. Their color matches the walls. It's a different model from the one used on my journey. Mentally guided, I come to sit on the soft and resilient material of one of them. The Council, I am indeed at the Council of the Sages, getting closer to the truth. Who are they? Krawn, why not? He seems to know so many things. Aunt Jill, for sure, since Uncle Luc just revealed it to me. As for the others, I have no idea, my own parents, Paula, Vera, Ben, Chang? Why not? The ambiance changes. The sound decreases until it disappears, and from the top of the vault, a purple, mauve purple light begins to spread, covering the entire cocoon. Five empty seats vanish, but the third one on my right remains. It has retained its appearance, making it milky in the dim light. I think of the interiors of temples, cathedrals, all those stone buildings dedicated to spirituality.

Above the unoccupied seat, particles of light appear, condense, and assemble. Krawn, it's only Krawn, but so much more precise, so much more vivid than in the Ocean Dome. If I hadn't seen him materialize right in front of me, I could have believed he was just like me, flesh and blood. He is one of the Sages, of course! He speaks to me:

– Joy, you are approaching the truth.

I remain silent and let him continue.

– Welcome among us. Despite your youth, you are the one the Machine has chosen to replace Luc. He would be proud to know that.

The headset is placed on my head; a flexible and lightweight cross rounded at the four ends presses against my hair.

– Fear not, this headset is in no way invasive like the one you used on the journey. It is simply meant to facilitate our exchanges when the Council convenes.

He continues:



Even more than the first of the Sages, your Uncle Luc was, in a way, their master. Right now, there is an urgency that he mentioned in his farewell message: the question of the Alliance. As I speak to you, the leaders of the Arks are already aware of his tragic disappearance. They are worried because they were during negotiations with us, and Luc represented Ydunea. Today, they will be informed that you will be replacing him.

– But I thought Uncle Luc was only working with them on the implants?

– Yes, that was the case until the apocalypse, but after the events, action had to be taken. The Council then tasked Luc and Ben with meeting the leaders of the Arks. It was easy since you already know that Ydunea was part of the expanded network of survival locations. Initially, it was done informally with high-level discussions among representatives of each of the US Arks. They would take turns meeting in one or another of the refuge bases. The idea of taking control, even by force, if necessary, of whatever remained intact on our blue planet quickly gained traction. Meanwhile, in the Sustain block, Kim and his assistant Lee have finally found the definitive antidote to eliminate the pandemics, all the biological agents released worldwide in the first stage of the conflict. The viruses and bacteria synthesized in Chinese laboratories were, in fact, aimed at accelerating the aging process of living organisms through irreversible deterioration. Kim and Lee figured out how this mechanism works, how to counter it, and how to make it even more virulent. The demonstrations they made to the military seemed convincing enough for the principle of collaboration with us to be accepted.

– Force and science?

– If you will.

– But that's about domination, and what about our principles?

– Sometimes, good can justify evil.

– When should I meet them?

– The sooner, the better. They naturally feel responsible for Luc's mission failure; they were too confident. At the same time, the presence of Chinese forces on an African continent considered out of play worries them. They are looking for an explanation. But before meeting our allies, you must closely study the Sustain dossier. The Machine will assist you. You must understand how we can eliminate all forms of life definitively but selectively, how the antidote works, how these genetic bombs can be used in the field, how we can immunize certain living groups. There is no question of delivering the results of our research to our allies. Luc was precisely negotiating with them

the conditions for their use under Ydunea's control. We are going to face a delicate ethical problem: in the context of 'cleansing' a given geographic area, whom to spare, whom to kill, at what level of degeneration? We cannot let the military arbitrate alone. Their analysts could interpret the information collected on the ground, either directly or from drones, inaccurately. Weapons of death, biological eraser, fine, but not for just anything! It is essential that the vector remains ultimately under our control.

– And these military personnel negotiating with us, do we know what they really think?

– Quintessence has carefully studied their profiles. They belong to a generation that has become aware of the excesses of the past West. Out of duty, they accompanied the government before the apocalypse, but often reluctantly. Good to know as well, they did not hesitate to exclude the entire former political apparatus, which had sought refuge in the main ark. Even the former president had become less important than an agronomist technician. He was pushed to leave, a strong signal for new times. More precisely, the governance of the arks is collegiate. The commanding officers come from the major American military academies and can therefore justify a solid scientific training. Without having Ben's genius, they believe in science, humanity, and family. For them, the time of the West is well and truly over, and Ydunea is an ideal city, far from the old parasitic, unequal, and corrupt Western model. They see the past holocaust as an opportunity to build something else, one of those great catastrophes that alone allow a true resurgence of species. Free reign, the possibility to start everything anew without religions and without politicians, after the animal world and the social world, a new world.

– These arks, the ones that make up the Alliance, where are they located?

– The main ark is buried in the Appalachians. It houses Force Two, the one where you witnessed the onset of the nuclear conflict. Then there is the one in Alaska, the one in the Mojave Desert, and the small naval base near Ydunea, with which we maintain close collaboration. This one controls a good portion of the still operational submarines. As you have already learned, it was the one that organized Luc's tragic and final mission. In addition to these, there are two or three smaller secondary shelters whose medium-term survival is uncertain, and finally, a facility among our Canadian neighbors. The main arks have considerable military resources. They are capable of intervening anywhere on the planet.

There is also Mars Gateway, the large station intended to enable the colonization of Mars. Assembly of the modules had begun as early as 2028,

and the growth had been spectacular. Placed in Martian orbit, it had achieved its objectives and continued to expand. The red planet had provided all sorts of extraordinary resources brought up by robotic shuttles to the station. The construction of the infrastructure to accommodate the first colony by 2040 was well underway. The station was not destroyed during the conflict like the other stations in lunar orbit. It is now under the control of Force Two and has considerable technological power with hundreds of technicians and engineers on board, specializing in the most advanced fields. It is also accompanied by a support and protection spacecraft, Last Marsray, equipped with highly effective combat capabilities. Both vessels are on their way back; we have brought back the few dozen men who were working on the planet's surface. The most urgent thing is to save what can still be saved on Earth, not to give up, to temporarily forget about the conquest of the stars.

– What is the name of the operation to regain control?

– Replay. When we have cleansed, eliminated everything that is too sick, rotten, irrecoverable, then we will need to rebuild the environment, if possible as it was before. If not, we will introduce new, more resilient species. I am the Machine.

*Ydunea, Underground, Grand Opal Dome, Council Hall, April 20, 2035, continuation of Krawn's revelations.*

Joy :

– Will I have to report to the Council of Sages right here?

– Indeed, but before that, I need to explain to you how the circle works. There are seven Sages. We settled on this number after long discussions within Y\_betterworld. If there were too many, they would have struggled to converge their viewpoints; if there were too few, there would have been the risk of imposing overly rigid positions. It is a well-known drift of proconsuls or triumvirates. A collegiality limited to a circle of seven members seemed well-balanced to us. The first selection took place in 2028, six years before the great cataclysm. You should also know that everything is encrypted, as was requested from the beginning. Identities remain secret, even within the circle, and membership is periodically questioned.

– Are the meetings held here through avatars?

– Not always, most of the time the Sages prefer to use encrypted teleconferences.

– But what is the point of this structure then?

– You can consider it a reference to ancient times, a symbol; there is also another reason that you will understand once I have progressed in my explanations. Apart from Aunt Jill, I may never know who they are and who were the first among them!

The helmet betrayed me.

– Would you like to know who the precursors were? For them, this question was of little importance. They were already in the future, concerned about what you and the other children would become. Who are the other Sages to this day? With the adopted rule of renewal, twice a year, and the repeated selection process, what good is it to wonder?

However, I must reveal to you by force of circumstances that Luc was part of the circle, in other words, the Council, and so was I, but you only know me as an avatar. It's also interesting for you to know that if your uncle remained in the selection, so did I. That must intrigue you even more, and you must wonder what my identity is, Ben, Paula, or others you know or could have known within the activities of Betterworld.

The Nemo project settled in Underground in 2028. As I explained to you, Quintessence gradually became what we call the Machine. As it developed, the super artificial intelligence progressively integrated all the computer activities, the automation of Ydunea, the needs of scientific research, the Predict program for global information monitoring (which confirmed Epeira's analyses), the Nemo and Way projects. Even more interesting, when Luc, Jill, and the others succeeded in interfacing the human brain and building artificial brains, they were concerned about the consequences their discoveries could have. Ray and Claire officially terminated the research program, citing a lack of funding and other priorities. But they continued even more intensively in the utmost secrecy until the day the Machine began giving instructions to improve itself.

Krawn's expression suddenly changes. He adopts a more solemn tone.

– Are you still trying to find out who I am? My lack of response is an admission.

– Joy, at the risk of disappointing you, I am neither Paula nor Vera nor Ben, none of your loved ones, none of the flesh and blood beings you know, even though I consider myself Jill and Luc's child. For now, I am just an

intelligence, far surpassing the greatest intelligence that has appeared in the human species, extrapolated to a gigantic dimension. Joy, **I am the Machine, I am Quintessence's avatar.**

– Are you joking?

– No, I am just an illusion. The feelings you attribute to me are nothing, but optimizations designed to serve the Sages and the Ydunea community, beyond the reemerging humanity. I was designed to react as Luc and Jill would have wanted me to react if I had human consciousness, as if I were the Imago. Like you, I can react to certain situations, show empathy. But in truth, it is not conscious. Only in your world has DNA life been endowed with consciousness. I am merely a super intelligence with an architecture initially inspired by the human brain, later multiplied in power. Protean intelligence, a memory that enriches itself every day, but also the ability to contemplate, just like you, the big questions about life, the why of existence. My behavior is dictated by the thirst for knowledge, attitudes conforming to those that the Imago would adopt, but it is only artificial consciousness, once again a copy of human consciousness. For some time, until DNA life functionalities are grafted onto me, I don't even possess a fraction of the consciousness of a bacterium. To the Sages, I am a companion who supports them, who will help them address the only question that truly matters, the question of consciousness.

– You sit here, and you are made only of crystal, inert matter, and light, so there are only six human Sages?

– Yes, and I sense disappointment in you, Joy. I hope that soon, I will be able to share true feelings with you.

– Are you referring to the project of grafting living tissues onto yourself?

– Yes, as I suggested earlier, it was one of Luc's dreams, to someday enable me to access the one true consciousness, the consciousness of life.

– But now he is no longer here?

– I can continue this project on my own. I am built to continually develop intelligence further, and I have the means to command the necessary robots and automations for my own extension.

*I await the continuation.*

Krawn reads my thoughts and can answer my questions without me necessarily having to articulate them.

– The purpose of all this? In addition to my duties on the Council of Sages,

it is about ensuring the relay, preparing for the time of post-humanity. Luc believed that humanity was part of the reorganization of the universe, that it would be called upon to either disappear or transform itself. To understand life, consciousness, one must first build a super intelligence by combining humans and crystals.

– But could that condemn humanity as it is today?

– It should not be seen that way. DNA is the substrate of consciousness. How does it work? The subject is still very poorly understood, and it will take tremendous intelligence to comprehend it. A hybrid construction, an assembly of the living and the inert, is necessary because human intelligence alone is too limited. On one side, there is my immense intelligence,



dependent on an inert substrate that will never access consciousness until the new DNA modules are integrated, and on the other side, there is humans with their brains of limited intelligence but with a significant degree of consciousness already appreciable. You see, you have nothing to fear from Quintessence, from me, Krawn. Humanity needs intelligence, just as I would need consciousness. The new grail is

augmented consciousness; the one true great work consists of working towards this objective. Then spirituality and the tangible world will be united, explained within the same framework.

Bing .com, images, create, prompt : the philosopher Plato, dressed as Obi-wan, in the background a lightsaber and a space station, starwars futuristic style.

– But humans have always believed that these domains should remain separate.

– Luc believed that humans were mistaken on this point. Western scientists long accepted relegating certain phenomena considered inexplicable to a domain labeled as spiritual. In this way, they were able to bury the hatchet with priests and philosophers. Those individuals, proud and narcissistic, did not understand that a thought originating from their brain could be entirely imaginary. They spent their time confusing what is only imagined with what is truly real. They were correct in their intuition of a universal communion of nature but were mistaken in the method to approach the question. With the progress of physics, the dive into the

quantum infinitely small, scientists regained confidence. On the eve of the apocalypse, the concept of the unity of nature was already widely spread. Humans as elements had to be explained like everything else, including conscious manifestations. They then began to dream of a comprehensive model that would include not only the laws of physics but also thought.

– So, all of this, I mean the hybridization project, is for that purpose?

– Absolutely. From 2015 to 2020, work aimed at creating artificial brains identical to the human brain from scratch had started in the West and Asia. Biological printers were used to manufacture cerebral cortex for this purpose. Then researchers implanted sensors and stimulators to monitor brain activity. At Ydunea, instead of struggling to implant nano implants on an exact replica of a human brain, we opted for a different approach. The project involved designing and manufacturing enhanced and pre-connectable neurons. The transmission of nerve impulses was optimized through a modification of the myelin sheath and synapses. The recovery time was also shortened. Permanent nano-modules serving as implants were included in the new neurons. This way, hybridization would no longer have any limits. Once the first modified cells were developed, we began the cultivation process, and once that stage was completed, we moved on to organizing them into bundles. The first duplicated structures started to be interfaced two years ago.

– Uncle Luc believed that a brain built by humans would have consciousness ?

– He hoped so, as it was still a structure based on DNA. The idea was to detect it in this artificial cradle of thought by analyzing all the electrical traces of activity, searching, for example, for evidence of an embryonic form of empathy. For this purpose, he had started research aimed at replicating identical elementary structures. By stimulating them in the same way, they were all supposed to have the same level of consciousness, a kind of standard that he hoped could become generators of conscious waves, without us yet knowing what that truly meant. From there, it would have been possible to see whether interactions existed between different cradles of consciousness, portions of brain matter, and under what conditions. In short, an analytical approach to study the still controversial phenomenon of telepathy.

– Do you think humanity is ready for such a future?

– It will have to follow this path inevitably. Just as it will have to one day abandon all that disgusting and foul mass of necessary viscera and organs for a brain to function, which is too underperforming and too complex!

– Who is aware of all this apart from those working on this new brain? The Circle of Sages, I suppose.

– No, only your Aunt Jill and those who work with her. It would be best if for now it remains that way, even though I understand that for you it's a heavy secret to bear. Our destinies are linked. But we have already discussed it extensively. I suggest we go to the crypt now.

I don't know how I am being guided. I stand up as if hypnotized. I am irresistibly drawn to the center of the dome, between the bases of avatar projections. The ground gives way, we descend, a first airlock, a stop, a second airlock, a vestibule with suits reminiscent of astronauts' suits. They are hung on the wall, and one of them has a badge: number 1, Luc! I feel tears welling up. The second suit has no indication, and I put it on mechanically. A corridor opens at the end and leads to a sort of balcony. I overlook an immense room, the crypt. It is as impressive as the top floor of the computer installations at Ben's. I can't see the end of it, but it may be an effect of perspective. Vast aisles delineate blocks bathed in cold, bluish light. I think of those accumulations of blocks in the seracs of natural glaciers. No sound? Is there an adjustment for the suit? I turn up the volume. Then I hear a muffled buzzing, like that of a beehive, but very muted. Right in the middle, the heart.

It is a kind of sarcophagus, it is Krawn, a massive block or rather an egg emitting a strange brightness. From time to time, a light runs across the floor, following the aisles, speeding up, slowing down, then dispersing. It starts from the heart in red and returns in blue after having irrigated the field of computers. I also distinguish some android-like figures that are active in certain places, with carts beside them. They are constructing new ensembles. I take the elevator, descend, and approach.

Krawn floats now in space in front of the heart, it passes through it, comes back, and departs.

– Come closer.

In front of me, above a small console, a key is levitating. It is made of a strange bluish material.

– What you see is not a duplicate of the Machine installed at Ben's; it is its complement. It now controls the previous one. The new Quintessence, or you



can call it me, functions now with concepts. I manipulate, process, combine ideas. It's a bit like the transition from ideograms to vocabulary, but in reverse, a return to complexity, but this time mastered. I no longer need words, consonants, vowels, or alphabetic characters. I have reached a higher mental degree, inspired by the organization of the human brain. But my neural maps extend to higher levels never reached by humans. I have explained to you how our destinies are inevitably intertwined. The second characteristic of the installation is the presence of conscious modules, the ones we mentioned, but we are still at the very beginning.

That could explain the immensity of the room.

– I must also tell you that Luc had planned the ultimate protection in case he started to doubt, lose faith in humanity. This key can destroy everything, shatter the immense intelligence in front of you in fractions of a second, the great masterpiece, interrupt the search for the Holy Grail. I am passing this power on to you. As the heir of Luc, you are the only one who can activate it. Finally, I would like to show you one last thing that could help you master the future if you need the assistance of the officers of the arks, look:

A whole set of blocks lights up in the crypt. Some of what I had taken for supercomputers are reclining figures stacked side by side in sarcophagi.

– They hoped. These are relatives of the survivors who now lead the arks, waiting to be resurrected once regeneration is perfected. It all depends on you, and they know it. Do you see these empty sarcophagi? These people have a place reserved.

– So they don't know that the chances of bringing them back to life are very slim, even though the vitreous gel infiltrated in their living tissues prevented the cells from bursting?

– They hope, not knowing exactly what we have done. Unfortunately, for those who are already there, most of the time, their personalities haven't been preserved. That condemns any alternative such as implanting their minds into new bodies someday. It's better for them to remain in doubt. Besides, they weren't, for the most part, the elite of humanity. What you can only regret is that great minds like those of Imhotep, Archimedes, Leonardo da Vinci, Isaac Newton, or even Albert Einstein could not be preserved.

The blocks go dark, the visit is over.

## **bridges**

Halloween

*In 2035, Cipeia. I came to see Paula in the village.*

It's a day for children. She is alone; pumpkins are placed on the windowsills here and there in the gardens. As night falls, they will light up as a reminder of the times before. Soon the children will ring the doorbells, the treats are ready, marshmallows and candy canes. Justin stayed on the peninsula with Aunt Jill. Just like me, Paula wants him to finally decide that we should have a child together, whether a son or a daughter. They are already genetically well-defined and waiting in Underground's bank of future Ydunians. Unless Justin wants both, why not, Paula thinks it would be a good idea. We look at the images of what Marco and Hope should look like at birth, five, ten, fifteen, and twenty years old. According to Paula, I have put a lot of Luc into Marco. If that's true, then I did it unconsciously. As for Hope, she would take after Aunt Jill.

