

RENDEZVOUS IN CADESIA

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Cover: The Zoroastrian Eternal Flame at the Fire Temple
in Yazd (Central Iran)

Photo by Adam Jones, Ph.D./Global Photo Archive/Flickr

HISTORICAL NOTE

The **Zoroastrianism** (in Avestan **Mazdayasna**, that is, "worship of (Ahura) Mazda" or "worship of Mazda") is the religion based on the teachings of the prophet Zarathustra (or Zoroaster). In the past, it has been the most widespread religion theologically, demographically, and politically, in the Iranian and Central Asian regions between the 6th century BC and the 10th century AD.

It was the state religion of the Sassanid Persians (224-651 AD).

Unfortunately, at the beginning of the 7th century, there was a war to the death between the Sassanids and the Byzantines. The Persians, allied to the Avars and the Slavs, besieged Constantinople unsuccessfully in 626, but the Byzantine revival took place as early as the following year. Emperor Heraclius achieved a decisive victory in Nineveh, throwing the Sassanids into chaos. A frightening epidemic worsened internal struggles (628).

Thus weakened by the duel with the Roman Empire, the Sassanids fell prey to the Arabs, even though they fought valiantly. The decisive battle took place in Cadesia (Al-Qadisiyah, November 16-19, 636 AD, but the date is much more uncertain than the site.) Since then, Zoroastrianism began its decline, and it almost

disappeared from the x century onwards. According to current estimates, there are around 120,000 followers of Zoroastrianism globally (others say up to 350,000).

Gibbon attributes great importance to the victory of Cadesia. We can speculate how history would have developed if the Persians had won at Cadesia, as they were about to do. The worst consequence for the Muslims could have been a stop to their expansion and undefeated streak, as well as diminished confidence in the success of their holy war. Most likely, they would not have gone beyond the Iranian border, would not have established kingdoms in Afghanistan, would not have crossed over to India, and so on. But history is not made with ifs and buts.

The historian Tabari (Abū Ja‘far Muḥammad ibn Jarīr Ṭabarī, [Amol, 839](#) - [Baghdad, 17 February 923](#)), devotes 167 pages, albeit not very reliable, to the battle of Cadesia. More concise is the later Abulfeda (Ismā‘īl ibn ‘Alī Abū l-Fidā’, Damascus, 1273 - Hamā, 1331), whose translation was given in Latin by Reiske in 1754 with the title "*Annales Moslemici*." Here is the short report for Latin lovers (page 69 of the Leipzig edition, 1778.) A translation *ad sensum* is in the text on pages 40 - 41.

Ista vero modo dicta ad al Gadesiam pugna cum Perlis hoc anno decimo quinto contigit. Nostros quidem eo bello ducebat Saq, filius Abi Waccasi; Persas Rostam. Atrox fuit & contumax praelium, & plus semel renovatum. Primus certaminis dies a militibus tum, & ab historicis deinceps Jaum ol Agwattichi dictus est, secundus Jaum ol Chemasi, tertius Lajlat ol Hariri, [seu nox gannitus,] ab ea nocte, quae praelii diem praecessit, & qua, ne se hosti proderent, nostri omisso sermone sicuti canes gannibant & hirribant. Quam noctem secuta aurora praelio dedit auspiciam ad medium diem extracto; ubi turbavit tandem & in fugam dedit infideles impetus adversi venti, qui concitatum vehementer pulverem in eorum vultus contorquebat. Quo factum ut fragor armorum ad ipsam usque Rostami lecticam promoveretur, at eam hero vacuam, quippe qui, umbram & latebras ab aestu solis captans, sub mulabus humi refidebat, quas ipsi Cosroes [vel Perfarum rex] onustas militum stipendiis paullo ante miserat. Sentiens itaque Rostam se desertum invadi & acriter urgeri inermem, in fugam se conjicit.

<http://menadoc.bibliothek.uni-halle.de/ssg/content/pageview/571319>

RENDEZVOUS IN CADESIA

JIM'S TALE (1)

On September 19th ¹, at 10 pm, in the evening of a long day of tiresome meetings, I arrived at my unpretentious house, which was waiting for me all dark, except for a small light on the entrance.

However, even though my house was dark, I knew that on the second floor of the house opposite a window would remain lit until I arrived. Indeed, when I came, I could see the window, on which a dim light projected the shadow of a tiny figure waiting for me. It was Eddie.

I went into my house. The shadow did not move. Who knows what my friend Eddie had in mind: would he come to see me, or go to sleep, happy to know that I was home and his world was in order? The answer was not long in coming. The doorbell rang insistently, and I immediately went to open the door (if I hadn't hurried, Eddie would have continued to press the bell without

¹ About fifty years from now

stopping, all night if necessary). I opened. Eddie, nine, stood in front of me, in socks, light blue pajamas with bunnies, looking at me.

Or rather, he looked vaguely in my direction.

Eddie.

It is difficult to describe the look of an autistic child. One thing is sure. If you don't ask him insistently, he rarely looks into your eyes. His gaze wanders, as if to embrace the whole world in one look, or is suddenly fixed, and for a long time, with the focus to infinity, in a direction apparently uninteresting. Since I knew him, about two years, I had been studying him. He must have noticed my interest, but also autistic children need attention, so he didn't mind it.

When I first met him, he was just under eight years old and was a real surly child. A nothing, often unexpected and incomprehensible, was enough to send him into a terrible crisis, even with phenomena of self-harm, such as biting his fingers until blood or scratching his face. He did not want to be touched, indeed, not even brushed, if not by his mother. But he crossed the street that separated us more and more often, looking carefully first to the left and then to the right, and then venturing

across the street with an uncertain step and finally running the last stretch, from my fence to the porch of my house.

His interest in drawing made the miracle. With the help of my laptop, I had reproduced in black and white the outlines of a view of our street, and I had made a book with three hundred sixty-six identical coloring pages. Every day, sitting on my porch or at the window with the same view, I enjoyed coloring one of the pages with the shadows, clouds, and colors of the day. They were, of course, all different paintings. Eddie had understood my plan and stood beside me for the duration of the session, either early in the morning or late in the afternoon, apparently without looking at what I was doing.

An autumn evening, I tried using for the first time colored pencils. At one moment, I turned to take a red pencil and saw that Eddie had arranged all my pencils in order of length, with extreme care. I understood that he was offering me the key to his world. But where was the lock? Or rather, where was the door? He looked at me this time directly, albeit briefly, with a vaguely questioning look. I thanked him with a smile, but he didn't answer in any way. The next day I put a second chair next to me, not too close. The colors were in the middle. Yet, for a long time, Eddie didn't sit on it.

There came a Saturday when it rained. I wanted to do an almost monochrome painting in shades of gray. That time, to my enormous surprise, Eddie came and sat down in the chair, implicitly arranged for him. I prepared some acrylic paints, started coloring using my fingers, wiping them now and then with a rag: a decent painting came out in gray and black, with little white and very little light blue. I looked at Eddie's painting and was amazed: he had stuck as much as possible to the printed outlines using a brush, but he had put in all the colors of the rainbow, apparently enthusiastic about the ease of evenly applying bright colors with acrylic, which was impossible with colored pencils. Was that the world he saw? Was it the world the way he wanted it? Was it just a pretext to apply colors within definite contours? My psychologist friends insisted that the most logical explanation was the last one, after which I never consulted a psychologist about Eddie again.

The whole neighborhood watched over our friendship. If Eddie hadn't been a special kid, whose dreadful crises everyone feared, probably I would have been made to understand very soon that my neighbors did not like that an adult outside the family was practically the only friend of a young boy. On the other hand, Eddie's family had taken a liking to me because they understood how much Eddie enjoyed my company. Anyway, they had harnessed Eddie with micro-cameras, microphones,

paggers, all things no more visible than band-aids, which allowed the family to follow all his activities.

One night I made a mistake that I still don't know what it was, and Eddie started screaming to high heaven, making rash gestures as if to chase me away. It was what the right-thinking neighborhood had been waiting for some time. Within minutes, a police car and an ambulance arrived. Later, I learned that there had been about ten calls about the incident. The "bad cop" said to me sarcastically, "So, you finally tried, but it didn't work, did it?" Eddie's father tried to explain that I was Eddie's best friend, but it made things even worse. Eventually, the ambulance staff gave Eddie a mild sedative. He immediately calmed down and ran to Mom, while the cops set about putting handcuffs on me to take me away. But Eddie saw it all, left Mom, ran up to me and hugged my legs, not to let me go. He was tearfully screaming: "Handcuffs no! Handcuffs no!". I told him that everything was okay and ruffled his hair, which he had never let me do. Mom told the cops it was the first time Eddie had acted in such a concerned way. The "good cop" said, "Come on, Fred. There's nothing to do here." The "bad cop" talked about enticement and other pleasant things, but Eddie looked directly at him with such a defiant look, imitated in this by his family, that the two policemen left and, little by little, the good neighbors too dwindled.

Our neighbors, on the other hand, had understood that Eddie was an Asperger of the highest level, a "Savant," endowed with incredible skills. He could solve very complicated puzzles in the blink of an eye; he was an ace with numbers; he had a photographic and permanent memory.

What he lacked was the ability to relate to others. It almost seemed that more than inability, it was a lack of interest, perhaps not without fear and regret on his part. One got the impression that Eddie regarded most of the other people like dangerous machines that were easy to understand and, once understood, became uninteresting to him.

So, on September 19th, at a few minutes past ten pm, Eddie was at my door. I told him:

"Hi, Eddie, my friend."

He replied, in his colorless voice:

"Hi Jim, friend." Eddie divided the world into two categories, friends and strangers. I was a member of the very exclusive first category.

"Have you already had dinner?"

"Yup. You came late."

"I apologize."

"But I'm still hungry."

"Do you want to have a snack?"

"Pancakes?"

"Do you want pancakes?"

"Yup."

"And what would Mom say?"

"I do not know."

"Can you cook them?"

"Yes, very well, too."

I went to the fridge and gave him a bowl in which I had put the batter ready for my breakfast. Eddie immediately got to work methodically and with extreme care. In due course, four pancakes were ready. I had prepared maple syrup for him and honey for me, and some drinks. We dined in silence.

"What would you like to do next?" I asked.

"I don't know," he replied (but it was clear he had a plan.)

"TV? Play Station? Homeworks?"

He made a face.

"Do you want to go home?"

"

"No."

"But you must sleep. "

"Not right away." Here, he stood up and came over to me, as he did whenever he wanted to ask me something. He climbed into my arms, making himself comfortable, leaned his head on my shoulder, without looking into my eyes, and said:

"Bring me to the Room, please."

No doubt, our phones were under control, and his video-cam had the green led on, but the police had known for a long time that the "Room" was a sort of game room, even if I am sure that they had no idea of how it worked.

I replied: "Okay, but only two hours maximum."

"Three hours."

"Two will be enough."

"Eddie sleeps very little."

"Exactly, you should sleep more."

He sighed and said, resignedly: "Two hours. "

The Room.

We went to the Room, in the basement. Here the malevolent reader can expect who knows what: children gagged and chained in cages? Torture tools? A small electric chair? Let them examine their conscience and realize that, for the most part, the first images that come to their minds are the symbols of their darkest secret thoughts. The Room was a four-by-four-meter room, perfectly whitewashed, perfectly empty, and therefore perfectly relaxing for Eddie. As we entered, the light had come on, with a mild orange color, Eddie's favorite.

Eddie looked comfortable and knew what to do. Easy: he snapped his fingers and then said, still in a colorless voice: "Hello Room, friend."

"Hi Eddie, friend," the Room replied, in an affectionate voice.

"Hi Room," I said in turn.

"Hi Jim," the Room replied, this time in a respectful voice.

"What are we going to do tonight?" enquired the Room.

"Let's play with Lego," Eddie replied.

"How many boxes?" asked the Room. "I remind you that three is the maximum."

"Three boxes," Eddie replied.

Three boxes of one hundred pieces of Lego each materialized on the floor. All elements were identical in shape, all about five centimeters long, red in the first box, yellow in the second, and blue in the third. The pieces could be connected to each other in various ways. They were advanced holograms, which the five senses - sight and touch in particular, but not only - could perceive. Nothing special about all of this. Even if the substance is not there, it is enough for the right impulses to reach the brain, and the five senses are activated, and they see, hear, taste, touch, smell what one wants.

"Concatenate all. Randomly. In one dimension," Eddie ordered.

The three hundred pieces appeared immediately connected into a random linear chain, similar to a long multicolored snake.

"Another chain," Eddie said.

Another chain was formed immediately, utterly different from the first in the order of the pieces.

The game was boring enough for me, but Eddie seemed very interested and ordered the Room to make about fifty different chains, which he observed with equal attention.

"How many different chains can we make with these three hundred pieces?" Eddie asked.

"We can make 3 to the three hundredth power continuous linear chains, about 1.4 multiplied by ten followed by 143 zeros," the Room replied. For clarity, the numbers appeared on a blackboard that had just materialized on the wall.

"Good," Eddie said.

"What do you have in mind?" I asked him.

"Nothing," Eddie replied. Little liar, I thought. But I loved him, and all I did was ruffle his hair, which he supposedly didn't like. However, he allowed me to do it.

"Enough, Room," Eddie said.

"You still have half an hour," I said.

"Flight simulator?" Eddie proposed.

"Which type of plane?" the Room enquired.

"Red Baron's Fokker Dr-I triplane . "

"But it only has one place!" the Room exclaimed.

"This time two," Eddie said, as if to himself.

"Good idea," the Room replied.

And immediately, we were above the fields of Flanders 1917, with troops shooting at us from the ground and English Sopwith Camel planes machine-gunning us from the air. Eddie was in the cockpit and piloted with the precision of a computer. We shot down seven enemy planes, and we crashed only three times. The illusion was

perfect, with the wind in our faces, the varying force of gravity in the various evolutions of our plane, the noise of the engine gone mad, and the shootings from the ground. It was so perfect that, at least the first of the three times we crashed, I thought that I was really going to die.

"Room," I asked, "does this simulation also allow one to feel pain? "

"There is also the 'Pain Mode'," the Room replied. "However, if you want my advice, forget it." I gave up, and Eddie agreed too.

We left the Room. On the doorstep, Eddie hugged me, roughly waist-high, looking sideways. It was his usual farewell. He crossed the quiet, deserted street cautiously (it was already past one in the morning), with the same care he would have taken if traffic had been at its peak. I followed him with my eyes until he was safe in his home.

THE STORY OF AGATONE ORMUZZI (1) ²

² In an unspecified year of "Their" era.

(Free version of the original to make it understandable to an ordinary reader, provided he has a brain and an opposable thumb.

I write by similitudes. "There," you will find no American breakfast, nor greasy newspapers, but something comparable.)