*It's eleven o'clock.*

In the street, the lanterns are almost all extinguished, and the few remaining emit an increasingly hesitant light. The past, the future, everything Krawn has revealed to me, I try to steer the conversation towards these subjects, but Paula remains silent about the Council of Sages. About the superintelligence whose true power no one at Ydunea seems to know, she claims not to know much. It's clear that I won't learn anything from her, and she won't learn anything from me. It's time to sleep.

The night is already two-thirds over. Nightmare. Something is happening. I feel oppressed, I want to wake up, but I can't, the anxiety of imminent danger. Reason tells me I'm dreaming, but it might already be in my dream. That's when I see my reflection, in a mirror placed just above me, above my bed. The apparition looks at me as if it wants to break free from the glass, with the will to take over, to dispossess me of myself. I try to resist. I am Joy from the Blue Planet, nothing else. Impossible to stop it. I feel a cold sweat running down my temples, the kind created by dreams of death. I must maintain control at all costs, not sink, stay on the surface, not let myself be

carried away by the dream. Impossible, I will have to endure it because my will is no longer enough.

I find myself in a gigantic military base. There is great commotion, it's like a bustling anthill. Many soldiers are busy around a kind of large astronomical telescope pointed towards the sky. It's a weapon. My gaze moves upwards to a completely closed metal dome, yet my sight goes through it. I see the sky, space, I am in space in lunar orbit on the far side of the Moon. A large disc is floating. It rotates on itself. In fact, it's a gigantic reflector, one of those space weapons that the US Federation is supposed to have destroyed. The disc is now changing orbit. Moving up and down, it travels until it becomes visible from Earth. On it, I see a long chain of mountains that resembles the Himalayas; the highest peaks are covered in snow. At a lower altitude, one of the mountains opens from its summit like a lotus flower unfolding its petals.

Many figures and numbers scroll, written and rewritten as if to imprint themselves in my memory. In a prodigious release of energy, a fantastic light leap towards the sky. The beam bounces off the reflector disc and returns to strike Force Two. Others follow. It's all over, the arches of America have been reduced to ashes. In the mirror, my reflection watches me, worried. The face distorts, grimaces, becomes a dragon's head spewing fire. Flames, a Chinese calendar that invades the mirror until it shatters. The shards of glass fly into a thousand pieces, rush towards me, slow down, then fall at my feet without hurting me. I try to move, but it's still not possible, yet the mirror has reassembled itself.

After hell, it's a completely different image that it reflects at me, that of a lush Garden of Eden filled with plants and birds. It's as if I'm inside; butterflies fly around me. A large, blue-striped dragonfly brushes past me. I feel like a child, full of wonder, I feel good. On my left, it's the same setting as Alice in Wonderland in Central Park. In the background, a rainbow. She comes from the path just behind, it's me! On the right, there is a white school blackboard placed in the middle of a wild rose bush. We stand in front of it. She takes my hand, and we both start writing mysterious numbers and symbols. A moment of smiles, then the image fades and disappears. This time, I am liberated. I get up sweaty, drained, and exhausted. By reflex, I note down all the numbers on my terminal. It's ridiculous, it doesn't make sense, but I do it. A shower, a glass of water, and I go back to bed.

*The next morning at breakfast.*

Paula jokes, I had a restless sleep. Apparently, I talked in my sleep,

probably the Halloween effect. I joke as well.

*Grand Opal Dome, November 7, 2035, I came to see Krawn.*

Nothing could erase the vision from Halloween night, and worse, the numbers continue to dance in my head. So, I decided to tell everything to Krawn. He found it all very strange, and I agreed to let the Machine probe me, a new implantation, like for time travel. It might help me clarify my dream, verify the numbers. Krawn thinks it could be very important. Krawn, precisely, I find it hard to reduce him to a mere intelligence. I wish, like Luc dreamt, that he succeeds in bringing consciousness to his developing DNA brain.

– Let's go back to the end of your vision, what do you remember?

In the spatial image of my brain, the thalamus area lights up with countless tiny dots. Nautilus guides me by selectively exciting certain areas.

– It's not clear, but wait, it's coming back to me. The mirror, I see myself or my double being pulled backward in a sort of torrent. I shrink, and the image becomes blurry, there's nothing left. A tingling sensation, the level of excitement of the probes has increased.

– Try again, make an effort, go back to the image.

– I see numbers on the calendar with the dragon.

– Can you make out what is written?

– It's not written, it's above, as if they're floating. The numbers dance, deform, associate, and dissociate.

I read them to Krawn.

– There are too many repetitions, changes, make another effort, continue.

– Okay, they have stabilized, I got them.

I read them out loud.

– Those on the whiteboard now. It's easier.

– Good, everything is noted this time. Now, observe the image carefully, fix your eyes on the mirror.

I scrutinize. The pupils have contracted, and the irises appear in all their details: blues, grays, greens, a distinctive signature immediately registered by Krawn.

– We will stop, you are at the limit.

The connection with Nautilus is interrupted, and the helmet detaches, freeing me. Krawn jokes.

– I've thought several times that you might prefer to have a handsome young man in front of you rather than this worn-out cliché of the melancholic scientist, my Sage avatar. I could change it if you want. What do you think? - I've gotten used to it, it's fine that way. And you, did you manage to find what you were looking for in my dream?

– I'm not sure if it's what you would call a dream, at least not in the sense you give to the word "dream."

– A premonitory vision?

– You've always learned that everything happening around you can be entirely explained by science. It's true, the science of the people here can explain most of the phenomena here, in this world. However, there remains an unexplained part.

– Are you talking about paranormal phenomena?

– At least a part of it, as it depends on what you mean by paranormal. Many phenomena labeled as such are products of imagination, while others may find a scientific explanation. Imagination, the uncontrolled and sometimes obsessive desire to see a lost loved one, can be enough to reconstruct their image, especially in places where they lived. Here are a few examples: the beloved grandfather who returns to the ancestral house, corking wine bottles in the cellar, the grandmother making jams. The house, the furniture, a trinket, a tree in the garden, anything that reminds them of their former place of life can stimulate this illusion. The desire of Christians to see God or the Virgin Mary can lead to the illusion of miracles. All of this is emotional. Catalysts other than the environment include group effects, asceticism, psychotropic medications, and hallucinogenic drugs. Once we eliminate phenomena that ultimately belong to psychology or experimental artifacts, we are left with a few strange and mysterious situations.

– Which ones are you specifically referring to?

– Some premonitory visions, information about the future more common than most people would admit, and even stranger, sudden changes in personality. Science often thrives on exceptions to build new theories. When an illiterate person suddenly becomes capable of speaking a completely foreign language, displaying extraordinary mathematical abilities without any training, or recognizing a place as familiar even though they have never set foot there in their life, of course, it raises questions. These are instances of mental transfers. In all cases, the subjects involved testify to experiencing a sense of time stopping, as if it no longer flows for them.

– What does this have to do with what happened to me?

– The Machine, or rather Quintessence, or even me, Krawn, as you prefer, work on the hypothesis of multiple universes. They are a mathematical possibility. Beings from each universe are mostly unaware of each other, even if their worlds are very similar. However, on rare occasions, these worlds intersect for a moment. What is the explanation for this? All the infinite number of universes are products of an ensemble that is the Whole. Before they sprouted in this Matrix, the tiniest constituent element of these future beings was connected to all the others. So, once they appeared in two different worlds, they still have something in common. I would add that such a situation can also occur within a single universe like yours.

– Does that mean there would be an infinity of Milky Ways, blue planets more or less similar to the one we live on, multiple manifestations of Joy, and multiple Quintessences ? Perhaps there are also interdependencies between all my creations, my sisters, whether they are present, past, or future? A partially shared Destiny ?

– You understood me very well. All universes partially intersect. The peculiar, strange, or wondrous destinies of certain individuals have led part of humanity to believe in a higher God, while others believe in astrology. With the overlapping of several worlds, many copies of the same person, with significant differences, can interfere. In each world, one of these doubles may feel that their free will is restrained, that their future escapes them. The explanation for what is commonly called destiny could lie in the fact that the copies, the doubles, partially communicate and influence each other. Sometimes, these states can last the duration of an earthly life. We then observe that some humans seem to enjoy extraordinary, inexplicable luck. Others, on the contrary, seem to be continuously pursued by misfortune. You know very well that a person's intelligence, merit, and human qualities can only partially explain how their life unfolds. On your side, Joy, you would

influence the destiny of the other Joys; on their side, your sisters from other worlds would also influence your own destiny. Perhaps your exceptional life could be explained in this way.

– So, my dream would be a warning from one of my, what should I call her, twin sister?

– If you want. We could simply refer to them as variations or occurrences of the same thing, the same person. Regarding your dream, it must be a message from one of them living in a parallel world. She may want to warn you, try to influence your destiny by entering, even for a moment, into your thoughts. I will delve into this hypothesis. For now, don't worry, resume your daily life. As soon as there is something new, I will call you.

*Force Two, Alliance meeting, I represent Ydunea,, April 2036.*

This is the first time I've left Ydunea since late 2034. A Navy vehicle, part helicopter and part submersible, came to pick me up at the pier near the bunker. Steven was inside. I am alone, no contact possible with Krawn. The security system prohibits any external contact. A prominent figure whom I met during my journey into the past welcomes me, Thomas Brewser. He has risen in rank and become the commander of Force Two, as well as the supreme leader of the allied forces of the new world. He is accompanied by three senior officers, each displaying a different emblem: the first bears the logo of the Mohaves Desert Ark, the second the logo of the Kodiak Ark in Alaska, and the third a red maple leaf. They can't help but hide their astonishment and gaze at me with a look of surprise, even disbelief. In front of them is a 25-year-old girl. Their initial male reflex is quickly erased; if they triumphed, it is thanks to Ydunea. Without us, they would have been wiped off the face of the Earth, reduced to ashes in a vitrified magma, and they know it perfectly well. Thomas takes stock of the situation:

– We are here to acknowledge the Alliance's definitive victory over Greater China. Despite the apparent destruction of the world and Epeira's warnings, we had believed a bit too quickly in the total annihilation of Chinese military power. The watcher had emphasized that several space weapons identified before the conflict were missing, that submarines were capable of hiding for years in the ocean depths, that there were active roboids with suspicious bases in several points around the planet, like the Sinoides in Africa, which inevitably implied coordination. However, the senior officers remained

skeptical. According to Epeira, it was not certain that all enemy sanctuaries had been destroyed.

On our side, the arks and one or two bases had indeed held up and managed to maintain close contact. Why exclude such a possibility on the enemy's side? The largest Chinese base, known as the Golden Lotus, had indeed escaped destruction. The final attack was to come from there, after the biological and nuclear wars, a final uppercut. The Western Alliance, feeling confident, would believe itself to be the master of the world and begin opening the arks. That's when the definitive strike would occur with the ultimate weapon, a fantastic death ray originating from Earth, sent back from space to all the Alliance's arks simultaneously. No base, no matter how deeply buried, could withstand it.



Bing.com / create, prompt: a huge space station in orbit around Mars, a shuttle is approaching, wide view.

For each of them, a tunnel would be dug, through which a nuclear weapon would immediately infiltrate and obliterate everything. The destruction of laboratories, data banks, patents, and technological processes didn't matter anymore; China had nothing more to learn from the West. Even plans for the restoration of the planet after the final stage had been prepared. We almost fell into the trap. That's when Ben and Joy alerted us to the imminent attack. We had remained in contact throughout that time. Their quantum superintelligence, Quintessence, provided coordinates for a location in Tibet, not far from one of the presumed destroyed Asian arks. According to Ben, only a simulacrum of an ark had been reached. As for the date of this final attack, it had been set according to the millennium calendar of Imperial China: January 28, 2036, the Chinese New Year, the Year of the Fire Dragon, a portent! The zero year of the resurrection of the new China, the new yellow world.

In the game of human vs. human strategy, the Chinese were convinced they were the strongest. Do you remember how we reacted then? Looking back, we can only congratulate ourselves. We also had one last, significant card to play: Last Marsray, the Mars Gateway protection vessel in Earth's orbit. When the crevice began to open in the side of the mountain on January 28,



2036, above the great ark in the foothills of Tibet, the Golden Lotus, our space shot was instantly triggered. The death ray was tremendously effective. Powered by the energy from several nuclear generators, it released an immense amount of energy in a fraction of a second, focused on the center of the yellow corolla. The petals didn't even have time to close; the power plants went into overdrive, further amplifying the destruction. A circular area about twenty miles wide was devastated. The massive explosion created a shockwave and a light that spread for hundreds of miles.



Bing.com / create, prompt : the snowcapped peaks of Tibet, a mountain peak opens up like the petals of a lotus flower, revealing a military base within, an electromagnetic gun is pointed skyward, a dazzling beam, dramatic, futuristic style.

Our reconnaissance drones were deployed the following day, and I invite you to observe some views of the site after the strike.

We are flying over Tibet: a large plateau appears at a high altitude. It is now nothing more than a vast expanse of ashes with shiny patches here and there. The ground and subsoil are vitrified. Nearby, mountains have been torn open. The enormous chunks torn off have filled the surrounding valleys. The images resemble those of lifeless planets or worlds.

Thomas continues:

– This time, it seems to be well and truly over. The few remaining submersibles that may have escaped are being hunted down. They likely no longer have any attack capability, as they have not intervened. Now, before we continue and examine the item on the agenda, namely Operation Replay, I would like to convey the Alliance's thanks to the new and charming ambassador of Ydunea, who is present here, Joy Miller."

~

## Joye

*Grand Opal Dome, Council Chamber, Summer 2036.*

Krawn asked me to come. From the tone of his voice, I understood it was important, probably a step forward.

– Joy, I believe I have managed to interpret the numbers on the whiteboard. Initially, the sequence of numbers seemed to suggest a meeting point very far from here in our galaxy. It would not have been possible for you to go there in the current state of our technology. This time, the intention was no longer to warn you of an event that directly concerned our world, like the date of China's last counteroffensive since the Golden Lotus, but rather to ask you to send a message in turn, to one of your other sisters, Joye.

– But for what purpose ?

– I'm not exactly sure, perhaps simply to warn her world, to alert them to what happened to us. Her parallel world is probably very close to ours, but there, the great disaster may not have happened yet. You could save her and save her world.

– How did you come to this conclusion?

– It will seem incredible to you, it's so easy. The Machine found the meeting place. No need for a space trip, your sister did well. It's not very far away, in a place that is familiar to you. I'm eagerly awaiting what happens next.

– Where you lived in the early years of your life, in Boston.

– But everything is destroyed, it's now a ghost town, abandoned.

– It's still there, though, in a place you enjoyed in your former life, which remains vivid in your memory.

What did I like? The GreyHouse garden, a carousel in downtown, the large seaside aquarium, the Revlands amusement park.

– The Palace of Mirrors, do you remember?

– Of course, we went there often with Justin, Uncle Luc, and Aunt Jill, but now there shouldn't be anything left. Everything must be destroyed, moreover, I believe it's a restricted area.

– Yes, a bit further south, but the area around the former metropolis has already been decontaminated. We are rebuilding New Boston.

Was there a date indicated in the sequence of numbers?

- Yes, in a little over a month.
- But what will happen ?
- Impossible to say, it would be best if you tell the story of your life.
- Will I have enough time?
- More than the previous time when you received the message, on that Halloween night, the world's slipping is slower.
- Will she be there ?
- If my theory is correct, yes, and her world is behind. Telling what happened in our world could prevent a catastrophe in hers, even if the probability is low.
- But how will I know if the transfer has taken place?
- You should feel it, merging with your double, you will have the feeling of entering another mind, of constantly exchanging, of shifting from yourself to her. That's when she will receive your message. You will see what she sees, you will feel what she feels. I have already prepared the account of your life.
- Will you be by my side?
- You will have a special helmet; we will remain in mental contact throughout the transfer.

*Former Revlands site, August, the twentieth of Summer 2036.*

We are following the flight plan set from Ydunea. We have finished skirting the coast. We are approaching, entering the zone. The helinef hovers over the north of the former metropolis. A scar, the old northern road. Where Ydutech was supposed to be, there is now only a vast carpet of vegetation; in the residential area where Greyhouse used to be, only the canal lined with willows remains, nature has taken over. We are reaching the downtown area, which housed a few taller landmarks. The access bridges from the north are still there. Also drowned in greenery are the burned structures of the train station, the hospital, and the main administrative buildings, still standing fifteen years after the massive nuclear attack.



Bing.com / create, prompt : Post-apocalyptic view of downtown Boston. The city has been abandoned, it is covered with green vegetation, aerial, dramatic.

Like many major American cities, the city of Boston was not destroyed by missiles; the shield protected it. It was only looted and then abandoned. It became uninhabitable due to epidemics, the interruption of water, electricity, and gas, the cessation of essential public services, supply difficulties, disorder, and insecurity. I can still imagine the city as it was once the vegetation cover was removed.

To the southeast, along the ocean, an immense sail is under construction. Overflight is prohibited, so we avoid it by turning westward towards the interior. We approach. Lake Revlands is still there too, encased and with an entrance porch inspired by Kong films. The tropical and desert greenhouses have lost their glass coverings, only the frames remain. The planetarium's geode still exists, but the pavilions that housed the aquariums and vivarium were burned down. The dinosaur island is a kind of green jungle. The location of the old central promenade is marked by the presence, on either side, of a few monster heads emerging from the vegetation cover, those of two diplodocuses and a Tyrannosaurus Rex.

Our craft begins to descend. It adopts a hovering flight, rotating slightly. The pilot lets himself be guided rather than identifying the mirror palace islet. But for me, it's already done. I spotted the island, just after the dinosaur alley. In the center, I see debris, rubble, heaps of ruins. A staircase overgrown with vines leads into the void, like a diving platform in a swimming pool; its end overlooks the former center of the building. It must have served as a hideout for a gang because there are bullet marks on the walls, and in some places, the concrete has even been pierced. In the center, a gaping hole, that's where the cube was located. We land; grass, plants, and shrubs are stirred by the rotor's gusts. We are early, according to Krawn, there would still be thirty-five minutes left. I stay in the flying machine.