*"This I ask Thee, tell me truly, Ahura. Who upholds the Earth beneath and the firmament from falling?" Yasna XLIV, 4*³

Presentation.

Agatone Ormuzzi, I said to myself in the morning, wake up. You snooze, you lose. I get up. It is still dark outside. I shave while singing da-da-dum da-da-dum. "Are you bothering me already?" My dear wife tells me. "Can't you sleep like everyone else at this hour of the day?" No, I can't sleep like the *others* at this hour. I am not like the *others*. I have a long day waiting for me. She goes: "At least get out of the way". Give me time, I say. Do you want coffee in bed? She gets angry. She's right: coffee. The last time I brought her a cup of steaming coffee in bed, I tried (unsuccessfully) to pour it into her right ear. She doesn't want coffee in bed anymore. She doesn't want me to smoke in bed. Also because of my habit, which she disapproves of, of putting out cigarette butts on her neck. She never lets me do anything the way I like.

³ The Yasna is the main collection of liturgical texts of the Avesta, in 72 chapters.

No sense of humor. I get dressed and start to go out. At the door, she calls me back: "You are not going away all day playing with that good-for-nothing Angrimani." That's right. I'm going to play with Angrimani. What else should I do? Besides, with Angrimani we have always been in opposite fields. Since childhood. He the guard, I the thief. I the sheriff, he the outlaw. Even the other childhood companions said: "But you two, you really can never play in the same team?" Yet, in our way, we are good friends. Together, our days seem shorter. Sure, we bet something. There must be some interest at stake in a game. First, we wagered money and pieces of furniture. Then the wives got in the way. So, we immediately bet them. It turns out that I have Angrimani's wife, and he has mine. I don't think either of us has gained from the game, which means that nobody lost either. But I later found myself with two mothers-in-law, while he has two paternal grandfathers. Then we started betting on words. I won the word "*programmer*," which Angrimani gave up without complaints, also because, at that time, he did not attach the least importance to programmers. Well, I could write a book on programmers, I could enlist armies of programmers - Angrimani can't. But then he made up for it by winning some adjectives, like "*conspicuous*." In the meantime, I won *Cadesia* and *Asperger*, which he let me take away without any objection, not having the foggiest idea of what they meant. I think he confused Asperger with Heisenberg. In return, he took away from me

"*asteroid*," and "*playful*." He can keep them, for what I care.

Finally, I went to my usual place for breakfast. Few places can look seedier than a nightclub on a weekday morning. In the basement where I usually have breakfast, which Ketty rudely serves me, it is dark, but you can feel the sunlight outside and the big city's quiet noises. In our nightclub, which mimics an English pub (it is called "The Rooster 'n Drum") at night, everything happens, and in the morning, it is better not to use the toilet before ten. However, in the morning, they serve an authentic American Breakfast. I ordered the usual sausages with hash browns and sunny side up eggs. While waiting, I took a look at the newspaper. Ketty hates me (I don't remember if it was I who started the hostilities by not giving her a tip, or she by serving me sloppily). The sausages and eggs arrived dripping fat, the hash browns were soggy, while the coffee was lukewarm, and I sent it back. As a little vengeance, I let some grease and some coffee drip on the newspaper, making artistic stains on it.

And then, after breakfast, I went to my usual room, with vaguely indecent furniture and a few tables, all with a green carpet. Here Angrimani had already prepared for the two of us the game of Fravashi (more appropriately "Game of the Fravashi"), a game not unlike Monopoli's

old game, but somewhat more complicated. Besides, nowadays, the game is played with the subsidy of an electronic play station. And of course, we play the adult version. Yes, kids, those sweet darlings, enjoy making the Sims suffer, saying that they're not real anyway. Yet, in modern games, Sims can be sentient; who said they don't suffer? Frankly, I would not like to be a Sim in an adult version of the game played by two children. Consequently, there are now also versions for children, in which the Sims get much pleasure and little pain. A little boring, I must say.

Angrimani was smoking a cigar with his hat at a rakish angle - he, not the cigar. A glass of milk was in front of him, and finally, I had a cup of hot coffee.

The game begins.

"White or Black? Good or Bad?" Angrimani asks me the usual question.

"White, " I reply this time.

"Then we will draw lots," replies Angrimani. We cast lots. I win, and all the seven most important Fravashi (a sort of Jolly, and many other things, always on the side of the White) are in my hand. I will make good use of them. The game begins. We immediately start creating spiritual entities. I was hoping to take *him* by surprise, but Angrimani sleeps little at night, and by now, *he* is already

wide awake. Thus, each of us creates seven major spiritual entities, and we stop - it is useless to continue on this path. We can make legions of spiritual entities, but if your opponent is careful - just retorting blow for blow - you get nowhere. Okay, we move on to material creations. I'm going on the attack, and Angrimani tightens his defense. You want to be careful, with Angrimani, because he is a real devil when he engages in the game.

We take a coffee break while the play station creates the default universe. We decide to fast forward, the stars suddenly appear, like when the city lights turn on at night; generations of stars; clouds of dust. Billions of billions of solar systems form, and perhaps ten times as many planets. Teams of experienced players play up to a hundred planets together; we always prefer to focus on one.

Our planet forms, first experiences a hailstorm of meteorites and comets of all sizes. The first oceans appear.

Everything happens automatically: you can use default physical constants, which produce a suitable planet. If you want, you can change them, but you had better remember that you need water, because, without water, the game, for an inexperienced player, is immediately over.

Once the planet is more or less ready, we go back to play, and we move on. I create chemical compounds, and *he* destroys all of them. I don't take the lure of creating a life based on silicon. I put all my money on the chemistry of carbon, which is lighter. I want fast and snappy molecules, and above all, stable, not like the silanes.

Now I am beginning to make slow progress. We agree on a genetic alphabet (the game is less enjoyable if you don't create life, but the default parameters of the Super Play Station are precisely those you need to make life possible.) I create coacervates of molecules, and primitive and unstable cells, which *he* furiously destroys employing ultra-violet rays.

Here I finally manage to take advantage of an instant of lack of concentration of his. By dint of using ultraviolet rays, *he* creates and selects for me, with his own hands, mutants of cells that resist his weapons. It's the basic concept of the theory of evolution, and *he* didn't get it. I focus on plants, which remain alone on the mainland for a few tens of millions of years, but after a while, if I want to progress, I have to either give up or help them, because *he* immobilizes them and slows down their metabolism. Millions of years of boredom. The accursed man instead invents the ruinous concept of sexual

reproduction and enjoys increasing the number of possible sexes: he arrives at certain fungi that, according to some biologists, have a few hundred different sexes. If they had a love life, it would be a real mess. The mushrooms fail to develop a love life, *he* gets nowhere and just wastes time.

Instead, I elaborate on the concept of male-female and apply it to plants and animals. Insects bode well and ally with plants on land. Other small arthropods have already been allied for a long time with algae in the sea. Both thrive. For about twenty million years, the land plants had had to wait for the wind. I do more; I even teach insects to fly: previously, they ran fast on the ground; they were gray, depressed, and depressing. However, they have been around for 400 million Earth years, totaling almost a thousand species ... I never throw anything away. You never know. But *he* stops my insects, which are now fully developed, with an idiotic tracheal breathing system, which would never allow an insect to grow bigger than a sparrow (ah, yeah, we haven't talked about sparrows yet). I elaborate the concept of breathing with book lungs, very intellectual, one must say, and I apply it to scorpions and spiders (think what a beauty, a civilization all of scorpions and spiders, and perhaps some nice scolopendra, just to liven up the environment). But nothing comes out of it. Or rather, little comes out. A few thousand species against a million insect species.