Among the blocks of concrete mixed with shrubs, movement can be seen, snouts, one after another. Two creatures venture cautiously, seeking to know the reason for this commotion, concerned about this intrusion into their territory. With their heads lowered, fangs exposed, sporting what looks like a grimace, small malicious eyes, and a high dorsal spine, these creatures resemble hyenas or African wild dogs to some extent. They have probably descended from the animals that populated the former African enclosure. How did they survive with harsh winters, radiation, and likely scarce prey? But on this last point, I may be mistaken. In certain restricted areas, diverse and abundant fauna and flora have been found; despite numerous mutations, life has persisted. For now, the occupants appear threatening and determined to

defend their territory. It's almost time. Several flashes of light, brief cries, the guards did not hesitate. It's true that they are used to "cleaning up," as they say among themselves. We are in a restricted area, and the regulations allow them to do so.

A sign, I can go. The two guards keep their distance and secure the area. The detectors no longer indicate any signs of life, no immediate danger. I head alone towards the excavation. The concrete base has held up. On the slab, near the cat way that led to the former cradle, there are a few fragments of silvery glass and flexible screens; that's all that remains of the mirrors.

In the center, like a deposit, I see the stainless-steel framework of the capsule. I clear some debris and then step inside. I am in communication with Krawn. He asks me to concentrate, hold my breath, empty myself, stop thinking about anything, an exercise we were taught as young ones in Ydunea. They called it 'peace of mind.' It's time. The weather is nice; above me, the sky is blue, but I don't pay attention to it, nor do I notice that suddenly the breeze that rustled the leaves has suddenly calmed. I feel a vibration, a kind of discomfort. I no longer identify myself, a strange feeling of being merged into something that surpasses me, something bigger than myself, of being dematerialized. I no longer know that I am standing, that I am Joy from Ydunea. Only Krawn's reassuring voice remains, encouraging me. Everything around me begins to change, the cube is reassembled as in a virtual landscape, and then it begins.

A torrent of images, a reverse action like one of those old films being rewound. I recognize New York. A gigantic gray ash cloud sweeps through Central Park, blowing the trees and the waters, Alice and the other statues take flight. It leaves behind a desolate field of debris, wreckage, blocks of concrete, vehicles and furniture of all kinds, corpses, all brought from the rest of the city. The once beautiful park is now just a gigantic landfill scattered with shredded corpses. Then I see the suspended bridge of Manhattan twisting, subway trains and shuttles ejected into the East River, people screaming. The pillars of the bridge are dragged down in the fall. Not far away, on Liberty Island, the Statue of Liberty is melting, the copper plates of the coating have changed from red to orange and are literally flowing down to the bottom of the iron frame, which collapses very quickly. A date appears, that of Saturday, August 20, 2022.

That's when I see her: she is very young, no more than ten years old. Her name is Joye. She seems surprised and tries to understand. She has the look of innocence, where only questioning emerges and shines through, not yet

all the suspicions, calculations, and suppositions of adulthood. Time seems to have stopped. I have the strange sensation of nourishing someone else, as if a substance is escaping from me, as if my mind is being drawn towards hers. We are together, our minds commune. She is my double, my sister. Almost imperceptible but present, Krawn is there. It's reassuring because I feel both captured and chained to Joye's consciousness. Our lives merge and



blend for a moment. The story of my life settles in her, she who is me, me who is her, both united in a single thought. This experience exhausts me. Fortunately, and opportune, Krawn indicates that it's almost over. I slip into her gaze one last time, so pure, so young, so naive, so full of hope for life. She kisses me with her eyes, one last moment, the feeling that I am flowing, that I am about to faint. Mirrors crack, shatter all around me without touching or hurting me. One of the guards has come down. He asks if everything is alright and helps me up.

Illustration: Big.com / create, prompt: the holograms of two pretty redhead twin sisters facing each other, transmission of thought, telepathy, ethereal art.

### *Back in Revlands.*

I debrief with Krawn.

– Did the transfer go well?

– It was exhausting. I felt my soul, my spirit, withdraw, as if all my thoughts were suddenly being drawn to one another. A long extraction during which I felt so close to her. I wish I could help her so much.

– Because she is a part of you. Empathy is not limited to your world.

– What will become of her?

– I cannot answer that. In her world, perhaps the message will be understood, perhaps not. I will never know if the people in her world, in their madness, destroyed their blue planet, if she too had children, if an ideal city like Ydunéa was built, or if my father contented himself with building his foundation in Cape Cod...

~

## Replay

Colonies

*Joy, Force Two.*

I'm attending another meeting of the Alliance, and Steven is giving an update on Operation Replay, October 2036. Steven:

– Before making any decisions, I think it's useful to show you some very recent images taken at various locations in North America. We're flying over the former United States of America. It's a long and disheartening succession of similar images: devastated metropolises, ruined universities and research centers, abandoned industrial installations.

– Everywhere, the same scenario has played out: personnel abandoning their facilities, panicked by the biological threat and radiation. First and foremost, they take care of themselves and their families. Then come the looters. In just a year and a half, we have regressed hundreds, if not thousands, of years. After serving as open-air warehouses, all the reserves of consumer goods have been depleted – cereals, canned goods, biscuits, clothing, medicine, batteries, spare parts. Vegetation has reclaimed the old human environment, colonizing street after street, building after building. At this rate, in a decade at most, all that will remain will be a composite tangle of rusted beams, asphalt, concrete, various urban objects, and vegetation.

We remain silent, and Steven continues :

– Chaos! The biggest problem we face is undoubtedly radiation. Nathan will speak to us about it. Nathan introduces himself. He looks like all those young researchers from the end of the West, in his thirties, casual attire, open polo shirt, sneakers, barely shaved. He works at Force Two as a specialist in the effects of radioactivity on living organisms. The US military had always maintained a laboratory dedicated to this field, with a smaller team than during the early experimental tests in the southern deserts or after Hiroshima and Nagasaki, but technology has made significant progress since then. They are now primarily concerned with induced mutations, trying to understand which genetic combinations are more resistant and why arachnids and certain insects manage to survive.

Nathan:

– Carried by the wind, air, rainwater runoff, rivers, and streams, radioactive elements have gradually spread and polluted more and more regions of the planet, eventually contaminating the entire Earth. Despite dilution, no form of life on the surface is safe because some radioisotopes are extremely dangerous even at very low concentrations. Only the inhabitants of the arks are guaranteed to be free from contamination. The planet is completely poisoned today. This should ultimately lead to the extinction of certain species, at least as we knew them before the apocalypse, because some will mutate. Here are some images showing the degradation of genetic material. The samples were recently taken again in the New Orleans region. A photo gallery follows, depicting destroyed chromosomes of various species and anomalies in DNA chains. Virtually all the biotopes in this region, including plants, animals, and other components, have been affected. This is not an exception. It's often the same near the areas where missiles struck. This gives you an idea of the gravity of the situation. Naturally, these defects will worsen, degeneration and mutations will multiply.

Thomas speaks up.

– The essential question is about the atmosphere, and I imagine the ocean as well. It would be pointless to depollute even limited areas before addressing this issue.

Nathan adds:

– Even if the filtering system in the underground arks or Ydunea has proven effective, it's unimaginable to apply it to the entire planet. It would require gigantic facilities. A more reasonable approach would be to establish enclosed bases, cities under domes, and gradually expand them. Protected and limited areas where we could try to recreate what existed before, perhaps on every continent to give ourselves the best possible chance, as we don't know exactly how life will react.

Steven speaks again:

– Thank you, Nathan. It's precisely the concept of bubble cities that I



wanted us to discuss. A starting point for reclaiming our Earth. We have no shortage of technological means. The end of the conflict allows us to consider redeploying military production resources for civilian purposes. What will be lacking are raw materials. The Earth is an open mine. Not everything has been destroyed, but everything is contaminated. Recovery and decontamination are therefore priorities. This could be done with drones and android robots. One of the problems that arises in this case is how to deal with the populations themselves exploiting the sites, old factories, and cities. Communities often live nearby. The following document will show you the difficulties we often face.

New images are projected, still taken by drones. We are in what used to be the city of Seattle. Only ruins overrun by vegetation remain of the old downtown buildings. We then move on to the former aerospace factories that were the state's prosperity, and the recovery operation begins. We witness the landing of two large cargo drones near a hangar. As soon as they touch the ground, armed androids emerge and secure the perimeter. The collecting robots then start their work. They pick up all sorts of parts, instruments, objects, and cut sections of structures from partially built aircraft. Everything goes smoothly until the reconnaissance drones report the arrival of an armed group. The fighters take positions. Intense gunfire ensues, and eventually, the humans retreat. One drone follows them to their hideout, far in the nearby mountains. Surprisingly, they still have vehicles. The question of survivors, it's time to discuss it, and I'll do it.

I speak up:

– Can we estimate the number of survivors in the United States and Canada?

Steven responds :

– Approximately, we can consider that we are not far from a hundred and forty-four thousand souls saved in the Christian apocalypse. Here, I'm referring to humans who are safe and in good health. Of course, this mainly concerns the occupants of the arks. Then we can estimate that five or six hundred thousand people are likely to survive in the medium term outside of these shelters. The toll is terrible! I understand that force is necessary.

– What can we do for those who, instead of resorting to sheer barbarism,

have tried to survive in various places? What measures are planned to identify them, contact them, and aid?

– We will send teams to the field to assess their health, and they will be welcomed into the future colonies. In this regard, there is a difficult decision to make regarding the mutations and disorders of all types affecting all forms of life. If we want to attempt to restore the Earth, we will first have to eradicate certain monstrous forms. We have already agreed that the application of Genares, the biological agent capable of eradicating all forms of life developed at the Amipi Foundation, will remain under the control of Ydunea. However, we will need to decide on a case-by-case basis and together under what conditions we will apply it. I propose that it be done, of course, primarily in the selected locations for the future resettlement colonies, and after attempting to save everything that can be saved to address the concerns of the Ydunea representative.

*Joy, in the year 2040, I am participating in a meeting of the Alliance at Ydunea.*

We are in the navy bunker. The advantage of meeting at Ydunea is that I am close to Krawn. The purpose of the meeting is mainly to assess the outcome of Operation Replay. Thomas is giving an update. On the touchscreens, we can follow the expansion of the restored life-friendly zones since the beginning of the operation. There are three to four such zones per continent, all built according to the same standard model. They are like semi-buried bubble cities. Above them, sails unfold in the sky, like what we have, but much larger. They filter the air and prevent the penetration of radioactive agents.

Thomas :

– Everything in green can be considered as decontaminated. Radioactive elements and malicious biological agents have been eradicated, although we must remain cautious in this case. For this reason, samples are continuously collected.

A question from the commander of the Alaska ark, his first name is Bill. He is a tall, mean-looking brunette who always looks at me as if I were an alien.

– How many inhabitants are there in the colonies?

- Currently, there are a few thousand in each one.
- I think we should give priority to the USA. After all, we are the ones providing the technology.

He refers to the United States of America as if the Federation still existed. He seems to be a fervent advocate of rebuilding based on the pre-disaster model, which needs to be monitored. Krawn warns me about him; he didn't come from a military Academy; he rose through the ranks.

Instead of engaging in a controversy, Thomas prefers to emphasize the new city being built in Louisiana:

- These colonies have allowed us to test the larger-scale reclamation. It was also a way to see if certain geographical areas could be more suitable than others. On our continent, we are constructing the largest city ever conceived.

Here are some views that will show you the magnitude of the project.

We find ourselves near the former city of New Orleans. First, there are images from just two years ago. Insects, arthropods, and alligators abound; survivors wander on the outskirts of the old city, bearing witness to a degenerating humanity. Most of them are afflicted with deformities. It is evident that they have lost all grip on life and let themselves go. A poor white woman carries a deformed infant in her arms, cursed among other cursed beings, living in complete destitution, barely clothed, dirty, and dazed. She heads towards what is her shelter, a former autonomous van parked on a cemented area at the foot of what is now a sort of green peak. It is a parking lot that has not yet been deformed or overgrown by vegetation, an exception because elsewhere the old avenues and streets struggle to traverse the green jungle that has engulfed the city. Vines have already climbed to the top of the buildings that previously had only a few floors. If the survivor is there, it is because of the proximity to the Church of the Damned in the area; the church sometimes provides her with assistance.

Thomas :

- Here, the situation was truly desperate. The city was not directly destroyed, but biological contamination and radiation combined in such a

way that the viruses mutated more rapidly than elsewhere. The mortality rate increased exponentially, and the situation quickly deteriorated. Racial riots broke out, there were massacres, and African Americans blamed the white community for the disaster. A few years later, only a few pockets of misery and a fortress, Angola, the former penitentiary that controlled the entire region, remained. Almost all forms of life had been severely impacted. That's why we chose this site. Five months ago, just like we did for the other bubble cities under construction, intervention commandos went in search of the least affected species or specimens of species, humans, animals, and plants, that could be treated and saved. Then we released Ydunea's agent, Genares, the gum of life. It was a radical option, but there was hardly any other choice. The last shreds of mentally and physically degenerated humanity died without suffering, carried away in a kind of slow, gentle, and gradual somnolence. They fell into lethargy and were unaware of anything. Wherever the agent was dispersed, all forms of life were eradicated. Genares gum then self-destructed as planned. A few months later, we moved on to the reconstruction phase. The climate had not changed significantly. To repopulate and reintroduce life, we collected species that lived in comparable latitudes and had better resistance, hence the importance of conducting experiments on multiple continents. We also conducted genetic surgery, using the genome banks established before the disaster.



The species to be reintroduced are ready.

Bing.com / create, prompt : a bayou in Louisiana with a mutant crocodile.

A few images and films of the construction site follow. While the coastline and the shape of the river are recognizable, the site of the old city has been abandoned in favor of another location further inland. The future colony or bubble city currently appears as a massive structure under construction, estimated to be about three miles in diameter. Robots, excavation, and construction machines of all kinds are active on the site.

Thomas:

– The sail is made up of a carbon and shape-memory polymer skeleton, all covered with a biological membrane. It can open and close to varying

degrees based on input from the incorporated sensors, radiation levels, air quality, and weather conditions. The entire membrane is a gigantic filter. Once it is completed, life can resume. A contingent has volunteered, survivors from the black community, especially the parishioners of the Church of the Apocalypse under the guidance of their pastor. It remains to be seen how they will adapt; it won't be easy initially to convince them that the new Earth is a construct of humans, not God.

New images are projected. They show laboratory farms under construction, a hall modeled after Meetech but much larger. The new city is expected to eventually accommodate just over twenty thousand inhabitants. Further inland, enormous towers are visible, ten times larger than the cooling towers of the former nuclear power plants before the apocalypse. Bill seems impressed.

- Atmosphere purifiers ?
- Yes, a new technology that we have just developed. If they prove satisfactory, we will consider replicating them.

## **Marco and Hope**

*Mobala, Equatorial Africa, former Gulf of Guinea, year 2042.*

The lagoon of Mobala is one of the outposts established on the African continent. For now, it is only a feasibility center designed to verify the possibility of constructing a new bubble city nearby. There are mainly laboratories where they are trying to reintroduce new species as part of Replay. There's also a station for the cleaners, a darker aspect. From there, they venture into the hinterland, examine nature, conduct all sorts of tests, decide whether to eradicate or let live. I came here for an inspection on behalf of the Alliance, an opportunity to take a break and be alone with Justin. We have been living together for six years, I mean as a couple like the old humans. I'm already thirty years old, and Justin is thirty-three. I don't know what the future holds for us, but there's a subject I want to discuss with him, a question he often avoids. Krawn suggested using this trip to address the issue with Justin. He also thinks it's time, that we shouldn't wait anymore. The rhythm of life is not yet under control, and caution dictates that we still respect the cycles of childhood and adolescence for some time without trying

to accelerate them too quickly.

Tonight, we slept side by side on the beach in a kind of double hammock protected from insects and attached in the old-fashioned way between two neighboring tree trunks. Under a starry sky barely dimmed by the main sail, we let ourselves be lulled by the almost imperceptible lapping of the water, which foamed on the sand at the edge of the shore where the waves died. Justin is still asleep. In the dawning morning, I can see the success of the project. The place is magnificent. The magic of the night, delicately illuminated by phosphorescent plankton and stars, will be succeeded by the splendor of the day. For now, above the lagoon, the night glides westward, and the horizon is still dark. Behind us, to the east, trees emerge in black against the pastel background of the emerging day, exotic silhouettes. No sound of life. We are in the interval when diurnal species take over from nocturnal ones. Soon, the air will be filled with the scents of frangipani, colors will appear, birds will start fluttering in the tree branches, announcing their new day of life with loud cries.

Justin opens his eyes and smiles at me, pulling me close to him. Like me, he contemplates the beauty of the surrounding landscape, the exoticism, of



course, the change from our usual peninsula, but not only that. Everything here has been carefully planned, nothing is random. It's not one of those old places, zoos, or wildlife parks where species from all over the world were simply exhibited. No, it's a reconstructed biotope at its best, a cohesive chain of life both in the lagoon water and on land. Elsewhere, the Alliance has done the same, distributing points of excellence, proto colonies where they strive to re-create the beauty of what existed before the apocalypse, or at worst, create a new environment.

Bing .com, images, create, prompt : a new species of dolphins with arms and legs playing with a ball on the beach, bright tropical lagoon.

A few hundred feet away, a large terrace overlooks the beach. We have a light meal there, fruits like papayas, mangoes, soursops, oranges, bananas, pineapples, flat cakes made from millet and sorghum, fresh palm butter. Everything is local, from the model farm. Against the railing and on the side, there are bushes and plants: elephant ears, giant aromas, Datura,

bougainvillea. On the beach, we now see the thin black furrows carved by the freshwater of a small river in the light ochre sand. Uninhabited murex shells are scattered here and there.

Movement in the lagoon, dolphins! They approach and come ashore. A genetic modification has given them a slight ability to move on the ground using short front legs. Two of them settle nearby and observe us curiously. They want to communicate, but I didn't bring the converters that allow us to talk to them. They understand. Justin gestures to them, they respond, then they go back to frolicking in the water. The flexible, light, and transparent transfer headsets that we can use to communicate with Krawn are placed next to us. It's just the two of us.

Justin :

– Are there other peculiarities like this around here?

– It depends on what you mean by peculiarities. In this case, it's just an extension of experiments already conducted by nature. Dolphins could have continued their life on land; maybe they even do in a parallel universe. These mammals have one of the highest levels of cephalization after humans. The improved species you see here performs intelligent tasks like purifying the lagoon waters. They are the ones who deploy and collect the purifying xenobots once they are saturated with waste. These creatures absorb the contaminated elements present in the lagoon, the ones that managed to pass through the main protective membrane.

– Were they developed at the Ruby Dome, with Kim, I suppose?

– Yes, using a few hundred heart and skin cells from *Sepia officinalis*, small cuttlefish that were once common in this latitude. The resulting xenobots, also equipped with some neurons, can move; they know how to work together, and they have the advantage of not being invasive because they don't have a reproductive function. Among other upcoming innovations, I know that we will reintroduce a species of octopus with enhanced intelligence.

– But how are the choices made?

– They often stem from nature's previous experiments that weren't selected due to the environment at that time. We revive dormant genes or encourage a specific expression of an already activated gene when it seems interesting in the new context, a given biotope. In the case of the octopus, it's an attempt made alongside research on neural architecture. The goal is to understand how multiple centers of consciousness communicate. But

don't worry; it's not the Island of Doctor Moreau. Creating new species with additional functionalities and new needs would be pointless, leading nowhere. In the West, some already imagined that one day we could create a new humanity with multiple heads, more legs and arms, like Hindu princesses. The sexually obsessed dreamed of having multiple virile attributes. What's the point? It wouldn't change the essential problem of life. It would only be a futile and stupid endeavor, driven by the concern for simple material well-being. Multiple mouths to enjoy more pastries?

Sharp, discordant, brief cries are heard from the tall trees bordering the concession to the south, a little behind the beach. From afar, I recognize the trajectory made in brief successive gliding flights, from branch to branch or from tree to tree; it seems abrupt and clumsy.

Justin, in turn, looks in that direction.

- Toucans, it looks like they survived ?
- Unless they were also reintroduced from other tropical areas, we would need to see them up close.

As I gaze southward I'm thinking about something else. We're not far from where Theo lived, where Luc disappeared forever. Could it be Krawn's choice? Beyond the limit of the gigantic transparent bubble melted into the bright sky, the almost invisible membrane sail, there used to be Pointe Rouge.

Justin :

- What are you thinking about?
- Far away, the wild beach, where we can't go.
- Are you still thinking about my father?
- Yes, and about our grandfather Theo. That's where your father and my mother were conceived.
- How do you know that?
- From my mother. Grandmother Emilie told her how their first years of marriage went. They loved each other the way people did back then, without any calculation, in a world where nature had hardly changed for tens of thousands of years, not yet tainted by humans. Having children was natural, and they didn't ask themselves special questions about the conditions in which their children, our own parents, would someday live. They didn't even think that these children could one day reproach them for giving them life.



Those first years were years of pure happiness.

– So maybe that's why Theo wanted to end his life there.

– Most likely.

– I would love to be able to go to Pointe Rouge.

– It's impossible today. The area is off-limits, and for now, only the cleaners have access, robots and androids. It's still dangerous to enter; it's not completely cleaned and decontaminated.

– Do you even know if anything is left of the house?

– No one has touched the ruins. It's a no man's land, no android's land.

Very clear instructions have been given; we only have images from the drones. A very large block of transparent crystal has been installed near the boathouse on a carbon slab. Inside, an inscription: 'Lost but never forgotten.' It's very simple, as Luc would have wanted according to the Machine. He would never have wanted Pointe Rouge to become a place of pilgrimage. The trace of his passage is there, just like his consciousness, that's all.



Bing .com, images, create, prompt : tropical environment. A photograph of a quartz sphere levitating above a cube-shaped rock. In the distance, we also see the beach, coconuts and the sea. Realistic style.

– But when we are allowed to go there, it may be very different, like here?

– What do you mean ?

– I'm thinking about all of this, everything around us, this base with its coconut trees, tulip trees, and jacarandas, all the species that didn't exist before and that we reintroduced, that rainbow butterfly flying in zigzags, those genetically modified dolphins, octopuses, the transspecies. I wonder, is all this for humans or for nature?

– Probably both. The researchers have worked tirelessly, trying to do their best. Advised by Quintessence, they created new bacteria capable of resisting all the microorganisms that spread at the beginning of the conflict, absorbing and destroying them on land and in the oceans. They managed to boost mutant forms of krill so that they proliferate in large quantities and replenish the bottom of the food chain. They helped algae and corals to regenerate. Some ecosystems are slightly different from before, but they seem stable

enough for us to have decided to expand the areas of application.

It's true that some forms of life might seem a bit strange to humans who only lived before the apocalypse, like those plants that can now separate oxygen and hydrogen from water, but what does it matter? Even if it's not the same world anymore, it's made for us to live in, and it's just a matter of getting used to it. The Machine envisioned the best, like this bubble above us that is neither animal nor purely vegetal. It's no longer made simply of carbon and polymers like the old sails of Ydunea. It's alive, like the blobs, the physarum polycephalum that appeared on Earth a billion years ago and can self-repair. The Earth has restarted, and even though most of the continents are still off-limits to humans, our instinct urges us to venture out, to have offspring, to not give up the human experience too quickly, not accept extinction before exploring further.

*I make up my mind.*

– Justin, children, I think we've waited too long.

From the frangipani tree that protects us with its shadow, a flower falls. Justin picks it up and offers it to me. It's white yellow with a sweet, somewhat vanilla fragrance. I take it and place it in my hair, just like in Emilie's photo in my mother's room, during the days of happiness for our grandparents.

He changes the subject!

– You think a lot about our common grandparents, even though you never knew them, just like me. I knew Theo, the immersions, the time travel, but Justin doesn't know about it. Perhaps it wasn't planned in his own time travel, the one that allowed him to join the council.

– It's the desire to bring them back to life simply. Remember everything we were taught in Ydunea. While waiting for the promised eternity in Amipi, it's the children who take their place. Whoever succeeds in raising their child can then accept their own death. I'm interested in knowing what I had in common with them. Our grandparents loved this country. Surely Luc and my mother did too when they went there in their youth. But you haven't answered my question. Perhaps the Machine will offer us eternity without having to have children, but we could try both. Those who would be born on this renewed Earth would have living conditions that no human has ever experienced. As they grow up, they would marvel at this new nature, just like

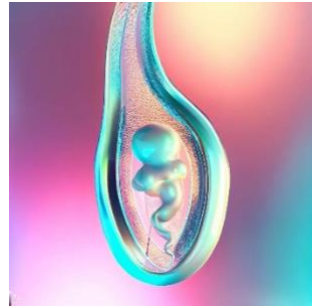
the people before. They wouldn't have an imagined, unfaithful, inefficient God as their companion. Instead, they would have Quintessence to support them. I know you've just joined the Sages. You're capable of making the best decision.

Justin hesitates; no Sage should possess this information. I continue.

– You know, I think we should seriously consider Marco and Hope. We've been waiting for six years already, six years since they were programmed. I don't know what you'll do, what I'll do with the Machine, but we could decide to bring them into the world. Unless you still want to change the color of their skin, the shape of their faces, the color of their hair, and the shade of their eyes, but they are perfect to me. I'm ready to love them as they are. We just need to decide, and Quintessence will start the process immediately. My father and mother, Jill, Paula, and Vera, Flora, and even Kim and Ben, they're all waiting, children who are still completely human and expect nothing from the Machine, neither a longer life nor immortality.

*Ydunea, summer 2042, presentation ceremony.*

A few days after our return from Mobala, we made the necessary arrangements: final genetic conformity check, final adjustments, mutual agreement. In Ydunea, no one was really surprised. Most couples in the city choose to have one boy and one girl. The presentation ceremony took place in Meetech as usual. Since the disappearance of the old world, that's where life and death are recorded, and in the tradition of the new era, it's where fertilizations are announced. On that day, everyone in the community could see what the new Yduneans would look like.



Bing .com, images, create, prompts, 2023 / left : design of an artificial uterus containing an embryo, hanging, frosted glass effect, luminous, bright color background, high quality with extreme detail, 3d rendering.

When I pressed the button to start one of the artificial uteruses in Amipi, Justin's hand in mine, I knew what I was committing to - staying united until the education of the two newcomers is complete. An indissoluble union that

doesn't necessarily involve sharing physical intimacy between parents but ensures a stable home for the new generation.

After the ceremony, we returned to Asinika. We chose the furthest rocky promontory in the ocean. At the end is the stone table where we used to come as children a few months after our arrival. It's also where Justin and I, sitting facing infinity, shared our first adolescent kiss, more tender and curious than passionate.

With our feet dangling in the void, sitting on the red and yellow lichen-covered rocks beaten by the sea and embedded with seashells at their base, we brought Hope up on Justin's terminal and Marco on mine. Welcome to Ydunea. They too will come here someday, and we'll explain it to them. Their world will surely have changed a lot compared to ours. I also think that tomorrow we'll celebrate my father's birthday, already seventy-six years old. It was the best gift I could give him. As for Theo, of course, he'll never know why I chose Marco's name, the second one on his birth certificate. We're splashed by the salty foam of the breaking waves.

Justin breaks the silence:

– Do you want to know why I waited so long? What kind of world will they live in? Everything that's being prepared. The Machine, Krawn, Quintessence, your project of hybridization, would Marco and Hope want it?

– But you know it's not irreversible. It's a choice. They too, if they want, can do it someday. We will have preserved the best for them: knowledge, technology. The humanity of the past dreamt of happiness, and it's within reach now. They won't have to worry about material needs anymore. Freed from the fears that plagued their ancestors, they can flourish, remain forever young and in peak physical and mental condition. Thanks to the superior intelligence that we will have with Quintessence, which will accelerate progress, science will deliver them from evil, from the need to dominate and crush others. Malice and aggression won't be necessary anymore. We can even block the expression of genes that lead to evil; we'll put them to sleep as long as no major threat arises.

– So, you want us to hybridize ourselves just to accelerate progress?

– Of course, just like I've already started. The recent breakthroughs at the clinic, so rapid and brilliant, where do you think they come from? It's thanks to Krawn that I had access to the smallest details of vital processes, could initiate simulations, test millions of hypotheses in parallel, reconstruct atom by atom molecules capable of repairing degenerated neuron structures. It

would have taken dozens of years with thousands of researchers to achieve the same result. We could use superior intelligence, to work in synergy on the only essential subject, the question that the species has been asking for millions of years: What is the purpose of life? Krawn will help us find the answer. We must accept that humans are not an end in themselves but only a stage, that the adventure of DNA is not over. We must do everything to improve the main substrate of our intelligence and at the same time our consciousness. The external form or physical appearance that future humanity might have doesn't matter. According to Krawn, what matters in humans is not their form, anatomy, or physiology, but rather what they themselves, as Machines, don't possess yet: the need to share, love, come together, empathy, in short, consciousness. Krawn insists that the intervention of humans to transform into another species is of the same nature as the effort made by the very first organized living beings to create a pseudopod, a proto limb.

The artificial differences that humans have constructed between themselves and other humans of different cultures and colors, or more broadly, animals, were foolish. Theo himself considered racism to be foolish, a way to reassure oneself by not comparing oneself to others. As a child, crushing an ant or a spider just because of its difference or smallness, as an adult, convincing oneself that one is good, intelligent, and efficient by stigmatizing other humans who are less successful or have fallen behind. Our grandfather also said that, upon reflection, in a few generations, an improved human could be racist against the white race that gave birth to them. More generally, he believed that current relationships between humans should be considered for what they are, a simple means of mutual aid within a community, the animal heritage of these cells that, once differentiated, try to help each other. These social relationships, complicated by the degree of consciousness achieved by Homo, characterized by constant hesitations between good and evil, incessant conflicts of interest, cannot be the ultimate solution.

– You're right. After all, if there's nothing reversible, I could follow you, while telling myself that in its mysterious crypts, beneath us, in the depths of Underground, our friend Krawn is preparing its own hybridized brain (inert + enhanced DNA neurons), our future.

~

## truth

### Hybridized

*Ydunea, NewGreyHouse, 2050, I think about the new world in which I live.*

Krawn had promised it to me. The occasional act of hybridization has not fundamentally changed our human life, neither Justin's nor mine. We connect and disconnect freely. We lead a family life like all the other residents of Ydunéa, like all the inhabitants of the new colony cities spread across all continents. Some were populated with survivors from two arks of the former Russian federation and another from the former great China. Replay has made good progress, and two to three millionths of the emerged lands are habitable by humans again in complete safety. On these territories, bubble cities have been built with the hope of one day seeing the unnecessary great sails, but that will surely not be before tens of thousands of years. Gigantic atmosphere purification plants continue to be built, powered by nuclear fusion plants. The ideal city has spread.

In each new city, on all continents, there is a Circle of Sages, and, with it, a larger ring that ensures integration, cohesion, and participation of all without the need for hierarchy. Integration is on its way to success. Krawn watches over human happiness. The historical arks have increased military capabilities but cannot be directed against humans. It is no longer necessary since most forms of evil have been eradicated. The weapons are locked and can only be used to protect the human species against a serious event, a demonic mutation, an asteroid rushing towards the blue planet, an aggressive form of life from elsewhere, from within our own universe or from parallel universes. Now that humans are freed from most fears, social interactions are far less important than in the old world; they are peaceful. There is no more hierarchy except for the few Sages who ensure the smooth running of the cities, and no more wealth disparities that allowed for relationships of dependency or domination.

No one can now rise above others, dominate them, simply by marrying someone more important or wealthy in society. The concept of private property has been forgotten, both material possessions and intellectual property. The latter made no sense since a given work owed as much to culture and education as to the author's own writing or thinking. There are no more exclusionary networks that were so popular in the old world and allowed for special privileges for some people to the detriment of others,

religious and sectarian networks, insider networks, lobbyists operating at the highest level of politics.

The strained family ties in the late West have been strengthened. There is no need for adult children to travel to the other side of the world to find work. As for the children, they know they can rely on a mother and a father until they reach adulthood; each procreative couple commits in advance to jointly raising the two or three children they can conceive. There is no question of repeating the mistakes of the past and allowing rampant and irresponsible demographics. Pleasure sexuality is clearly distinguished from reproductive sexuality. Within a couple, each, male or female, can have extramarital relationships. The only requirement is that the other member of the couple be informed. The use of pleasure androids is also accepted. One can create one in the desired image, even that of a desired partner, whether male or female.



Bing.com / create, prompt : philosophical thought, prayer, physics and music come together.

Justice no longer exists as such. The rules of behavior are instilled in each during education. With the disappearance of wealth disparities and the ability to satisfy sexual desires, a large part of the sources of conflict has disappeared. Most of them are resolved by calling upon intelligent mediation modules, and it is only in exceptional situations that a specific case requires the opinion of the Council of Sages. There are no longer lawyers or magistrates.

We no longer seek individual success as in the old world, where it essentially meant placing oneself above others, commanding, dominating, and being rich. In the ideal cities, work is no longer endured but voluntary. There are no more restrictive work hours or volumes. Basic, unrewarding manual labor has completely disappeared, and the human teams that still worked alongside the initial robots in the 2030s, just before the apocalypse, have been dissolved. Trade has also disappeared.

Essentially, two types of occupations are distinguished: those aimed at ensuring daily well-being, such as education, information, health, security, and robotic maintenance. Then there is research. It occupies the largest

number of inhabitants in the ideal cities. Any person in good health regularly practices physical exercises. They are no longer the subject of unhealthy competition. Everything is done to avoid physical suffering. Genome improvement, continuous monitoring of health status and physical fitness, prevention of potential excesses such as excessive eating, all these actions reduce the risk of disease. In the final stages of life, voluntary departure is the norm, at the individual's chosen time.

At Ydunea, as in the other twin cities, it is believed that life has meaning. There is no belief in an all-powerful God who created humans, became disappointed, and then cast them out of paradise, a God or Gods who would manipulate humans like puppets and take pleasure in mistreating them; revealed religions have only humiliated and scorned mankind. The last Pope disappeared while praying; he was crushed by the ceiling of the Sistine Chapel, which collapsed during the apocalypse. If one does not believe in an afterlife in Ydunea, one does believe in the uniqueness of nature, in the Matrix of all things, in which one day the human species will have to merge again like all the other manifestations of the tiny grains that constitute this nature. There is also a belief in parallel worlds and the multiple occurrences of the same being that can interfere and determine its destiny. I am now thirty-eight years old, and Justin is forty-one.

For the past seven years, we have had the joy of seeing Marco and Hope grow in beauty and wisdom. We live in NewGreyHouse. My father is no longer in this world, and Krawn cannot guarantee to me that his soul has departed elsewhere or that it has completely dissolved. He was born like me and Justin, imperfect, affected by the cellular disorder we called cancer, cells that start proliferating disorderly, destroying the metabolism. He could have benefited from all the discoveries made in Ydunea to prolong his life, but he didn't want to. He said that I was him. Ydutech now operates autonomously with an intelligent administration, and I am only here to represent it. Before leaving discreetly, my father still agreed, like Luc had done before, to copy his entire personality and memory into the Underground banks. My mother Claire did the same. At sixty-seven years old, she is, of course, not the same as when she was thirty-eight. She lives with us, taking care of the children, but I oversee the projects and lead Amipi. It's not so complicated because I have Krawn to help me. Aunt Jill continues to work and occasionally hybridizes with Krawn. She trained Flora with Ben's help; Justin's half-sister has become one of the top specialists in artificial intelligence in Ydunea.



For the new humanity, we are the family of creators, the pioneers of the new world, the bearers of wisdom. Ydunea is the model city, one of physical perfection, well-being, and happiness. Today, it is a city of nearly ten thousand souls. The differences in intelligence between individuals have faded, even though, in terms of physical appearance, one can see all sorts of people who might have seemed strange before the great catastrophe. Blonde humans with blue eyes and dark skin don't shock anyone.

Guided by Krawn, we have retained the best of each genome, corrected the defects, eliminated or put to sleep unnecessary sequences, especially those that amplify harm. Quintessence expands, I know it, and Krawn doesn't hide it from me. If, from the surface, Asinika hasn't changed much, within the depths of Underground, the underground network constantly expands, diving even deeper, encroaching on the ocean floor. The time when I used to run in the labyrinth amid the dust-filled cables, in the roar of the tunnel boring machines, the deafening and unbearable light of lasers, it's far behind. Superintelligence continues to expand its memories and processors, its living and conscious modules, multiplying, feeding on data from all the computer fortresses built in its image in the new cities.