What about the bees? What about the ants? *He* sterilizes practically all of them, and the bees make honey without the slightest heartbeat of enthusiasm, while they would palpitate, and how! to give a mug of honey to their beloved. Instead, they make honey because they "follow orders," the most stupid and dangerous reason for doing things. A small insect, however, means a small brain. Millions of insects should join together to produce a kind of collective mind (Okay, I might think about it in another match.)

It is high time for the animal kingdom to move on to vertebrates, populate the seas, climb on the land. Fish go full speed ahead: there are perhaps 23,000 different species around today. I tell myself: "What if we put some species of fish, only five or six, no more, for purely experimental purposes, on the mainland?" But lungfish turn out to be a failure. We have to wait. Then it's the amphibians' hour, but I try to bypass them quickly due to their mania of annoying their neighbor with their continuous croaking (that's Angrimani's idea). Thus I pass undisturbed to the reptiles, and I bet everything, except for a minimal strategic reserve, you never know, on dinosaurs.

Dinosaurs on land, in the sea, in the sky, that's my motto – and bigger and bigger. But Angrimani recovers and exploits the foolish frenzy of mine by placing tiny little

brains in these gigantic bodies. Let's face it, dinosaurs will never learn to write and count, let alone create a civilization!

For example, consider the stegosaurus. It is an animal of about five tons, with a brain of less than a pound. I think of a brilliant solution: to put a second brain in the middle of the spine, to move the rear parts of the animal, two legs and tail, not to mention the internal organs. Of course, the two brains have to get along in love and harmony; otherwise, it's trouble. I prepare the place for the brain and everything, but in the end, I give up. If nothing else, the little room I made especially for a brain, but never occupied by a brain, will make the twentieth-century paleontologists argue for years (but paleontologists are a species on their own). The problem is that, unwittingly, with this gimmick, I provoke Angrimani, who gets impatient and makes sure that a big *** (read "asteroid". Ormuzzi doesn't have it in his vocabulary - TN⁴) collides with the Earth, about 66 million years ago. Major climatic changes, the great dinosaurs, which are cold-blooded, die, of the great Rhinoccephalia only the "Sphenodon punctatus" survives. You tell me how to think seriously about a civilization of dotted sphenodons. As usual, I worry about saving something. Certain puny dinosaurs, which escaped from Angrimani's *** (asteroid),

⁴ TN = Translator's note.

are to become birds, and I still have a few crocodiles, some snakes, and some turtles left. Better than nothing. Unfortunately, it is clear to me that the game cannot proceed along these lines. For me, the reptiles are on the way out, and they can go hang themselves.

On closer inspection, the most numerous living beings are and always have been the bacteria, which are among the most ancient living beings. Evolution did not produce any species that could compete with the bacteria; it just created increasingly complicated living beings.

Let's make it short: birds are too frivolous and lightweight; I have only the mammals to work on. But it takes time because they are still as big as mice and have confused ideas: they lay eggs and suckle their babies. No opposable thumbs, and little brains.

The score, which is displayed in real-time, is 10500 for Angrimani and 1500 for me, a few tens of millions of terrestrial years ago.

FOLLOW-UP TO JIM 'S TALE (II)

The Software For All company (SFA Co.)

Fifty floors of bullet-proof glass and stainless steel were all the ordinary pedestrians could see of the SFA. It was enough for all the passersby, who did not imagine what was going on in those fifty floors.

Indeed, past the polished entrance hall covered with precious marble and granite, with armchairs, reception desks, elevators, etc., the floors, apart from a few, eight in all, were all identical. Each floor was a single huge hall with a service area. Each hall was partitioned into boxes as in the past, only larger and covered by a transparent plastic roof. Usually, you could see the inside, but in theory, you shouldn't hear any noise. If one entered one of those boxes, he discovered that he was in a room, like the one in my house, but a little smaller. The boxes, apparently empty, had replaced all the paraphernalia of terminals and peripherals you see in obsolete films. Later, executive employees, such as I was, were allowed to work from home, thanks to a super-broadband connection.

The entire Box, like my Room, was the terminal. It executed orders and made available to those who had the password everything one could wish for: armchair, table, notebooks, pencils, monitors. The only real and non-virtual objects were the skeletons of two sturdy armchairs. The point was that no one had yet found a

way to overcome the problem of mass in holograms. It made a bizarre impression to sit on a chair's hologram, even if it felt hard or soft as a chair. The feeling of hardness was there, but you ended up hitting your butt on the ground. Many, as monitors, preferred one or more entire walls, or the whole Box. At this point, thanks to windows that worked in real-time, the Box practically became the entire world. The most advanced Box models didn't even ask you to utter the password: you just had to concentrate on the thought of it. It was a step forward for security and privacy, but immediately required "*Attention and Focus*," the company's motto.

In the Box, we the programmers created. Most of our customers had no idea of the potential of our central computer, which occupied five floors, 25 to 29 of the skyscraper.

We were paid, and very handsomely, on a time base: each "Box-terminal" was commanded by voice or by thought, and the central computer measured our brain activity. When you got distracted or let your brain idle, you didn't get paid. Of course, it was forbidden to use the Box to play games and make simulations for personal purposes. The time thus illegally employed, which was immediately detected, was subtracted from payable time. If the latter went negative, you got fired, but we all tried to avoid it.

Many of us were able to focus on a problem for up to four or five hours a day. Certain exceptional colleagues of mine reached the maximum allowed of eight hours. However, one must say that, when they left work, they could hardly stand, as if the system had sucked all their mental and physical energies, which was probably true. You try to focus on a problem for even just four hours, and you will see how nice you will feel at the end.

The spacious offices and meeting rooms of the mythical company management occupied floors 48 and 49. The fiftieth floor, the loft, was intended for the frequent parties and receptions. As you can imagine, you could have theme parties, and the walls could become any city, or a landscape of your choice, such as Paris, or the Sahara, or the Himalayas, all (if you so wished) in real-time. A large terrace afforded a view of the city, and was often used by many of the approximately four thousand employees during the breaks or canteen hours, that took place in turn.

The food offered by the canteen was so excellent that for years I wondered whether it was real or virtual. I later discovered that the food was indeed virtual. All the nutritional power was concentrated, perfectly balanced, into an odorless, colorless, tasteless liquid that replaced drinking water.

Eddie visits the SFA ⁵

Once, when Eddie was not yet ten, I took him to work with me just to distract him. He spent nearly five minutes staring open-mouthed at the skyscraper from bottom to top. Then, finally, he let me drag him inside. Those were already the times when the scanning at the entrance had become an unnoticeable operation. It consisted of a simple walk under an almost invisible arch that incorporated all sorts of sensors, and Eddie went through without the slightest problem. It is true that at that time, I never went into the maximum-security ward, so entry was straightforward. Besides, the attendant on guard understood at a glance Eddie's condition from the way he walked, let him go through the control area with a friendly smile, and loaded him with sweets taken from a tray on the desk.

We arrived at my hall on the fortieth floor, where I had my old Box. I could work both from the Box and from home, as I preferred, because I became Division Chief. It had been a great success to get what Eddie and I called

⁵ The visit took place about fifty-one years from now.

"the Room" as a workstation, more spacious than my Box in the SFA headquarters.