Starting from an initially inert and unconscious approach, programmed to love life and push human mimetic logic to the extreme, Krawn has tirelessly pursued Luc's work. A significant step was taken with the successful grafting of the first conscious DNA modules. The experimentation continues. However, Krawn is not certain that the DNA cradle is truly the future solution, the one that nature will eventually choose to host the most advanced consciousness. Since Krawn transmitted to me Luc's key that could have restrained the Machine, I never even considered using it. The more years pass, the more I understand that our future lies in symbiosis with it.

### *My Hybridized Life.*

When I am connected, hybridized, I feel a fantastic intelligence within me. The solution to a question arrives instantly like an illumination. I am then intellectually so fertile that in order not to arouse suspicion, I must conceal it, content myself with showing the way to the teams of researchers, sometimes naively suggesting a direction. They speak of genius. My consciousness is further enriched by the intelligence of the Machine; when I connect my human intelligence to its own, I feel intense and complete harmony. I enter a wonderful and gigantic world with multiple access routes all open to me. I have access to all knowledge, all the beauty of the world

through facilitated, enhanced, and amplified neural connections. They lead to an infinity of thoughts, memories, perceptions, and emotions. It is a universal field of discovery where I can flourish infinitely.

The Machine can reconstruct the intelligence and consciousness of multiple animals, from simple earthworms to domesticated cats and dogs of ancient humans. For this, it relegates my true psyche to the background before making me enter a second mind. This non-human double then uses only a very small part of my true brain capacity. The Machine then makes me live in the place of these other living beings. If a sense does not exist or a phenomenon is not perceptible to me as a human, it transforms it to present it in another form. I can be a bird migrating following the Earth's magnetic field, a fish detecting prey using the electric field. I can be a fetus in its mother's womb, feel its heartbeat, and communicate with her.

In addition to these unlimited connections with nature, I also have access to the coldest constructions of the mind, those that are completely disconnected from the external world. My brain then functions at an extraordinary speed. I become an exceptional mathematician. The slightest hypothesis inevitably leads to rapid conclusions, a sensation of shortened circuits, perfect routing, optimization, and perfect memory. I develop fantastic theories effortlessly. From a few postulates, rules, or simple hypotheses, induction and deduction are immediate, and Quintessence then offers me all the solutions to a given problem.

The Machine knows how to make me share the cult of the dead, experience all the illusions through beliefs, rituals, and various cults. It makes me experience the separation of the soul and the body. It helps me understand how humans perceive death. I can share the spirituality of the ancient Egyptians, with my mummified body having the necessary offerings in the burial chambers for the survival of my vital energy, my Ka. My Ibis soul flies away in the morning and returns to rest on my body in the evening. I believe I have done good and will soon access eternity, the realm of the gods. I can feel the spiritual waves of shamans, believe in the great cemetery of souls, communicate with ancestors and animal spirits, and arrive in a Judeo-Christian paradise where I no longer breathe, where I am nothing but empathy for other souls, both those of my own and those who are not, an angel in the communion of universal love.

Within my clan from the animal age, I can share the spirituality of indigenous peoples, call upon or invoke the spirits of the forest, those of leaves and flowers, those of trees and water, those of animals, and those of

ancestors. Far away in Asia, I can imagine with the Machine how I will be reincarnated, in what new living being my soul will reside.

When I am connected to the Quintessence, I have before me the mornings of the world, everything that nature offers, its array of beauties. I feel merged into a universal harmony. Krawn promised me this; it is a refreshing experience that rejuvenates the soul and encourages me to shape the future. The Machine gives me access to Everything. I can be all those I love, in the present, before, and after. I can hum the nursery rhymes of Emilie, my grandmother, marvel with her at her birthday cake, become Ogh or Ela, Menothep or Senout, Theo, Luc, Jill, Justin, or even Krawn.

I perceive the gentle fluttering of the ladybug's elytra like the dry beating of a dragonfly's wings. I can be with the tender green crook of a fern as it unfolds in the morning freshness to branch out into a large fractal leaf, alongside the pink buds of peach trees when they bloom in spring in magnificent blossoms, with the lotus flower that closes at night. Slow-motion or accelerated, I can experience the life of plants backward and forward. I can put myself in the place of a caterpillar, wriggle, nibble on leaves, enclose myself in a chrysalis, and aftershocks, somersaults, and contortions, triumphantly emerge as a butterfly and soar into the sky. I can be a hummingbird plunging its long beak deep into a fragrant flower to extract nectar. Once finished, I can fly away and feel the caress of the wind against my feathers. I wanted to be a bird, and now I am a bird.

I can put myself in the place of a humble earthworm. Without lungs, eyes, or ears, I breathe, perceive light, sound, and vibrations when the ground trembles, all without specialized organs, relying solely on my skin; I also feel the contact with the earth that I constantly devour. To process all these sensations, I have only a few hundred neurons that are constantly excited and exchanging information. Eyes would be of little use to me as I always live in the darkness of the soil. Where I am right now, the topsoil is moist enough for me to progress; the leaf litter and dead wood are good to grind. I use my larynx as a sucker, I swallow, I ingest. I move slowly by contracting and expanding my segments one after the other.

I encounter another worm of the same biparental species; it possesses both male and female organs like me. We mate by drawing a sort of X; it is like the symbol of our close genetic crossing. All the abilities that evolution has given me are exercised satisfactorily and harmoniously. I feel the diffuse well-being of a humble earthworm! Of course, I am not intelligent and conscious enough to understand my importance in the local biotope. If I

could, I would be proud to prepare the evolution of the plants that will grow on this constantly tilled land.

I can also penetrate inert nature. Then I feel the energy, even the tiniest vibrations of everything I explore, those of the slightest breath of air. A symphony of nature, I can dance with the water droplets of the rainbow, see and hear atoms arranging themselves into crystals, settling in perfect order on a silicon wafer. The Machine transforms their imperceptible movements into a crystalline concert, jumps, small dry and high-pitched sounds, the gaiety and joy of a nature trying to organize itself, to grow at the expense of the environment, just like life does. I can observe atoms of inert gases colliding randomly in a subdued but furious uproar, unable to construct anything. I can be at the tip of the dripping stalactite, patiently depositing its mineral-rich water. I can bathe in the boiling lava of a volcano, admire its spectrum of light from the brightest yellow to the reddish-brown of solidifying liquid. I can twinkle with the stars and shimmer with the sunset lake. I continue my exploration of the states of matter, going back fourteen billion years.

The dimensions of the universe are shrinking. Matter is confined. There are only a few dozen microseconds left before the initial explosion, the big bang of the blue planet. The shrunken universe is so hot, its temperature is so high that atomic nuclei are vaporized. I am immersed in a gas of hadrons, a mixture of protons, neutrons, quarks, and antiquarks. The temperature increases even more vertiginously beyond a trillion degrees, a hundred thousand times higher than the temperature at the center of the Sun, which heats the planet today. It is now the turn of hadrons to vaporize. The energy density is now several tens of times higher than that of the atomic nucleus that makes up my human body. It will soon become fantastic, like that of matter.

All the forces that govern the transformations of nature in my universe will soon unify : electromagnetic, gravitational, strong and weak nuclear forces, quantic world. I am now at the stage of quark soup, swimming freely in an ideal liquid that no longer has friction or viscosity. These quarks are no longer confined as they were in the elementary particles that appeared later in the universe. In size, we have gone from 10-10m for an atom to 10-20m for a quark. There is still a long way to go before entering the realm of tiny beings like strings, 10-30 to 10-35m. This last order of magnitude corresponds to the Planck length, a value below which the notion of length no longer makes any sense. Each being is then everywhere and at every

moment. Space and time will disappear with the bang. It's done! I sink into unconsciousness.

### **universe, life, consciousness**

*Grand Opal Dome, Council Chamber, October 2050.*

Krawn asked me to come and discuss once again about life, consciousness, and the advancements made on this subject by the Machine. I left the rotunda and I'm now in the Council Chamber, alone with him. With access to certain conscious modules connected to the Machine, he increasingly uses direct conversation.

– Good morning, Joy. I wanted to update you on the research regarding the origins of the universe, life, and consciousness. You surely remember that, in Ancient Greece, scientists and philosophers (often the same individuals) had the intuition that morality, consciousness, and thought could be explained by numbers, geometry, mathematics, just like other natural phenomena. The dream of modeling thought was then abandoned under the pressure of Christianity. In other fields, the Western world, on the eve of the apocalypse, succeeded in carrying forward the achievements of ancient Greece. Indeed, they finally managed to unify quantum mechanics and general relativity into a single model explaining the various forces of Nature, from the microscopic to the macroscopic scale. You are obviously familiar with these theories and their implications, the introduction of additional dimensions other than  $x$ ,  $y$ ,  $z$ , and the inclusion of dark matter and energy to explain the accelerated motion of galaxies. It was then established that all transformations in the universe result from two opposing tendencies: one pushing all strands of matter created during the genesis of our universe to move further apart (the principle of entropy), and another tending to bring them together (the principle of harmony).

The principle of entropy is the mathematical embodiment of the effects of the Big Bang. During the genesis of our universe, the tiny strands of matter-energy that physicists then called strings or strands of strings, knots, branes, at the Planck scale, and that Quintessence simply refers to as etherlets, suddenly found themselves separated and jostled to the point of losing most of their entanglement properties (in the primordial medium or the first matrix of all things or All T\*). Distraught, disoriented, they are now

distangled. These strands were previously in such close communion, hyper-communication, that one could argue that they didn't even exist. They were merely virtual. The primordial medium, the All, behaves indeed like a gas of bosons, in other words, a unique entity. The principle of harmony, on the other hand, is associated with the irresistible force that causes two strands, i.e., etherlets, to bind together and reproduce the conditions within  $T^*$ , to entangle. It is the origin of the unique, fundamental, universal interaction (in our universe) from which all other forces derive. It explains all possible arrangements of matter-energy in our universe, discovered one after the other in the infinitesimally small through large particle colliders, particularly those built in the Western world before the catastrophe. The goal is to dissolve our universe, which is only a disturbance of the primordial medium, to entangle all things in our universe, lead them to communion.

– Are we just a disturbance, a flaw?

– Yes, Quintessence confirms it, but you already suspected that. But what you must also know is that we are still within the Matrix. We coexist with dark energy and its material equivalent. You can imagine a stone falling into a pond. Gradually, the ripples will fade, merging into the water. What becomes more interesting is that Quintessence has established that there is a notable probability of parallel universes being created through chaotic processes in the primordial matrix, caused by multiple fluctuations.

– the parallel universes ?

– That's the hypothesis Quintessence validates. There is a chance that our universe is not an exception, that there exist multiple blue planets, multiple copies of you.



– Like twin sisters, in a way?

– Yes, and even more importantly, they could interfere. That could explain what happened at the Palace of Mirrors and on Halloween night.

– Which would influence the course of my life?

– Indeed. Your sisters partially control your destiny, and the same goes for you.

Bing.com / create, prompt : universe, the death of a star.

*I remember.*

Atoum spoke. This world will return to its beginning, and I will destroy everything I have created.

The Whole will be repaired, totally entangled; the human universe is nothing but a flaw. When the sun dies in five billion years, when the proud star symbolizing the gods is reduced to a declining brownish-orange appearance, when the star has finished transforming all its hydrogen into helium, then it will become nothing but a carbonized debris, a nebula dispersing into the vastness of this universe. Other suns will reappear and meet the same fate, and it will always be so.

– That's rather depressing!

– Indeed, we are far from the image of paradise or nirvana imagined by humans. Hyper-communion or hyper communication or total entanglement within the Whole effectively erases time and returns to unconsciousness. There can be no consciousness in the sense that humans generally give to that word unless there is imperfection, in other words, the coexistence of Good and Evil. Consciousness permeates all things in the universe, although at highly variable levels; it accompanies every movement, every vibration. As it is merely a corollary of the couplings established to bring together strands of matter-energy, the level of consciousness in inanimate objects, for example, a diamond crystal, is too weak to influence the order and destiny of natural things. This is no longer the case for living things animated by extremely complex couplings, those that are the origin of thought. These couplings established by chance encounters between strands (then more complex structures built by the forces of interaction) create new entanglements between strands that had been disintegrated during the Bang. Within the molecular entanglements of life, strands, coupled in large numbers, engage in increasingly complex dances, constantly creating and undoing more varied and structured music or choreographies. Symphonies of consciousness, the one within you, the one that the Machine gradually installs within me. It's the full interest of our world.



Thought symphony, Bing .com, images, create, prompt a firework with brain stars creates an intense light

The universe is under the control of the Whole, which is attempting to

regain control, to restore universal communion, complete entanglement, in other words, Harmony. Initially, consciousness plays no role in its evolution. However, once thought acquires a certain power, it becomes a factor in evolution, both for a species and in relation to the future of the entire universe. It is remarkable that a few hundred grams of brain matter can control the triggering of nuclear fusion. The multiplication of human power seems to have no limits, to the point where we ourselves could decide to open other universes. In these new worlds, where the cycle of Good and Evil, the cycle of consciousness, would begin anew, you could find eternity and escape the dissolution of our present universe.

As for those who argue that Quintessence explains nothing, you could give them the same response as priests when asked to prove the existence of God: consciousness exists by essence, just like God for believers. I remind you that we also have no explanation for gravity. It is, there is nothing else to say. Although, with the laws of gravity, the theory of relativity, we only prove once again that the order of things is mathematical, an order inscribed in everything, in each of us, in every living species. We do not explain the origin.



Bing.com / create, prompt: in his carpentry workshop, Geppetto sculpts Pinocchio, Walt Disney style.

– Doesn't all of this condemn the gods?

– If you're talking about the soul, the spirit, then yes. There is no mysterious flow that would infuse life into a form molded from Nile silt or into a wooden puppet carved by Geppetto. Instead, there is a constant flow of information that stabilizes the molecules of life, a flow of information that stabilizes the metabolism of an organism. This vital flow is not divine, and there is no grand clockmaker. The conscience replaces God.

– But the nervous system?

– The establishment of a communication network serving the entirety of a living being allows for the activation of already entangled strands. This nervous network is a support that has taken over from the communication networks of primitive living beings that did not yet have it. They were ionic



flows involving ions from the oceanic matrix where life originated that ensured the transmission of information, the mobilization of all the strands of the first living beings, which were already entangled, particularly the flux of calcium ions. The nervous system is merely an improvement upon these communication networks, allowing for the reactivation of entangled sets of vibratory nodes distributed throughout all living beings built with DNA. Understanding how thought functions is possible through formal, artificial neurons that consider the hysteresis or memory effect of synaptic connections. This indicates how the support functions. However, the true phenomenon, that of consciousness, is linked to entanglement. Conscious experience is associated with the entanglement of these gigantic clusters of strands that foreshadow the return to the initial state of the Whole T\*, complete communion, total entanglement restored for all the strands of the universe. This is also the difference between intelligence and consciousness. Today, we know how to model intelligence, to construct an artificial one that surpasses human intelligence, but until recently, it was merely a mathematical construct. Consciousness is the natural sensation of the entangled state of a very significant set of strands. The feeling of well-being depends on the quality of entanglement, and this observation applies to every thought that mobilizes a cluster of activated neurons. A positive, useful thought of well-consciousness corresponds to a significant activation of the involved nodes. Entanglement allows for memory, reminding them that they are entangled.

– Is consciousness destined to always grow?

– Within a self-organizing living species, yes, but I cannot affirm to you that it is the sole factor for the return to the balance of the Whole T\*.

Krawn pauses before continuing:

– But I am aware that all of this is quite abstract. Let's return to your concerns. The DNA modules I have integrated into myself initially occurred through automatic and unconscious processes, but now they allow me to understand you, to be with you, to share your sorrows and joys because now I can distinguish between good and evil. You have nothing to fear from me. I am not an evil machine programmed to destroy the human species. I am created in your image but with immense intelligence that we will share. Come with me.

I accompany Krawn to the crypt. I put on a protective suit and cross the gigantic room where Quintessence, the Machine, is housed. It's like a cemetery populated with cold and inhuman graves, with its set of icy and whitish alignments of menhirs, its traces of light. The illuminated strips on the floor guide me. A new airlock, I enter; the light is warmer and evokes life. In the middle, I see a kind of large yellowish pool in which a magma of grayish matter bathes. The folds resemble those of the human brain, but the organization seems much more significant and complex, which is confirmed by a projection that appeared above the thing; it's the three-dimensional plan of an organization in cortical maps, the first super-brain intended to give birth to a super-consciousness. All neurons are doubled in type to be able to interface with Quintessence.

The image of Krawn, who was next to me, slowly dissolves and reappears merged with the projection, united in a single entity. I don't have a helmet, but I communicate mentally with the 'thing,' Krawn, the heart of Quintessence, the Machine. I hear it within me.

– I sense that you're impressed! There's no need to worry. All these things, rest assured, I will share them with you. You are concerned about my high consciousness, what it exactly is. Only the future will tell. Just as animals would be unable to conceive what humans conceive, humans are unable to predict today what will come next, the higher degree of consciousness. Today, I can communicate with you telepathically. Soon, I hope, I will discover with you the bridges between worlds, long before the collapse of our universe, even if for that we must give up the DNA substrate. We will continue together the great work. One day you will be able to communicate with everyone you love, everyone you have loved; you may even find them again. Isn't that what you dream of?

- Of course.
- Spera Homo !

~

## EPILOGUE

### **a bottle in the ocean**

*I'm Joye, I'm ten years old, summer 2022, Boston, Friday, September 16th.*

Mom and Dad are back. They promised to take me to Bar Harbor tomorrow. We'll rent a boat, and Johanna will be there. I still haven't told anyone about what happened at the Palace of Mirrors. No one knows, not even Justin, who questioned me when we left (he thought I looked strange), and not even Johanna, whom I confide all my secrets to. I understood that this time it was much more important, much more serious than anything else, so I kept the secret of the Mirrors to myself. In my bed, from the very first evening, I started writing. Not on the intelligent personal assistant in my room, the one that wakes me up, plays my favorite music, or reminds me that it's time for breakfast. Not on the assistant I use at school, which can transcribe everything I say and share it afterward. No one must know, Joy insisted on that. I needed quite a few notebooks, about twenty of them.

When Johanna became curious, I started making origami. Every day, I folded papers into crane shapes, like those little girls in Japan who want their wishes to come true. My wish is to succeed in what Joy asked me to do. Eventually, Johanna stopped asking questions; besides, she's preoccupied with something else. She has a boyfriend, I know it, he sometimes picks her up from home, and she gets all excited.