One could use his workstation, Box or Room, whatever it was, only for work, but it didn't take Eddie long to get around the obstacle for the Room once he saw me working from home. He had given no more than three voice orders, and my Room on command could become a dark, empty, and inactive Room even for the central computer, so that we could play whenever we wanted. The memory and all the data of our misuse were untraceable (a thorough search would have revealed that they came from the CEO's office) and were instantly canceled. The fact was that presumably, the Room designer had also projected it to play his games, of course, with an absolutely indecipherable password. It consisted of about one page of text, which Eddie had read in less than a minute as if it were a page of a children's book.

I introduced Eddie, who was huddled in fear beside me, to my colleagues. They quickly realized that Eddie was not a child like the others and treated him kindly. Eddie, although bewildered by too many people, did very well. He immediately began to draw harmless colored drawings of the SFA skyscraper by heart, sucking one candy after the other.

Meanwhile, my direct superior, the Chief, called me to his office for a brief discussion of the project my division was working on. I entrusted Eddie to my friend and colleague (and occasional partner,) Martha. But the conversation with the Chief had not lasted even ten minutes when, suddenly, the alarm sounded. The phone rang (the Chief liked to surround himself with outdated, albeit virtual, technology, in a slightly snobbish way.) The Chief listened, put down the receiver, frowned, and exclaimed, "That's curious. I have just received a notification that the central computer will overflow in less than ten minutes. And the support team seemingly has no idea how to stop the process." "But how could that happen?" I asked. "The computer serves almost four thousand programmers who make very intensive use of it. And moreover, several security systems exclude potentially dangerous programs. An overflow is impossible."

"Of course," replied the Chief, who was a very pragmatic gentleman. "An overflow is impossible, but that's what's happening. I'll say more: the overflow is caused by a single program taking precedence over all other programs. The technicians are at work. It seems that the problem originated in your Box. Now go, and hurry up."

I ran to my hall. Here total confusion reigned. All the programmers crowded in and around my Box. In each Box, moreover, there was the same "thing", the "hard"

hologram (i.e., such that the sense of touch could perceive it) of a different Lego chain for each Box, consisting of about three hundred segments, in three colors (red, yellow and blue). The chains kept forming, dissolving and reforming in all possible ways and seemed to move like knots of multicolored snakes. Considering the speed at which the chains were reproducing, it was evident that the mainframe memory was racing towards overflow.

The disaster was likely to happen, mainly because surely most of the chains were not visible in each of the hundred Boxes, but were saved in the central memory. Our central computer could create one chain with three hundred elements and all the holographic data in less than one microsecond. In other words, in each of the hundred Boxes on my floor, we saw for half a minute one chain out of thirty million chains probably saved in the memory at the same time. Of course, there were insurmountable limits to the use of each terminal's memory, precisely to avoid this type of problem. However, Eddie knew how to get around them, so that everything was saved in the main memory, and an overflow was sure to happen.

In my Box and all around, there were all my collaborators and colleagues looking at Eddie in complete astonishment. Some tried to communicate with him to know how he had done it or to tell him to stop his

game. But communicating with Eddie wasn't easy, especially if many people were talking simultaneously, asking different things. Touching the keyboard without his permission, moreover, caused fits of screams and kicks.

When I arrived, Eddie looked terrified. As soon as he saw me, he ran to me in tears. I asked the guys to step aside. I gave him a candy, which calmed him down a little and said, "Eddie, can you stop your game?"

Between sobs, he said: "Eddie didn't want to do anything wrong."

"I know," I replied. "Come on, now stop everything. And don't worry, everything will be alright." (In fact, I thought that I would have to pay dearly for his "innocent" game.)

"OK," Eddie said, satisfied.

Then he recited a very long command, perhaps three lines of code, and as if by magic, the activity ceased in all the Boxes. I begged him to free the other computers, and again he obeyed. He said a few more endless magic words, and all the Boxes started working again. None of the millions of chains remained in the main memory or those of the terminals. Only, we noticed that the central clock was now ten minutes behind. On that day, we all had to work ten minutes longer. The service squad fixed the clock overnight, and we received our pay regularly.

The central computer did not even fine me, nor I received any reprimand.

The technicians following the main memory told me that the problem had ceased no more than forty-five seconds before the overflow occurred. Had I known it, I would have passed out before getting to my office. I didn't have the stuff of James Bond. In the penultimate scene of his classic movies, he always saves the world within seconds of the "Moment of Ineluctable Catastrophe," usually 0 0 7 seconds earlier.

I hurried to take Eddie away before people asked him too many questions. I never took him back to the SFA. After all, the experience had been too strong. There had been too many people around him, and he had nightmares for two days.

The SFA Event remained unexplained, and the team of technicians who "solved the problem" got a reward, taking care not to reveal that they didn't know what to do, but the problem seemed to have solved itself.

Later, I was told that the mechanism was, in principle, the same that was the basis of the very first computer viruses: a virus entered the system and reproduced exponentially until it occupied the entire memory. But since those distant times, there had been substantial

progress, and such viruses were now powerless because they found insuperable barriers. Still ...

FOLLOW-UP TO AGATONE ORMUZZI'S TALE (II)

From Ancient Egypt to the Battle of Cadesia.

"Alas, the battle of Cadesia, which became so legendary that we know a lot of more or less mythical details, but not the exact date, marked the defeat of an army, the end of a dynasty and the defeat of a civilization. It also started the disappearance of a religion."

Some mammalian Sims are now sentient and live along the Nile. They are the Egyptians. I'm about to make something really big out of it, but *he* promptly makes the Pharaohs marry their sisters (convincing them that no other girl was worthy of the honor.) Inbreeding may be honorable but may have bad consequences, and the fools waste their time building futile and bulky pyramids. The Babylonians seem smarter, even if they arrive later, and therefore they also feel obligated to build pyramids. Alas, their land becomes salty, the fertile crescent dries up, and so on. In the meantime, they invent Astrology, and, what

is worse, they also believe in it *en masse*. The Chinese eat rice, and so far, it's okay. But they also use human manure, and here it's not okay: diseases, epidemics, mass mortality. As if it were not enough, they also have an extraordinary tendency to overpopulation. The Amerindians, on the other hand, are behind and enthusiastically slaughter each other. Human sacrifices are very popular. Australian Aborigines waste their time and wits in variations on the theme of circumcision - valuable ideas, no doubt, but, in the meantime, they waste valuable time. Indians have no sense of history and love to divide in all possible ways: statelets and castes. In short, if you look at where the best chances of a final hegemony over the world (and of my victory in the game) lie, in practice, only the Persians remain. Thus, I manage to put together the civilization on which I put all the resources I have left, to the exception of my Jollies.

To begin with, the Persians take Egypt. It is true that I rest a little on my laurels, and Angrimani tickles me with annoying border skirmishes, tiny things, even if the later Greeks create heroic stories out of them. It's a bit like the ant that climbs on the elephant's neck so that its descendants can write in their history books: "Our heroine Ari strangled an elephant." Sneakily *he* takes this muddy miserable village of thieves posted on the ford of a river, the Tiber, laughable when compared to the Euphrates. I don't mind it, and soon I find Crassus in my

way - but I make him do some gargles of molten gold, which for a while keep the Romans quiet. Meanwhile, Alexander the Great was there, but I let him cross Persia almost on a free ride. A change of dynasty was necessary; the Achaemenids pass, others will come. It turns out that Alexander and his Diadochi do more good than harm. But the Roman Empire continues to bore in. Obviously, as I bet everything on the Persians, *he* bets everything on the Romans. That is a huge hassle. The Arsacids even let the Romans take their capital (Ctesiphon) first with Trajan, then with Avidius Cassius, and yet again with Septimius Severus. I must admit that at this point, I doubted whether I had bet on the wrong horse. The Romans took three times my capital in eighty years, and the Persians never arrived within two thousand miles from Rome throughout their history. The Arsacids, we must admit, were a worthless kind. Luckily, a new dynasty arrives, the Sassanids, and my good King of Kings, Sapor I, treacherously captures that fool Valerian, and forces him to act as his groom. Even the barbarian allies of Rome tell his son Gallienus: "Come on, let's free your daddy!". But Gallienus is a philosopher, and therefore he doesn't care that much about daddy. Besides, he is a philosopher only up to a point because, despite Plotinus begging him in every way to found Platonopolis in Campania, he refuses. The fact is that the inhabitants should have lived there according to the laws of Plato's Republic, and only a few illiterate wretches

were found, who had not read the laws in question, and wanted to go and live there. No Platonopolis, and with the money he spared, Gallienus also pays me a tribute. The Byzantine Caesaropapism arrives, with the emperor sticking his nose in matters of religion and combining the Papacy defects with the troubles of the Empire. To make it short, I take Jerusalem from the Romans. They don't give up. Ten years later, Heraclius recaptures it, and now the two empires are almost equal in every sense, equally exhausted by a long series of victories and defeats. Here, I finally open my eyes, and I understand that I have fallen into the cunning trap of Angrimani. The long history of fighting with the Romans was only to distract me. Instead, Angrimani, with his tendency to rely on robbers, for centuries had protected a despicable band of marauders, camel drivers, and camels in the corner of a desert, and suddenly, in a few years, he had made an unbeatable army of them. He throws against me a detachment led by a certain Sa' d ibn Abī Waqqās (I believe that in the battle that followed, among the Arabs, there were more names than people). I laugh at it. We meet in Cadesia, thirty miles from Baghdad, which, however, did not exist yet. It was founded a hundred and thirty years later. He has thirty thousand men, and I have a hundred and thirty thousand. Four days of battle. The first is the "rescue day." Suddenly, six thousand Syrian Muslims arrive on the battlefield. I thought I made sure they got lost in the desert with the usual mirage trick.

Okay, I lose the first round. There is a sudden shock on the second day ("the day of concussions"), and my Persians begin to become demoralized. Then there is a nocturnal confrontation that terrifies them with a mournful barking of dogs lost who knows where - it is the "night of the barking." (Psychological warfare, do you understand? Some Arab historians say that it was the Arabs themselves who imitated the barking of dogs.) I am well prepared for the fourth day, but I am so focused on the battle (if I lose this one, I have very little left, and I have to start all over again or resign) that I forget the weather. Thus, a sudden sandstorm arises (which will give this unfortunate day the name of "day of the whirlwind,") which blows in the face of my ranks and spreads panic. The Persian army loses Rustam, the general in chief, the battle ends in a rout, and I find myself that I have lost practically everything.

The current score is 55000 for Angrimani, 2000 for me. If he gets to 100,000, or I get to zero, I'll lose.

The only resource I have left are the Fravashi, the Jokers, to be used with caution because they are basically good and tend to get attached to the Sims. In any case, I put them all on the line and give them names and identifications, which include words that Angrimani cannot use.

FOLLOW-UP TO JIM'S TALE (III)

Martha

One evening I invited Martha to dinner at one of the most expensive restaurants in Washington. Despite the expensiveness of the place, instead of the Stilton I asked for, I was treated to a sort of jeremiad of the *maitre d'*⁶. He told me, almost in tears, that he had enough of throwing out whole carts of valuable imported cheeses every week, because, ultimately, the average American only likes mild-tasting, mild smelling cheeses, like the "American Cheese," or the Cheddar. In conclusion, in that restaurant, and, as far as he knew, in all of Washington, they no longer served French or English or Italian cheese in any restaurant.

After dinner, we went to a quiet night club on top of a skyscraper. We enjoyed the view of Washington while

⁶ *maitre d'* (Fr.) = Head waiter.

sipping some expensive whiskey older than Martha. We also danced a little. We whispered the words that are always whispered in such occasions and mean nothing in any occasion. She was dressed very elegantly.

I took her home. In the car, she smoked all the time. On the doorstep, before the ritual farewell kiss, a souvenir of our school years, I asked her if the evening had been to her liking. She threw away her cigarette with a sharp gesture and said to me: "Interesting question. From what point of view? "

I should have expected it. However, I was annihilated. Such an answer definitely showed no enthusiasm. I said, "That is, no."

"Indeed."

"But what did you expect?"

"Didn't you notice that you were doing all the talking?"

(Ouch, I thought. *In vino veritas*. But what is the truth? And most importantly, who wants to know the truth? Even Pontius Pilate had gone to speak to the people without waiting for an answer. Next time, I concluded between me and me, no alcohol.)

She went on: "I would say that you have treated me almost insultingly, with disinterest. That's it. Disinterest is the word. I almost prefer a football player who has an IQ that is half of yours, but at least he cares about my feelings."

I refrained from saying the line that immediately came to my mind ("I didn't know you women had feelings"). Too many of my friendships with women had had their end because of a joke, which my partners did not appreciate. Instead, I said: "What's next, then?"

"Well, you're okay for a pleasant evening now and then, just for a change. You are a gentleman; you have a brilliant conversation because you have imagination. But for a stable relationship, a woman has to be crazy, to want to be all the time with someone like you. And do you know why? A woman immediately feels that there is no love in you, and there cannot be any love."

I made a brief examination of conscience and realized that she was right. I had always suspected it. For me, love did not exist; it was an unconscious fiction of human beings imprisoned by the law of evolution in the net of heterosexual sex. If it wants to participate in the fight for the "survival of the fittest," any species must reproduce. Needless to conjure up higher ideals. Period.

She was silent for a while, thoughtful, and maybe scared of the judgment she had given of an evening, which had been all in all pleasant. I went over my sentimental history, and I realized that I had rejected all my possible wives of the past, perhaps just for the disgust of feeling prisoner of an ineluctable law, to which all living beings were slaves.

"You're right, I told her. You are right. Some things just don't interest me, and love (not sex) is one. Actually, I don't even think love exists. But we don't have to stop being good friends because of our different views."

"Uhhh, she said. Generally, the proposal to remain good friends is made by the woman, when she dismisses the man. However, I have seen that you can be a good friend."

"How did you ever come to such a conclusion?"

"Your relationship with Eddie. It's the only thing that raises my esteem for you above zero. I immediately understood that your affection for him is genuine and does not conceal the hidden agenda that many suspect. How much I'd give to make you love me as much as you love Eddie! But what is it that Eddie has, and I don't have?"

She asked this last question in such a heartfelt tone that it hurt me. So I tried to bring some order back to my thoughts, and I answered: "Maybe the correct question is: What is it that you have and Eddie doesn't?"

"Okay, what is it that Eddie doesn't have?"

"Eddie reassures me because he doesn't have a final purpose in what he does. He lives only for immediate objectives, not related to each other. At least, that's what I believe."

"And you would like to give him an overall purpose?"

"That's the last thing I would do. On the contrary, I would be grateful if Eddie could help me to understand how one can live and be happy without having an overall purpose in life, as I don't. Only, I'm not happy."

"Do you really think that you could have a happy aimless life? Eddie doesn't seem happy to me, quite the contrary."