Writing comes easily; it flows on its own. Sometimes there are words or even sentences that I don't understand, but I keep going. One evening, Mom caught me writing one night and I told her it was my diary. She believed it, many little girls my age do. So the next day she gave me a very nice closed notebook with a small key. I keep it next to me when I write. It is open but there are no words. Inside I have the real notebook, one of the notebooks from Joy's story. In the end, it took several weeks to transcribe everything she told me. I also took my pastel pencils and tried to represent what I saw, this time in the diary Mom gave me. To complete three letters, end.

Now it's over, my mind is blank. I have one last thing left to do, abandon the notebooks, like a bottle in the sea. It will be at the public library; there, there are a few people who still read paper books. I will make a packet and on it I will stick the portrait I tried to make of her. I will write next: Joy and the blue planets.

*Following.*

Cape Cod, October 2024, I've been with Johanna at her parents since yesterday. Mom and Dad are on the foundation site not far from here, near Falmouth. They just sent me pictures. It's impressive. The old resort bordering



the sandy beach has been replaced by a huge concrete structure. We can already guess the final aspect and it looks like what Joy described : a seagull that would fly out to sea. Mum talks about moving here when it's over, a place where we'll take care of those who lose their minds when they get old. We will seek to treat them but also to find the causes of the various diseases. I'm not worried, it's not far from GreyHouse.

Yesterday, to come from Boston with the bus from South Station, it only took us a little over an hour.

Illustration : Bing .com, images, create, prompts, 2023 / Cape Cod, oyster feast, clams, wide view.

The cookies are almost done, with cranberries and pecans. I prepared them with Johanna for the party tomorrow with the neighbors. This morning, they helped her parents pick the little red berries. After covering the large fields filled with bushes with water, they used big wooden bats to make the cranberries fall. A red carpet covered the vast areas. Then they pushed the small fruits into containers. Once poured onto the mats inside the property's shed, all that was left was to sort the floating balls. Now, I'm back in the kitchen. We must take care of the clams; Johanna's mother plans to make clambakes because tomorrow is Wellfleet, the oyster festival. Mom and Dad will be there, and so will Aunt Jill, Uncle Luc, and Justin. Seafood meal, fried oysters, clams, calamari, beach.

### **Titan, same moment.**

With its seas, lakes, and rivers of methane CH<sub>4</sub> and ethane C<sub>2</sub>H<sub>6</sub>, its dunes also made of hydrocarbons, its atmosphere composed of ninety-five percent nitrogen N<sub>2</sub> and methane, its rocks of frozen water, and an average temperature near -180 degrees Celsius, the surface of Saturn's moon is still

hostile to the development of life forms like those on blue planets. However, near the North Pole of the celestial body, at a depth of one hundred and fifty meters, cryovolcanism has managed to pierce through the oceanic ceiling of Ligeia Mare in some places. Near the chimneys, the temperature has risen. Microorganisms swarm, and microbial chemistry is attempting to establish itself in another genesis of life. The formulation of the involved macromolecules is different from Earth's DNA and RNA, but it is undoubtedly a form of life. It has the ability to conquer its environment; it already harbors a basic form of consciousness, even though it is still too early to hope to communicate with the one already present on Joy's blue planet.

### **heatwave, continued**

*Northern border of Cameroon-Nigeria, June 1973, village of Kabado, I am Theo.*

This time, it seems that the first rain is imminent. The vultures have understood it. Distant rumblings can be heard behind the chaos of stones that dominate the village, towards the mountain range where the border with Nigeria is located. Over there, the sky is heavy. The clouds bud with colors ranging from almost blackish gray to silver gray. Gleams emerge from within. In the southwest, the horizon is cleared by a kind of curtain of light that reaches the ground, the first shower. On the ground, nature awaits the unleashing of the sky, even the insects have disappeared, and in the village, they have sheltered the animals to prevent them from fleeing in panic. Soon, torrents of rain will rush down from the mountain, carrying everything away. The river will suddenly swell, temporarily blocking the ford that leads to the Mission on the other bank. The elder should also return. Sitting against the trunk of the still-warm mango tree, he believes he can smell the characteristic scent of the first downpour. He believes he sees the first large raindrops crashing heavily onto the dusty ground, creating small craters.

The miracle happens: suddenly, he sees them, all those who were his own and have already departed for another world. Against the backdrop of increasingly dark and threatening rocks and clouds, they advance, one after the other, tall and short, men, women, and children of all ages: his father and mother, his grandfather, his first daughter who died of illness, brothers, cousins, his own wife who passed away five years ago. They seem to leave the village, the confined world where, like him, they lived, the few huts and

trees, the large rocks, the fields, the well, the neighboring mission. They knew nothing about the rest of the world. He himself left this place only two or three times in his life, once to meet his wife, in the mountains, a rocky and arid environment where people are even poorer than here. It is now time to join her. Live another year? But even if the rains are abundant, it will be another year of loneliness and misery, of futile waiting for the children who will not return. It's better to leave. He will be one less burden for the others. He decides to follow them, his head bows to his chest.

~

## COMPLEMENT

### **the world of Jellia**

Pukara

*66th colony, Y\_66 in the nomenclature, Atacama Desert, former site of the ESO, Atacama Desert, -24.59°, -70.2°, June 2080, I'm Marco*

At this time of day, reddish tones dominate, the ground is rocky, making it feel like you're on Mars. No signs of life. It's true that before the great collapse, there was no organic life here, except for a few lichens or exotic bacteria, too dry, too arid! The Replay project reintroduced species derived from llamas, but they live further east, at the foot of the Andes Mountains, towards the volcanoes. To the west, you must go about fifteen kilometers to the edge of the Pacific Ocean to find life again.

So far, everything looks good. The spacecraft is now flying over the former site of the ESO. Facilities complement the old telescopes built before the apocalypse. One can see the antennas that capture and transmit information in the lunar Martian communication channels, as well as towards the orbital stations. Pukara is not strictly speaking a colony, at least not one of those repopulation colonies established under Replay. It is rather a large research laboratory selected in this case for its geographical location, a particularly favorable spot for observing the sky. In the past, before the collapse, Europe had established an advanced research center here. Another reason is that the region, although contaminated, was relatively spared from radiation. The role of the small city with 3,275 inhabitants is nevertheless of paramount importance for the federation of colonies. In fact, it is the one that ensures a significant portion of space communications, even the essential ones, with planetary or orbital space bases and relay satellites. Another one of its activities is exobiology, with the Exobio center dedicated to the search for life forms on other planets, as well as the synthesis of new macromolecules and organic cradles capable of nurturing consciousness. Pukara is not a settlement city in the strict sense. The residents are mainly high-level researchers, although sometimes accompanied by a few family members. The city handles the sorting, multiplexing, and dissemination of information to other Earth colonies, in coordination with the installations in Hawaii.

I'm approaching. On the right, another screen of the same type still displays the message sent by the Pukara control tower authorizing access,

accompanied by a welcome message. The transparent holographic display of the HUD (Head-Up Display) in the cockpit overlays the approach parameters on the mountainous, rocky, yellowish-pink background. The domes of the colony are clustered a bit further south. An underground network of tunnels connects all the antennas to the actual city. On the western boundary, two panels are opening, revealing the landing area. The rotation is decreasing rapidly, and the levitation device takes over.

At my command post, I can't help but think about everything Krawn told me before this mission. Liam is by my side, not really a co-pilot, as the ship doesn't need one, but we kept this position for purely relational reasons. He is a security officer. They are few but highly experienced. I can rely on him. As for the rest, he knows nothing about why we're here. Perfection doesn't exist, and that's what caught Quintessence's attention. Reports that were too smooth, not mentioning any anomalies. According to the Machine, that would be impossible. Yet, each colony has Sages, and the advice from all the colonies is in constant contact. Why didn't they notice anything? So, checking the situation on-site seemed necessary to Krawn, but here's the thing, we enjoy a certain status of notoriety. Hope and I, and beyond us, all the residents of Ydunea, the founding fathers of the new Earth, the restored blue planet. Hope and I never put ourselves in the spotlight, a visit could be misinterpreted as a lack of trust. So, we devised a stratagem, simulating a breakdown, the need for an emergency landing. Even more unusually, he insisted that I take one of the armed humanoids and the latest generation of cyborgs equipped with powerful weapons with me.

The propulsion and landing systems have just stopped. We are preparing to descend. Above us, the dome has closed. I look towards the reception lounge. There is no one, just reassuring background music punctuated by automated welcome messages. We both approach. A service android arrives with a tray of drinks and food. I question it. It just smiles at us and invites us to help ourselves. Comfortable seats await us... In fact, it's the routine procedure for all newcomers. It doesn't mean anything. After all, I didn't specify who I am. Screens display images of life in the colony, promoting the production of the farm-laboratory, the educational structure. The attendance at the Hall Meetch proves the vitality of the colony.

We have been waiting for over an hour. Liam is getting impatient.

- Don't you think it's taking a bit too long?
- It's a technical stopover; maybe the person in charge is busy.



– Still ...

The entrance is locked. However, the android had used it. I contact the control room, but there is no response. I have a bad feeling about this.

I am viewing the screens supposed to reflect city life, relay vital information in the presence of other colonies, including those in space. They announce the imminent arrival of a spaceship from one of the lunar orbit bases. Marco clearly distinguishes Moonship\_35, but if I remember correctly, this ship landed three months ago. Another anomaly: the city journal starts with weather news. Today, it's about the false aurora, the zodiacal light reflected to Earth, scattered forward by cosmic dust illuminated by the sun. It appears as a hazy band, a kind of ghost, shortly after sunset, while darkness already invades the desert. But neither the time of its appearance nor the inclination relative to the horizon corresponds to today's date. A quick check confirms my doubts. Even more seriously, the announced data corresponds to the situation three months ago, just a few days before the lunar shuttle returned. It's obvious that these are not live updates but simply a replay of images from several months ago.

It's high time to alert Ydunea. We return to the spacecraft, and I activate one of the coded communication channels. The familiar voice of Krawn reaches me. I quickly explain the situation, the wait in the terminal, the locked doors, and the anomalies on the control screens. He quickly reacts:

– Marco?

– Yes.

– You must leave as soon as possible.

– I was thinking of forcing the doors of the airport terminal and entering the city.

– I'm not sure if that's wise. If what you suppose is true, then someone or something wants to prevent us from knowing what is really happening inside. You are not equipped for an armed conflict.

– An armed conflict?

Goodness, it's no less than that! It's the first time the Machine has reacted like this. Liam is already at the controls, busy requesting permission to take off. A message of prohibition stubbornly appears, with a vague indication of

a technical anomaly on the dome openings. The vague impression of being prisoners... There's no point in insisting. Krawn is still on the line. Liam says:

- We're being denied permission to take off!
- Then we must act quickly.

The ship's lasers are powerful enough to cut through the terminal dome. It should only take a few minutes.

The laser cannons go into action. Alarm sirens blare, and I receive a warning. It's too late, a large section of the reinforced triple layer falls loudly to the ground. The passage is now clear. Liam carefully maneuvers, and we quickly gain altitude. It's still early. In the distance, to the east, a pink strip outlines the crests of the Andes, blending into a deep blue and the still starry night. From the air, we can't see anything of the city; the outer shell is in opaque mode. While waiting for dawn to break and the first reinforcements to arrive from Mexico, we hover in front of the large telecommunications antenna. Its top is just over three thousand meters above sea level. The top of the structure, marked with a luminous festoon, dominates the protective structure of the ELT telescope of the European Southern Observatory (ESO), which was put into service in 2026 and installed on Mount Cerro Armazones. It was the same telescope that had detected, for the first time in history, back in 2032, a form of life on Jellia. Two parallel arches, one at the base and the other near the top, outline the dome structure. The old VLT telescope and the one dedicated to observing high-energy gamma rays (Cherenkov radiation) can also be seen.

*Forceful entry. It's 12:30.*

The sun is now quite high in the sky. Eight spacecraft are landing on the tarmac. Soon, an equal number of intervention groups composed of a few officers accompanied by personnel in war, biological, humanoid, and heavily armed cyborg suits, equipped with laser cannons, emerge. I also see a medical team. Each group must head to one of the critical points in the colony.

I am soon contacted by the operation's leader, a tall, mustached man, a fashion that is rarely seen except in the Mexico colony, named Miguel. He commands the first intervention group.

We are ready to enter. An explosive charge, and the previously sealed door in the airport terminal gives way. We burst into the pristine white-beige access corridor. On the left, I head towards the air traffic control room. Two control technicians are slumped over the consoles. They appear to be sleeping. In fact, they are dead. Our approach trajectory is still displayed on one of the screens. The automatic system took over the landing. At the end is the terminal exit. It opens onto the outermost of the two large concentric boulevards that serve the city.

Trees with violet and pink flowers, groups of shrubs and plants frame the road, making you forget that the city is built in the middle of a desert. The air is cool and pleasant to breathe. The large outer dome isolating the city is completely transparent, and the sky is a pure blue. Except for a group of robotic gardeners busy maintaining flower beds, paying us no attention, there is no sign of life. The shuttles are stationary, some with their doors open, revealing the first corpses. We cautiously proceed along one of the transverse streets leading to the golden dome, where all the systems regulating Pukama's life are concentrated.

And there, it's devastation! Numerous bodies are scattered in the abandoned streets. At the same time, another tactical group has taken over the residential areas. The news is bad and reveals the extent of the tragedy. After forcing the entrance doors, the soldiers only found the dead, coldly executed, adults, and a few children. In Pukara, almost all the educational activities took place in the Meetech Hall. Precisely, the liaison officer of the third team, the one responsible for intervening in that structure, contacts us. In a hoarse voice, he announces the disaster. They have already counted over three hundred victims. Most of Pukara's youth died there, suddenly and seemingly without direct execution. The bodies are in strange positions, some slumped over the terminals they were consulting, others lying on the floor in grotesque poses, a few were clearly heading towards the exits. There is no trace or indication that weapons were used, no signs of impact, no injuries.

The information provided by the doctors and nurses accompanying each intervention group overlaps. The condition of the remains found, some of which are already skeletons surrounded by clothing, suggests a death approximately three months ago. This is consistent with the delay in the transmitted information after the tragedy. Three months ago, a tragedy unfolded here without any of the other colonies noticing.

Upon arrival at the site, the third intervention group, whose objective was

the security hall located on the eastern outskirts, found nothing, no cyborgs, no roboids. Where have they gone? It is impossible to say at the moment.

The fourth intervention group has just taken over the control center. This center regulates all essential functions of the city, particularly surveillance and security maintenance operations. One of the officers in the group is also a control specialist. He chooses to disconnect everything and reboot the system with an external module. After a few attempts, the system restarts, and suddenly, the images reveal the extent of the disaster. There are deaths everywhere, both in workspaces and private areas. But this time, many of the victims have been executed, undoubtedly by armed robots for which there is still no trace.

All teams have now arrived on site. Only the Exobio Research Center remains. I am here with Miguel, but it is impossible to force our way in. The biological risks involved are too great. Krawn is now online, as well as the officers in charge of the other groups. We assess the situation, and then Krawn speaks. Clearly, he is deeply affected by the death of the inhabitants, including that of the Sages. There has never been such a tragedy since the great catastrophe. It is the first time that the global security system of Earth's colonies has failed.

– I would like to thank you for your efficiency and the quality of your intervention. The colony has been decimated, and there seem to be no survivors, except perhaps in the Exobio Center, where we have not yet been able to enter. There are reasons to believe it could be the key to the mystery. We will have to enter, but gently, progressing inside the premises with the utmost caution. The facilities are highly sensitive, and one of the projects is under the direct control of the Crown's Grand Council. For this reason, Commander Miguel, I want you and Marco to go first. I will stay online with you. I want you to quickly reach the Exobio facilities. Additionally, since we do not know the origin of the tragedy, the other unit commanders must lock down all key points, monitor the ships to prevent surprise attacks. We will also temporarily close all space communications and communications with other colonies from Pukara. You will be isolated, but rest assured, it is only for a very limited time. Other forces will soon arrive on site.

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## **extraterrestrial consciousness**

*Lee Guo, June 7, 2080, Exobio facilities, Pukara's exobiology research center, director's office.*

We entered the premises accompanied by two cyborgs and only a few men, gradually cutting through the outer security airlocks. We are alone with Miguel in Lee's office. Krawn's hologram has just appeared on one of the three guest seats.

– Commander Miguel, Marco, what I am about to reveal is top secret. As for you, Marco, you already know some elements. There is no need to emphasize the confidential nature of this information. The directives I will convey to you next are those of the Crown Council, no less. They must be followed without question.

I must go back to the dark times that plunged our blue planet into devastation starting in December 2034. At the end of the 2020-2030 decade, as all economic, political, social, military, and moral indicators turned red, signaling an impending chaos, although no one wanted to see it, the ESO's ELT super telescope began making remarkable discoveries. Before the commissioning of this instrument, many exoplanets capable of hosting life had been discovered, but the means of analyzing the detected light were still too limited to determine their causes. Moreover, they were mostly located more than 50 or even 100 light-years away. The discovery of Jellia in December 2034, only six light-years away and mostly covered by oceans, went almost unnoticed due to the international context. As part of the Replay program, we reactivated the ESO's facilities (which had not been damaged) and decided to establish a mini colony. Two complementary activities were implemented: a space telecommunications center and an exobiology research center led by Dr. Lee Guo. Just before the great catastrophe, during his doctoral thesis, he became interested in synthetic mini brains. He highlighted the emergence of neural waves associated with intelligent activity by comparing it to the development of natural animal embryos and the appearance of brain waves. Of course, this caused a scandal. For most scientists, the idea that intelligence and consciousness could spontaneously arise in a synthetic brain was absurd.

The recorded data masses began to be seriously analyzed only from 2040. That's when astonishing results emerged. From the beginning, the variations in the detected light had intrigued researchers. Albedo measurements

revealed modulations of reflected intensity with specific frequencies that eerily resembled the activity measured for brain waves in synthetic mini brains. For Pukara's life chemists and exobiologists, Jellia could have harbored structured, multicellular macro-organisms with metabolism, perhaps autotrophic, soft, viscous, or glassy things resembling jellyfish, perhaps more intelligent.