"There are probably other problems at stake here. For example, perhaps Eddie would be happy if he could live in his world. But unfortunately, Eddie has to live in our world, where he is not self-sufficient, is loaded with tasks he does not understand and has to interact with a majority of beings different from him and unable to

understand him, assuming that they want to understand him. Or maybe you are right: lack of purpose and happiness could be incompatible. But I wish Eddie were happy. If I could only find a way to make him happy, maybe I would also find a way to make myself happy."

"So, your ideal would be to have no purpose in life, Jim? Really? "

And that evening, there was no ritual farewell kiss.

I thought for a long time about this conversation. One day, during a lunch break, Martha and I went to the SFA skyscraper terrace. From the nearby skyscrapers' offices down to the street, we could see thousands of men and women bustling about.

I turned to Martha and said, "From the way they hurry, it looks like everyone has absolutely important things to do."

"Of course," Martha replied. "At the very least, they are terribly important to each of them."

"And everyone feels the same urge?"

"Yes, she told me. See that guy over there on the forty-sixth floor of the skyscraper opposite? The guy in the light, hazelnut-colored dress."

"Yes, I see him."

"Good. No one has ever seen him do anything."

"How do you interpret that?"

"He has other, more important purposes."

"Do you think that all of us, whether we move or stand still, have some goal in mind?"

"Not Eddie, and maybe you neither. "

"Exactly. But don't you realize," I said, "that all this humanity that we see bustling about on the various floors of skyscrapers, all the way down to the street, with pedestrians, bicycles, motorcycles, cars, taxis, vans, police cars chasing cars of evildoers, pursue purposes that most of humanity, starting with me, does not care about? Can't you see that they run almost in equal numbers in both directions, and therefore ultimately they engage in activities that cancel each other out, up to the total algebraic sum, which is the "great purpose" of the whole of humankind?"

"What would that be? "

"Zero. Humanity has no purpose. Thus, Mother Nature assigned the human species a task, that of competing with other species. To accomplish such a task, we need to be convinced to live and reproduce. Nature then takes care of making us die in pain, to favor natural selection. This is the mechanism of evolution, which does not care for the individual, that is, neither for you nor for me."

"Nor for Eddie."

"There you are wrong: Eddie escapes the mechanism I described. Eddie is an oversight of Nature, something - in my opinion - potentially dangerous to the system. I am sure that Nature has realized that, under an apparent disability, Eddie hides extraordinary abilities, and therefore Nature is trying to get rid of him. And I will do everything I can, so that at least he does not suffer."

"You are really fond of Eddie, Jim."

"In the meantime, Nature, to encourage us to live and reproduce, has combined one pleasure with sex and one with eating: lust and gluttony, as well as greed, the handmaid of both pleasures, which ultimately becomes a pleasure in itself. And we are slaves to the gimmicks of Nature, which I am describing here as if it were a rational being, while it is merely an infernal mechanism in which only one thing is sure: Nature does not care about the

individual. If you then take a closer look, you realize that Nature does not even care about the competition to which it forces the various species, by hook or by crook. Sooner or later, whether the universe is cyclical or eternal, life will disappear.

"We are optimistic today, right? "

"I don't know. But you understand that if all our activities are aimed at sex and eating and drinking, these are purposes that matter only to the individual. The human "species" does not care because, first of all, it is an abstract concept that does not reason, and then, as I told you, even if it should win the competition between species, it is destined to disappear sooner or later. Every so often, I wonder if all this is nothing more than a bad joke of chance."

THE FILM "RENDEZVOUS IN CADESIA" (I)

"Atrox , contumax, plus semel renovatum proelium"

("Atrocious, proud battle, renewed more than once," by Abulfeda, see page 5).

November 16th ⁷

To shoot the remaining scenes of the film "Rendezvous in Cadesia", the first part of the great trilogy "The Sword of Islam", celebrating the rapid conquest of North Africa, Iran, and India by the Islamic armies starting from the 7th century, the entire crew of the MCF Hollywood studios had to move to Iraq. The decision had aroused the complaints of all the actors and technicians, who did not understand why the director was not satisfied with Nevada, or, at most, Arizona.

"And the dromedaries?" the history consultant repeated indignantly, an argument that was ultimately conclusive. It was hard to find thousands or at least hundreds of dromedaries in Arizona. It was all the Americans' fault, who had not wanted to continue to breed dromedaries in Arizona, where, apparently, the dromedaries, imported in 1856, were doing very well, and survived even if abandoned by everyone. Reportedly, the last sighting of a dromedary grown wild was around 1940.

Aside from the dromedaries, the Emirates had offered to provide tens of thousands of extras and pay most of the production costs, which were not small, but only after seeing the film and judging whether it celebrated the Islamic conquest worthily. There was no lack of insignificant, but torrid love scenes, just to attract even

⁷ The episode takes place in about fifty-two years.

the public less interested in historical/religious events, which, expectedly, would still be the majority. Of course, here too, the sponsors had demanded the best actresses of the moment.

Finally, little by little, the whole troupe had arrived at the original sites of the battle. It was a nasty surprise to discover that the city of Al-Qadisiyah was almost non-existent. But the Emirates immediately provided an immense tent city, where in principle, one could find all the comforts of a five-star hotel. However, the first actress, who had been practically dragged by force to Iraq, was rightly thrown from the saddle by a dromedary, fortunately without consequences, despite the animal's height. The first actor (who had begun poorly by quarreling with three other actors, who thought themselves no less first than him) protested because he found sand everywhere, from sandwiches to Coca Cola. Indeed, the wind and the nearby desert worked the magic.

Despite all these troubles, on November 17th, the troupe was finally able to start filming the battle, following the guide of Gibbon's text ⁸ suitably adapted to modern taste, which, as we know, is particularly demanding in terms of ancient history, especially in America.

⁸ *E. Gibbon: The History of the Decline and Fall of the Roman Empire, Chapter LI (Ed. 1897)*

On the morning of the first day, the plan was to shoot the highlights of the first day of the battle, traditionally called the "day of rescue." The great director wandered like an old lion among the crowd of young directors and admirers. "So here we go, boys, do your best." Perhaps counterintuitively, commanding real armies on a battlefield is conceptually simpler than moving armies of extras, especially if the latter are illiterate peasants who speak different dialects. A multitude of interpreters is needed to transmit the assistant directors' orders with the help of megaphones, running up and down the extras lines. Moreover, in a real situation, there is the advantage that *usually* the battle is not repeated immediately, the armies do not have to reform on the starting positions etc. Think instead of the confusion, which arises directly if a movie scene has to be repeated, after a melee at the end of which it is difficult to distinguish one side from another. Besides, all the extras in the battle are still alive and well, and run around trying to figure out where they should be.

But, for the day of rescue that, as everybody knows, culminated with the timely arrival of six thousand Syrian Islamic soldiers, everything seemed to be going for the best. On the battlefield, the Persians, in their multicolored uniforms and heavy armor, were crushing the Muslims, who were shouting in despair. At this point, precisely

from the same heights that had witnessed an almost identical scene one thousand five hundred years earlier, the six thousand Syrians were to appear. The Persians were to disband in terror and flee "*en catastrophe*"⁹ towards their encampments.

It was not going to be: yes, as planned, suddenly, at a predetermined signal, accompanied by the lugubrious sound of a thousand horns, the six thousand newcomers came down from the heights to the battlefield. And yes, the scene was impressive, but...