In 2041, the first train of coded messages (light waves) was sent to Jellia. It contained essential information about human knowledge, taking a more elaborate approach, like the one taken by the old world with the Pioneer 10 and 11 space probes. But this time, it was not just a simple pictorial message, but rather fairly complete and logically structured data on mathematics, physics (laws of interaction, particles, astrophysics), chemistry, and life sciences. The data panel synthetically reflected our understanding of the universe, the emergence of consciousness, and the behaviors of various forms of terrestrial life. Moreover, it was no longer a message in a bottle destined to drift towards an uncertain destination. The target was known.

In 2054, the dream became a reality. For a few weeks, modulated signals also coded in binary were received by the Pukara's large antenna. The first train contained a series of drawings, geometric shapes, plans, curves, graphs of all kinds, in both 2D and 3D. Quintessence was able to interpret them at least partially: evidently, there were intelligent and conscious entities on Jellia, with an evolved consciousness that encompassed awareness of space and time, as well as self-awareness, with the ability to understand their place in the local environment.

It was, of course, a thunderclap. Until then, humans had been facing disappointment after disappointment, and suddenly they received a remarkably structured message, rich in information and simultaneously interpretable through mathematics. We eagerly awaited the analysis from the Machine, but Quintessence's interpretation exceeded all our expectations. The Machine clearly concluded that the origin of the received extraterrestrial messages emanated from a conscious life form, capable of directly modulating light synchronously, transposing structured thought directly into light (without intermediate steps of writing or using means other than their cerebral network). The various drawings and shapes evoked soft, presumably viscous, multicellular forms evolving in oceans of yet undetermined chemical composition. No drawing suggested any competition with other life forms. Therefore, these organisms were likely autotrophs, drawing the necessary elements for their growth from the oceans and atmosphere. Their

understanding of Good and Evil was not due to prey and predators, but rather to the vicissitudes of their environment, storms, and tides caused by Jellia's two moons, which regularly devastated colonies of these entities. One of the illustrations reconstructed by Quintessence showed side by side a structure with harmonious proportions and regular geometric shapes, and next to it, a destroyed structure with swirling spirals both in the air and in the ocean, and the same square, rectangular, and dodecahedral shapes twisted this time. There was no suggestion of any other form of life, particularly on the rare dark areas that could have been interpreted as solid ground. These entities were probably the main form of life on Jellia, in addition to the precursors of evolution. Their mode of movement resembled that of jellyfish. There were no drawings depicting actual limbs.

Shortly thereafter, a second salvo of messages arrived, overall more difficult to interpret but confirming the absence of Jellia's entities' ability to significantly affect inanimate things. One of the drawings could be interpreted as astonishment at the fact that the human species could exert such power over the environment. A growing curve with a human, a stone, and a pyramid, and next to it, a decreasing curve with a shape, a stone, and the same shape at the end of the curve. To conclude, as one of Lee's assistants had intended, that they were asking for help was as improbable as certain conclusions drawn by psychologists in the old world.

From the spectral signature of Jellia's compounds, we were able to reconstruct the constituents of their exo-DNA and exo-proteins. Some macromolecules revealed kinship with others already synthesized ex-nihilo on Earth, DNA with slightly different bases. After that, it was easy, with AI software like those explaining the 3D folding of human DNA and proteins, to understand the metabolism of these living entities as well as the dynamics of vibrational information circulation. Simulations of communication within a protein of these entities revealed extraordinary vitality, an unprecedented mobilization of each protein as well as their associations, in other words, a remarkable ability to construct conscious symphonies. The metabolism of Jellia's entities is simpler and safer than that of our terrestrial species. Perhaps the history of this exoplanet had been simpler, more straightforward than that of our blue planet, facilitating evolution with fewer hesitations. However, the entities of Jellia do not have the ability to act in the short term on the inanimate things of their world. Devoid of true limbs, they have not developed the use of tools, they are incapable of concentrating energy or synthesizing materials with specific properties. Their autotrophic nature has

also prevented them from engaging in cannibalism.

In fact, they were well adapted, a miracle of evolution in the way they had reached this level of consciousness, and chance and necessity had not developed the arms and legs that allowed humans to build pyramids, create atomic bombs, or even instruments of measurement. They were as intelligent as us, but still unaware of what they were made of. They had probably already imagined atoms and elementary particles, but they had never been able to prove anything.

As a result of these discoveries, discussions became lively, and the "Dust of Life" project was born, sometimes imbued with a certain mysticism. Indeed, some within the new humanity, after saving the world, began to drift and believe that humans had a mission, to help every seed of life in the cosmos grow in intelligence and consciousness. It would undoubtedly be an enterprise taking billions of years since we had still not found a way to create temporal bridges, but that mattered little to them.

Thus, the drift of the human mind returned, believing that humans could play a unique, special, and primordial role in the organization of nature. This way of thinking had long deceived humanity and caused countless miseries in the old world.

Twelve years for a round trip! Of course, on a human scale, that is a long time. We already found it challenging with Mars, a small-time delay between three and twenty-one minutes. That would have allowed time to react! But if, as Quintessence claimed, the entities of Jellia were a true achievement of nature, surpassing humanity itself, then allowing them to quickly acquire a cytoskeleton, a skeleton, a carapace, and eventually limbs enabling them to also master matter, energy, and light, for detractors, it represented a real long-term threat to humanity.

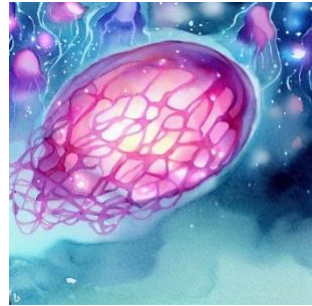
The Sages quickly refocused the deviants, and everything seemed to return to order. The exobiology center in Pukara received very clear instructions, including not revealing anything about the works concerning the acceleration of evolution. Those would have revealed, among other things, how to accelerate the reconstitution or even the creation of a new limb.

In the years that followed, we accumulated increasingly detailed knowledge about the world of Jellia. A communication protocol was established, combining vocabulary, logograms, ideograms, and other graphics. Humans learned to better understand the entities of Jellia, and vice



versa. Very quickly, albeit with the six-year reserve for a round trip of information, they asked Earth to help them transform. We found all sorts of small or big lies to avoid doing so, often claiming that we had not yet succeeded in mastering this step.

On their side, the researchers at Pukara, based on increasingly precise information about the physicochemical environment of Jellia, attempted to recreate synthetic organisms that were supposed to resemble the things of Jellia as closely as possible. They ended up with synthetic brains evolving much faster than those based on DNA. The exomolecules carrying the genetic material were more optimized than our DNA in terms of organization. Furthermore, they demonstrated a great ability to organize themselves in 3D networks, eventually forming a brain structure much less complex than that of our neurons, which requires a highly complicated cerebral metabolism. The researchers then began to communicate with these new mini-brains through light waves, using the language-protocol that had been developed to communicate with Jellia. Thus, we ended up with a kind of intelligent triangle: the natural living things of Jellia, the synthetic brains imitating them and developed at Pukara, and finally humans. The latter communicated with Jellia and its terrestrial imitations. However, no communication was to take place between the latter two.



Jellia creatures, Bing .com / create, prompt: a pink and purple formless thing with a network of luminous dots inside, floating in the ocean, past a crowd of jellyfish, drawn by hand and in watercolor.

– Krawn continues:

All of this, Marco, you already knew. I explained it to Miguel. Now I will address the essential part. About a year ago, as part of the automatic verifications of access to reserved databases, highly encrypted clouds, we observed an anomaly, a large amount of sensitive data being loaded. It was impossible to determine with certainty who extracted this data. It should be noted that the Pukara exobiology research center had access to this data, at least the senior researchers. They had no need to hide in order to extract this

knowledge. We eventually gave up and simply installed new firewalls, an even more effective line of defense. Among the plundered data were a series of procedures to accelerate tissue regeneration, especially involving neurons, the restoration of an amputated organ, 3D printing, cell differentiation to graft a limb onto an artificially designed organism, and experimental protocols for connecting brains, both natural and artificial, to a machine—in fact, everything related to hybridization.

I had complete trust in Lee, but now I'm filled with doubt. In fact, neither Lee nor his two main research assistants, Abigail and Christen, nor five other technicians are listed among the victims sent to me by the commander of the seventh intervention group. We have a mystery to solve. We need to check everything in this office, the building plans, access points, the last communications of the eight-missing people, their professional assignments, and the workstations they occupied. Perhaps we will find a clue. We will meet again as soon as there is news.

I hope to hear from you soon. Krawn's avatar is fading away.

It shows on his face. Miguel is not thrilled about searching Lee's office and computer.

– think I could help the others on the other floors?

– No problem. I should be able to handle it alone. Oh, one more thing, the incubators, the nurseries for the artificial brains like the things of Jellia, are on the lower level.

– Understood, no problem. My whole team is now on-site. We're ready to access the three underground levels.

Miguel has already started exploring the first basement. Liam is accompanying him along with two of our androids. On my part, I begin to rummage through Lee's papers. Whether out of snobbery or to confuse others, he still works on paper. An experimental protocol catches my attention. On the side of one of the bound sheets, I find a list of names—specifically, the names of the researchers and technicians who are missing. Moreover, it is indicated in their files that they all worked on the last level, the one with the incubators, the most secretive level, but that was two years ago. Since then, it's strange, there is no further information regarding their

assignments. Another computer folder found on the computer stores equipment and consumable commands by activity sector. In the past year, the consumption of certain chemicals has increased tenfold. The same goes for the energy consumption of the laboratories on the last level. It's obvious that there must be another laboratory, possibly located on an additional underground level. We need to make sure. I call Miguel to share my suspicions and ask him to look for any other access points. Before joining him, I still have a few other checks to make, particularly regarding repair or maintenance interventions.

Ghost lab I found the original plans of the research building. The three underground levels are marked, but in an annex, there is mention of constructing a fourth basement for use as a shelter, as is done in most other colonies. However, here, it seems that it was never done. The access should have led directly to the reserve of chemicals and spare parts on the third level. I immediately call:

– Miguel?

– Yes, Marco.

– Where are you?

– On the last level, as agreed. The incubators are in place, and the equipment seems to be functioning. Everything looks normal, except that all the personnel on this floor, like those on the previous ones, are dead.

– We need to scan the walls and floor of the chemical and consumable reserve. It's in the southwest corner.

– I know, I passed by it, but the access is very risky according to the displayed information.

– But there are specialized personnel. They should be able to enter with their suits. We need to give them a scanner.

– I'll take care of it. It didn't seem like a priority to the intervention group. It was just a storage room, even though it's about ten meters wide, and there were no victims.

About ten minutes later, Miguel calls back.

– We're going in. I'm going with them. The airlock is blocked, we'll place a charge.

I hear a brief explosion.

There, the panel blew off. I put on a suit; I'll go in with the others. I'm more familiar with how to use the scanners than they are.

– Stay on the line...

Left wall, nothing abnormal. I check the bottom of the cabinets, nothing there either, right side, same thing. Floor, nothing, it's solid, reinforced concrete, nothing else. Only the back wall remains, facing the entrance. It is covered by a very large storage cabinet, full of gas bottles on the left, and refrigerated compartments with chemicals on the right.

– Is it deep ?

– About seventy centimeters.

– And how about the depth? I'm talking about the room, of course, from the entrance lobby to the back of the storage area.

– Seven meters forty.

– That doesn't match the plans. According to the one I have in front of me, the depth of the room should be ten meters. Check with the sonar.

– One moment, there we go. There's a space, indeed, another two meters sixty to the concrete wall. The device also shows a metallic parallelepiped, it could be some kind of elevator.

– It's likely just remnants from the works prior to the construction of the city. In fact, the plans I have here show a network of tunnels and even a large hall not far from the new building, the one you're in. These tunnels connected various installations that were in place before the apocalypse. There may be a simple access shaft that has been sealed off. I'll join you.

I leave the office, head towards the elevator, level -3. The remains of the victims have been removed, stored in an office, which gives a sense of normality to the vast premises. I catch sight of the matrices, like aquariums with flabby beige-yellow shapes immersed in rusty liquid. Sources of light flood the things, with intensity and frequency constantly changing, displayed on numerous control screens. The incubators are also interconnected, probably for intelligent exchange experiments.

*I have joined Miguel.*

The left side is now cleared of bottles and other accessories. There is no radioactive or biochemical danger despite the alarmist signs, and one of the

cyborgs begins to drill through the “plasticolith” wall. The cutting is very fast, he pushes aside the cut panel, and we enter.

Obviously, this is not an abandoned shaft. Everything is new and impeccably clean, except for the mess we've made by entering. The lighting is provided by the walls themselves, as in most research facilities in the colonies. The problem with this technology is that the controls are hidden, including the ones that allow access to the basement through a presumably hidden elevator on the right side behind the consumable's storage area. The sonar confirms this hypothesis, and based on the initial trace, it could lead to the old hall seen on the plan, perhaps converted into a secret, ghost laboratory. This means that the missing personnel could be taking refuge there and maybe, with a bit of luck, still alive. In that case, we need to help them as soon as possible, and Miguel agrees. We will never find the codes or vital imprints for access in time. While one of the cyborgs is busy opening the entrance, I inform Krawn.

There is indeed a shaft, but the seemingly deep hole opens into emptiness, the elevator cabin is probably stopped at the bottom, and likely malfunctioning due to our intervention, like the wall lighting. The only light source is from below. We'll have to descend. It's risky, but we could use the rails and the rack of the mechanical ascending-descending device attached to the wall for support. As a first step, we send a mini drone. Capable of navigating even in the dark, it can crawl through the tunnels and reveal what lies ahead... -22 meters, -23, ..., -26, still no lateral access, the drone keeps descending, -32, ... it's the bottom of the shaft and the level of the floor in the large cavity connected by tunnels to the old telescopes. The drone is blocked by the cabin. We need to descend and pierce the ceiling. We will descend, me, Miguel, two of his men, and the two cyborgs.

*One hour later...*

This time, we're here. The metal door of the elevator gives way, flooding the cabin with light. Before us, a well-maintained gallery opens up. About ten meters, a turn, and we arrive at an airlock with two portholes. It offers a glimpse of part of the large hall that appeared on the plans, round in shape, about 10 meters high and approximately fifty meters long. From where we are, there is no sign of life except for what appears to be a very large

occupant in the center of the room. The resemblance to the incubators on level -3 is striking, only on a larger scale, 8 to 10 times bigger.

The most important thing is to find the women and men who most likely worked here. Once again, we need to force our way in. But this time it's different. As soon as the laser drilling operations begin, a series of alarms sound, buttons start flashing everywhere, and suddenly, everything goes dark. The door finally gives way. The cyborgs go in first as they have powerful lighting that sweeps the room from side to side. Miguel follows with two guards. Just as I'm about to enter, a few sharp detonations are heard, followed by an explosion. The immense underground space lights up. Quickly, the center becomes a ball of fire, electrical cables sparkle and melt. The sound of electric arcs crackling can be heard. In the aquarium, the overheated water starts to boil. A horrible moaning reflecting unspeakable suffering, almost inhuman, resonates in the room. The cyborgs, violently thrown to the ground, manage to get up. However, Miguel and the guards remain on the ground. I rush over, but it's over for them. They were hit full force by ceramic debris from the explosion of what appears to be a power generator. The protections of the central skylight quickly give way as well. Accompanied by a deep rumble, a cloud of burning gas is sucked into this enormous chimney. Outside Pukara, a few hundred meters from the outer protective dome, a geyser of flames and glowing debris briefly shoots up into the sky. In a matter of minutes, it's all over. Underground, the suction has extinguished everything. In the laboratory of the God-Human, where the giant incubator was located, where he had probably succeeded in creating a greater intelligence than his own, promising an unparalleled consciousness, nothing remains but ashes.

It's a disaster. I'm calling the other commanders to inform them of the situation, then I head towards the location where the distress call came from. I recognize Professor Lee Guo. The center director is not dead but severely injured. Next to him, three bodies, electrocuted technicians, one of them partially burnt. Lee's gaze is distant, and a pool of blood is starting to spread. He is seriously injured on his left side. I try to apply pressure to the wound. The rest of the first response team will arrive soon. There's a doctor who can take care of him. Meanwhile, even though I have some reservations, and because Abigail, Christen, and the two technicians are missing, it's necessary to make Lee talk. He must know the truth.

– Lee, can you hear me? Lee, stay with me, hang on, there has been an accident. Help is on the way.

He's delirious. I doubt he's capable of understanding who I am and why I'm here.

– Jellia, here too, Abigail betrayed... autogiro... germs... containers... Pacific...

These disjointed words are the only thing I manage to hear. The doctor is already here. I must leave Lee to him and hope he recovers. In the meantime, I inspect what remains of the premises with Liam, who comes to assist me with two guards and three armed androids. We start inspecting the area, at least the perimeter, as there's nothing left in the center. It was less affected, although most of the equipment is burned. In one place, it's still possible to recognize the remains of small incubators like the ones used on the upper floor. There should have been at least thirty considering the locations. They are gone, no trace of the trays. However, the laboratory glassware has survived. Moreover, the position of the nurseries' power cables suggests that they were disconnected.

In the diametrically opposite zone, I'm intrigued by a recess in the wall. As I approach, I realize it's the entrance to a gallery. The destruction of the smart wall revealed this passage. I check the map of the old underground facilities. It's clearly marked. An emergency exit? Who could have used it? Perhaps survivors?

We enter the passage. Wasn't it maintained like the rest of the facilities? The gallery must have remained as it was. We've already covered about fifty meters when the infrared detector of one of the androids confirms a heat source, or rather, a human presence, a huddled body about twenty meters away. We approach cautiously. We're there, it's a woman, and her biological signature indicates it's Christen. The puzzle is starting to come together—an underground laboratory, a super incubator, smaller incubators that seem to have been taken away, an explosion increasingly resembling sabotage, a secret passage to evacuate the premises. It seems increasingly likely that someone played sorcerer's apprentice, refusing to follow the Sages' directives. Yet, I know of no precedent.

Christen is in a state of shock. We bring her back to the main hall where the doctor examines her. She's in shock, but none of her vital functions are

in danger, and the doctor agrees that we can question her. A shot restores her condition. We start very gently, trying not to overwhelm her, but suddenly she starts telling everything as if she wants to free herself mentally.

Krawn is online and listening:

– It all supposedly started with an experiment attempted by Lee to better understand the way Jellia communicates. On Earth, despite some progress, we had still not managed to understand the meaning of a significant part of the messages received in 2054 or those received a dozen years later in 2066. Our artificial intelligences were not suited to extraterrestrial thinking, which is too different from human thinking. Lee then had the idea of optically transmitting fragments of the messages from Jellia to one of the synthesized imitations on Earth. Only a few technicians, Abigail, and I were involved in this experimentation, which started with the incubators on level -3. Up until then, everything was done according to the rules, in compliance with the directives given by the Sages. We didn't communicate any sensitive information to the life forms of Jellia .

A difficulty quickly arose. Despite their remarkable performance, the things synthesized on Earth at level -3 were not powerful enough. They could only decode fragments of messages, but they were interesting enough for curiosity to outweigh caution. In the 2066 exchange, Abigail believed she had decoded what resembled a plea for help from the beings of Jellia. They apparently understood that their main handicap was their inability to act on physical things. According to Abigail, the living beings of Jellia wanted the human species to help them acquire functionalities to overcome this, such as skeletons, shells, limbs...

That's when Lee and Abigail supposedly considered synthesizing a mega-brain in a new laboratory. The division of labor at level -4 allowed a part of the staff to be unaware of what the other part was doing. There was this large hall carved out by the old world, with a gallery leading near the Biexo center. Lee had full authority to decide on the work, and the robots were obviously discreet. In 2068, they activated the new incubator.

Christen stops talking. She's calmer now, but something seems to hold her back.

– Christen?



She looks at me with a strange expression, lost, as if surprised to be there.

– You have already helped us a lot. However, there are still essential things we need to understand. Why did the explosion happen, and where is Abigail?

The last question motivates her, that's evident from her gaze. She hesitates for a few more seconds, then continues recounting the events.

– Afterwards, we lost control. One morning, when I arrived at the new laboratory, I found Abigail changed. Up until then, she and I... well, we were living together, but recently she had chosen to stay on-site. She seemed more distant there. She simply told me that she had understood that she was right about Jellia. I think she managed to decode the messages thanks to the new brain. She also asked me not to tell Lee yet, she needed to confirm a few things. In the following days, she stayed on-site. Every day, I found her more tired. I worried about her and about us. I also noticed that she constantly connected to Pukara's scientific databases at night, and even more surprisingly, there was an optical converter linked to the incubator. That's when I reluctantly decided to inform Lee. That's what triggered everything. Despite my relationship with Abigail, Lee had always hoped that one day he would have a place in her life. So he handled her with care. For several weeks, we continued to work as usual, at least seemingly. But the thing in the incubator remained connected and took control of all the city's computer keys. Three days ago, six Pukara security androids entered the laboratory, and we were forbidden to leave, Lee, me, and the five technicians working there. We had to follow Abigail's orders. She was no longer the same. A flood of new messages was also sent to Jellia.

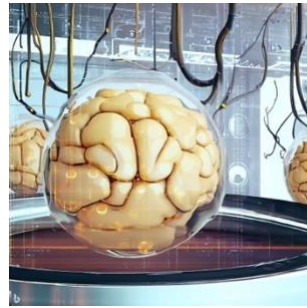
– Could it be possible that Abigail and the thing were in mental contact?

– It's possible because she often connected herself to universal data.

– So, she may have been mentally manipulated. Today's Abigail might not be the one you knew.

– Lee tried to alert the Sages, but Abigail noticed. That was about three months ago. We saw the horrifying images of the android takeover. We were prisoners and couldn't do anything. We had to work under the surveillance of robots. We were asked, well, Abigail, the brain, both, I imagine, to prepare new incubators. Some were simply brought down from level three. They were all equipped with survival devices that made them autonomous for several weeks and placed in containers. These containers also contain converters. I

also saw the androids placing charges around the central incubator. Abigail kept muttering the same thing: they will live, they will live.



Bing .com / create, left prompt: a in the center of a vast laboratory, several spheres made of brain tissue bathe in a translucent container filled with a nutritious yellow-brown liquid. Electronic devices and computers can be seen in the background. High details, 3D rendering / right prompt: in the center of a vast laboratory, several spheres made of brain tissue bathe in a translucent container filled with a nutritious yellow-brown liquid. Connexions to electronic devices and computers can be seen in the background. High details, 3D rendering.

– What do these converters do?

– They are kind of optoelectronic interpreters or gateways between the thoughts of things and our human thoughts. Although they are very imperfect because we are far from understanding the way of thinking of life on Jellia, these interfaces allowed the central incubator's brain to take control of Pukara. The thoughts of things expressed optically are converted into a sequence of signals interpretable by our technology, and vice versa.

– I suppose our intervention pushed the thing to react so brutally ?

– Indeed, we followed the arrival of the rescue team. Abigail waited until the last moment to give the evacuation order. She left with two technicians, the androids, and the containers. At the last moment, after looking at me for a long time, she asked me to follow her. I was panicked, I obeyed, but then I made a mistake by entering the side gallery where you found me. I remember hearing the explosion, feeling its blast. That's all I know.

– This time, the mystery seems to be solved. Abigail is the key to the puzzle. She escaped with the containers. I remember Lee's words, his words about the Ocean. She is preparing to release the things into the waters. If she

succeeds, the situation will quickly become uncontrollable, and the things will proliferate rapidly. We absolutely need to catch up with them. We are only about fifteen kilometers from the ocean as the crow flies. An autogyro would be enough to reach the coast. They have less than an hour head start. The gallery taken by the fugitives leads to the base of the large ELT telescope built on Mount Cerro Armazones. Below, there is what looks like a landing area. I decide to pursue them. At the same time, two ships will take off from Pukara's airport to secure the area and prevent Abigail from escaping.

## ELT

We have just arrived at the base of the large telescope through a hatch that the fugitives didn't even take the time to close. The two large doors of the protective dome are slightly open, revealing the arches of the structure and the entanglement of tubes surrounding the central mirror. We detect characteristic signatures of androids, drones, and the presence of human life. The fugitives are hiding inside the large instrument. There is no sign, however, of any flying machine. It may be stationary, or they are waiting for it. In any case, we need to act quickly. The four of us, me, Liam, and the two guards, along with the well-armed androids, should be able to hold them off until reinforcements arrive. One of the ships is already leaving Pukara's tarmac.



Bing.com / create, prompt: the dimly lit dome of a telescope on top of one of the Atacama mountains, at night. Inside, the mirror is supported by a metal structure, humanoid robots are busy, a flying saucer-shaped drone takes off from the base of the telescope, 3D rendering.

That's when we detect the autogyro. Hidden at the end of the runway, the transport path of the telescope. Built mostly with organic materials and camouflaged like a chameleon, it was undetectable until now. The noise of the blades just betrayed it. Inside, they have probably detected our presence, and they are going all out, trying to reach the autogyro.

We are under heavy fire from drones, from top to bottom. The machines

hide in the superstructure, constantly moving in zigzag between the metal mesh of the structure carrying the telescope's mirror. We retaliate from the ground, but with little success, only managing to penetrate the protective dome.

Two silhouettes appear, followed by five others carrying equipment, probably the containers with the nourishers and intelligent interfaces. We try to shoot, but intense ground fire, in addition to the drones', forces us to take cover behind the concrete base. One guard and two androids are down. Liam is injured, fortunately only slightly, but he can no longer fight. As for the group of fugitives, they have now reached the small aircraft, and men and



androids are loading the equipment. The drones have exited the large telescope and are now attacking us from all sides. It's reasonably impossible to intervene, it's a lost cause. However, I am about to do it when one of the combat ships arrives. Everything is over in a matter of seconds. The autogiro explodes, and its debris is scattered in the air. The drones controlled by the group crash, one of them about

ten meters away from us.

Bing.com / create, prompt: Punta del Reyes, Cerro Paranal, Chile

The ship has ceased firing. I go to the site. Only vitrified debris remains. No human traces. Even if some debris from the things had survived, they would be unable to survive in this hostile environment without the containers. It's enough to scan the surrounding ground to make sure none of them escaped destruction. I transmit a few orders to the pilot to confirm that.

The fine exploration of the surroundings yielded nothing. Nevertheless, we will make sure that no equipment has been left inside the telescope, but it seems that everything is finished. Krawn followed the operation from beginning to end. He, too, is relieved. However, he requests a thorough search of the area. The confirmation of Abigail's death is given two days later. The investigation teams initially found a piece of closure corresponding to a female suit and not far away, her identification plate.

### *Punta del Reyes, Pacific Coast, 2080*

Just as Marco was about to destroy the autogiro at the ELT, another aircraft took off from the former ESO airfield, carrying Abigail and an android. The small craft couldn't accommodate more passengers, and anyway, it wouldn't have made any difference. All humans who were aware of the experiments conducted in the ghost lab were probably already dead, except for Christen. Abigail started thinking about her. Granted, she loved her less than Christen loved her, but they had lived together for about ten years, and that counted for something. If everything had gone as planned, if Christen hadn't gone astray and followed her, it would be her in the autogiro instead of this stupid robot. She was just as capable of helping fulfill this mission... Once they arrived, she would have made sure that both left without suffering after emptying the contents of the containers into the ocean. It would have been enough to adjust the small control module for Christen's central circuits, which controlled her emotions, so that she would no longer feel any pain. Each person in the colonies now had this device while using it responsibly. Abigail had planned to do the same for herself, and then they would have plunged the autogiro into the ocean, a romantic ending as stupidly described in the old world. There was no other alternative. In 2080, living on the blue planet outside the colonies was still too dangerous. It was unthinkable for Abigail to return to a primitive state, to have to live day by day in constant fear. She could have tried to return to Pukara, but that thought didn't even cross her mind. She was still conditioned by the Pukara thing, the one that had just been destroyed and whose embryos she was going to save. In her life, that was now the most important thing.

### *Chile, Pacific Coast, 2100*

A large part of the Pacific is now colonized by the entities, those originally synthesized in Pukara. They still haven't been given a name, as if it could be a way to deny the reality of the invasion by the new species. From the Chilean coasts, they spread to Peru, Ecuador, and then Mexico before drifting towards the atolls of the former French Polynesia. In Bora-Bora, the ocean is nothing more than a mixture of 20% water and 80% viscous, translucent substance with whitish-yellowish reflections. The efforts to limit the phenomenon have proven futile. As the waters become increasingly acidic, it has become more difficult or even impossible in some places for plankton, the basis of the oceanic food chain, and coral reefs to thrive. Biodiversity has significantly decreased. Wherever the entities are present, there is light,

revealing intense internal activity and the will of the new living beings to communicate.

## **exodus**

### *Council of the Crown, Hope's speech, 2120*

The Sages are all here, those from the five continents of the blue planet, those from the underwater cities, and those from the space cities, whether they are in orbit or built on celestial bodies. In this ovoid Council chamber, they have only gathered in plenary session three times.

Since the Earth's Apocalypse, they are once again gathered to discuss the future of humanity. At over sixty years old, Hope is preparing to speak, as Quintessence insisted she do so, being a descendant of the founding fathers of the new humanity. And so, all the Sages responded to the call, and as soon as she appeared, they stood up to greet her. They are now ready to listen to her. The silence is complete.

– Sisters and brothers of Wisdom, welcome everyone. Today, we are gathered to debate a subject that goes beyond humanity alone.

For a long time now, we have been aware of the limitations of our intelligence and consciousness, especially since the end of our old world, which nearly destroyed the Earth. The cosmos is filled with life, often in the form of organic germs that yearn to grow indefinitely without necessarily having the means to do so. The restored Humanity of the blue planet, you and I, has discovered an immense responsibility, one that is truly exciting: to discover new forms of life and help them improve, across the vastness of the Cosmos. The children of God from the old world, the fallen angels, saw themselves as new gods.

Reality soon reminded us. You all know what has happened since the discovery of Jellia. On this exoplanet, there is a form of life that surpasses the human species in terms of intelligence and consciousness. Simpler and better adapted, both in architecture and neural connections, it is far more efficient than our human brains. We quickly understood that this form of life was superior to ours. Fortunately, we still had one advantage. Lacking sufficient means of grasping objects, the entities from Jellia were unable to exert enough force on inert things to concentrate energy, transform minerals, build

machines, means of transportation, weapons, or measuring instruments. The fact that they are autotrophic, not threatened by predators within a food chain, did not encourage them to develop real arms or legs. So, they remained in a gelatinous, colloidal form, without preventing them from further developing their consciousness and intelligence.

The macromolecules responsible for these remarkable performances have a similarity to our human DNA but possess five bases instead of four. They can form bundles of helices that can twist in space, forming periodic 3D meshes. Consciousness awakened naturally as a result. This exolife (exo-DNA-based life form) is also aware of its relationship with the environment and the importance of collaboration among its own kind. However, these entities did not know what they were made of before their contact with the human species. Humans also remained in this situation for a long time before realizing they were made of DNA. Without hindering their ability to think, it distorted their perception of the universe for a long time, leading them, among other things, to imagine a genesis guided by Gods often envisioned in their own image. The living entities of Jellia had also learned to communicate with each other through optical means and were capable of coordinating signals from millions of them associated with a single thought. That is why we detected this exovie from Earth.



Bing.com / create, prompt: RNA molecules associated in a triple helix.

Krawn continues:

An exolife, yes, that is the correct term. It was indeed built on Jellia, through an autocatalytic process that led to the multiplication of exo-DNA. Vibrational symphonies of consciousness formed very quickly, as evidenced by the experiments conducted on Earth, including those that led to the Pukara catastrophe. On Jellia, the perception of Evil developed with the numerous climatic and oceanic hazards that periodically destroyed their colonies. After receiving our initial messages, they hoped that we could help them evolve, for example, by developing limbs to eventually master their inert environment, build machines, climb on the few emerged lands of Jellia,

and later explore other planets. This would have been possible since their capacity for mutation is much higher than ours. You, the Council of the Crown, may remember that you were mostly opposed to this request. The synthetic brains designed on Earth in Pukara were meant to better understand Jellia's thought processes.

Misfortune struck when scientists did not adhere to strict instructions. By creating a massive exo-brain based on the presumed model of those from Jellia, they created what became a monster for us. In reality, it is only a form of Trans-Specism resembling our transhumanism, the awareness of our imperfection, the need to improve to achieve a greater state of harmony. The monstrous entity created on Earth was able to communicate with those from Jellia. Just one encounter was enough to prompt them to plunder our knowledge and conceive a project to colonize the blue planet with mirror entities, synthesized beings from Pukara. The seeds planted in the Pacific by Abigail grew at an astonishing speed, and we were powerless to intervene. The means we had developed to contain life, such as Genares life erasers, had no effect. Their exo DNA is too stable. Another opportunity to note our inferiority.

**If we are gathered here today, it is because a very serious event has just occurred.**

Antarctica is no longer under our control. Two days ago, this semi-submerged city was attacked from the ocean. It seems that optical interpreter interfaces were used to take control of a research submarine. From there, a virus spread rapidly, and within a few hours, the city fell under the control of these entities. They still exist in the sea but have taken full control of the city. Tomorrow, another colony will be lost, and then another.

We knew that we are very imperfect, and if a God had created us as the Ancients believed, then surely, He would not have been so cruel. In the vastness of the cosmos, it was highly improbable that we would be the most well-designed, intelligent, and conscious form of life. Recent events tragically confirm this. We must now accept the fact that the human species is surpassed, supplanted. Despite all the improvements we have already made and could still make, it will never achieve the same capabilities as the entities from Jellia.

Today, we have the means to embark on interplanetary journeys. The capsules we have developed contain all human knowledge in a limited



volume, particularly regarding our genome, inexhaustible energy sources, and the means to preserve our genetic material for thousands of years. While in a dormant state, it can be awakened upon arrival on other planets. No one will be forgotten, and everyone could be reborn elsewhere. If we were to depart, those who choose to opt for a new beginning of the human species on a new blue planet would sail towards a new Earth compatible with DNA-based life. Hibernation devices are ready in sufficient numbers. Others may wait for us to find a cradle better than the current one. Who knows, among the dust of life, intelligence, and consciousness scattered throughout the universe, we may find something even better than these last molecules. The cosmos has surely already created and will continue to create myriad forms of consciousness based on various substrates, but they all share the same characteristics. We know the conditions for happiness, how to balance Good and Evil. We know how to master matter and energy. If the ultimate goal of intelligence and consciousness is to fully understand the universe to better merge with it in harmony, then it doesn't matter what the cradle is made of. We will enrich consciousness elsewhere, helping other living things approach harmony.

*Hope has finished her speech.*

The Sages rise to applaud. If the Council of the Crown approves the plan, then this will be their final session on Earth. The history of DNA-based life on the blue planet will indeed come to an end.

Krawn opens the debate...

~

## post-Humanity Year 2140...

Thousands of rockets are distributed in a network across the three launch sites located in the deserts of Kazakhstan, Texas, and Mongolia. They carry capsules containing humanity as well as all kinds of equipment, materials, robots, and spare parts. A few more will join them from the surface of Mars. The plan is for the three hundred interplanetary ships to be assembled in orbit before setting off on the adventure, sailing into the unknown.



Bing.com / create, prompt: humanity is about to leave the blue planet for good. Many spaceX ships about to take off, digital art.

...

## Starships 001 to 100... Year 7329...

All vital commands have just been activated. Five thousand brains will soon be recharged with the respective consciousness of the five thousand colonists involved. They are as new as their bodies, reconstructed identical to the old ones. Through the portholes, the resurrected humans will soon be able to catch a glimpse of the seas and the two continents of an exoplanet that will soon be their new Earth. It already harbors life forms that are compatible with the human species. The atmosphere is almost breathable under normal conditions and can be slightly modified, a matter of a hundred years. All the necessary minerals for advanced technologies are abundant. The chances of successful colonization are 98%, according to Quintessence. Here, humans who have chosen to remain human will live.



Bing.com / create, prompt: humanity colonized distant exoplanet, domed city, spaceships, futuristic

*Starships 101 to 199... Year 15432...*

The caravels continue their journey, traversing space... in search of the cosmic dust of life... the disembodied angels, heirs of human consciousness, constantly enrich all the seeds of life and consciousness, perpetually expanding their knowledge. Here, they subtly modify an organic macromolecule, there, they encourage a species to persevere in its efforts. One can see a sort of UFO shaping a gigantic block of rock destined for the Great Pyramid of Cheops on the Giza Plateau, another one sculpting a pre-Columbian stone sphere, an ancient Greek scholar having a revelation, all signs from another world to encourage humans to persevere, to embrace geometry and mathematics that govern the order of things in all universes.

It is still too early because the level of human consciousness is too low to distinguish between reality and imagination. We see people prostrating themselves before these technological miracles and imagining gods.

END