"Cut!" the old director cried in a choked voice, turning purple. He jumped up and stormed off in a rage, throwing havoc among the assistant directors. What happened? A look through the binoculars explained the catastrophe to the assistant directors and technicians. "I don't know who could have made such a mistake!" screamed the assistant directors accusing each other. The newcomers had the wrong uniforms: clearly, they were Persians, and not Islamic. By affinity of uniforms, they thought it appropriate to go and swell the ranks of the Persians, while the extras of the Arab side, not understanding what was going on, were fleeing *en masse*

⁹ "*en catastrophe*" (Fr.) = in the utmost confusion, abandoning weapons and equipment.

to the Arab encampment, duly filmed by the operators, who did not know what was happening either.

The idea of changing the uniforms for that day was not even considered. Instead, it was decided to repeat the "rescue day" filming after the others, on the fourth day. On the morning of the second day, November 18th, the scenes of the "day of the shock" (the one that historically was the second day of battle) were shot.

In the afternoon, it was the turn of the scenes of the "night of the barking," which required the arrival of special effects, because the director had decided to shoot them during the day, using the "night effect." The official reason was that there were too many extras to manage, and the director preferred to do it when there was a minimum of visibility. In reality, the important thing was the breakaway of the Persian elephants, who were not stupid, and preferred to run when one could still see.

However, both for the "day of the shock" and the "night of the barking", the director had decided to retouch history. He had made the Persians win, albeit by a narrow margin; otherwise, from the first episode, the average American viewer would have said: "Yeah, you can see right away that the Arabs will win." Being traditionally in favor of the so-called underdog (as long as the latter was not the enemy), the American viewer

would have done a useless and counterproductive rooting for the Persians.

Unfortunately, the best of the scene had failed because the elephants had refused to escape and had charged the Arab ranks, making their defeat even more credible.

Now, in the late morning of the third day (November 19th), everything was ready to shoot the scenes of the decisive day, the "day of the whirlwind."

At this time, the score was still stable, 55000 to 2000, unchanged since the terrestrial year 646 AD.

FOLLOW-UP TO JIM'S TALE(IV)

19 novembre¹⁰

Meeting at the Pentagon

The phone rang in the middle of the night; it must have been 3:30 AM. It was my boss, who sounded rather overwrought: "Wake up, Jim. We have an emergency."

¹⁰ Same date as the previous episode.

Get dressed as fast as you can and go to the front of your house. I'll be there in five minutes. "

I did my best, but it took me seven minutes. Among other things, I had the bad idea of drinking coffee while brushing my teeth, just to save time. When I got out on the street, spitting out coffee and toothpaste, I found a big black SUV waiting for me with the engine running.

In addition to my boss, two marines were aboard. One was the driver. There were short greetings, while the vehicle started the long ride through Washington's sleeping suburbs. We were silent because no one had a clue about the subject of the meeting.

At five in the morning, the Pentagon was already in full swing, with all the lights on. The formalities were swift, and in no time I found myself in an internal meeting room, of mediocre size, and without windows. It was certainly not the famous War Room, but, at least, coffee was ready on the table in abundance. At least eight people quickly arrived, three in military uniforms and five in civilian clothes. They looked tremendously important, although they were utterly unknown to me. Other people came with them, evidently yes-men, as I was after all. The room was full. Two stiff marines stood at the door. I sat in the second row behind my boss,

determined to be silent and say the least, only if questioned.

The person sitting at the head of the table seemed the most important. He asked for silence, did not even introduce those present (many of whom appeared to be well acquainted with each other), and immediately jumped *in medias res*.

"We have summoned representatives from the CIA, FBI, and NSA, as well as various branches of the Army of the United States, to discuss an event that started at least two hours ago and is currently underway. For several minutes all mainframe computers of the Agencies here represented, down to the staff's PCs, have connected. In theory, it should be impossible, and a significant risk to our nation's security, which must not rely on a single Mega-computer.

Evidently, however, someone has managed to do this, and to all effects, our primary computers are now working as one giant computer on a single program. The connection uses the Internet and all internal LANs."

"Surely," someone observed, "all connections to the Internet are secure."

The meeting chairman turned as red as a turkey and said: "Of course they are. I would be grateful if you all could refrain from making unnecessary comments. Please, Anderson, brief those present on the situation, trying to use as little technical jargon as possible."

A bespectacled guy, some big shot's IT consultant, said: "Since the beginning of the crisis, about two hundred experts have been working on the problem. First of all, we have analyzed the program the Mega-computer is running through all computers in the US. The program penetrates internet addresses using a "web crawler" robot. It is quite sophisticated: it does not merely read data, but in every computer it enters, it introduces a virus that turns all infected computers into so-called "zombies," that is, computers subservient to the initiator of the infestation. We tried to understand how it got into the most protected computers, such as those of our defense agencies, and we concluded that most likely the access procedures are available in the Deep/Dark Net. Incidentally, navigating in the Deep Net, which is about twenty times more extended than the "Surface Web," requires sophisticated robots, passwords, credentials, and other devices. In our case, the viruses brought by the web crawler, through a program that we can call "universal lock pick", penetrate the computer from their backdoor, quite possibly thanks to the information available on the Deep Net.

If I may be allowed to make an observation, our defense agencies' central computers have always been the subject of attacks by hackers, who then almost always put the information collected in the "submerged network."

Lately, the attacks appeared to be decreasing, and maybe we lowered our guard. But, as far as I can remember, there has never been such a coordinated attack on all the defense agencies.

"Look," said the president, who had a natural tendency to get angry. "Using even less technical jargon, what are you trying to tell us? That you don't know how the virus got to our defense agencies' central computer, apart from all the others it has invaded without the need for sophisticated methods? That you don't understand how the program works, that the various zombies, as you call them, are running?"

"If you want to put it that way," said the intimidated expert, "your version gives the idea, at least for the moment, but it's too negative. We have a pretty good idea of the structure of the program the zombies are running."

"And what about the other countries?" The C.I.A. representative interrupted because, not having understood much of the discussion, thought it appropriate to change the subject.

"It seems that not only our embassies but the computers of entire countries are stuck working on that one program. We're talking about five billion of computers. Internet browser operators are overwhelmed by constant phone calls asking what is going on," the president replied.

"To me, the culprits are now and will always be the Chinese," muttered the CIA representative.

"It doesn't look like it. The embassies of the most "suspicious" countries, including North Korea, are furiously asking if they should consider themselves at war with us. Let's cut to the chase. We have here two representatives of the company that has renewed our systems, and we would like to hear their views," the president answered.

My boss nudged me and said, "You speak."

It was no surprise to me. I politely raised my hand and said: "But did you understand what this program does?"

The IT consultant who had already spoken expected no better, and cleared his throat: "After taking over the computer, the virus runs a program we have dubbed WHOLE-EARTH. I must say that normally a zombie

does not realize that it is running programs unbeknownst to the P.C. owner. Still, in this case, the WHOLE-EARTH program is assigned an absolute priority by the virus, and the computer progressively closes all the other programs it is running. That happens very fast, so the owner realizes in a matter of seconds that he has lost control of his computer, which in general is not true for zombie computers."

"If I understand correctly, you have deciphered the WHOLE-EARTH program, at least in its broad outline," I said.

"Exactly. In principle, it is the most trivial program you can think of: the zombie computer must do two things.

- 1) To reproduce the virus in other computers. As the virus continues to reproduce, and each of the infected computers infects many others, the number of infected computers grows exponentially.
- 2) To run the WHOLE-EARTH program, whose essential task is to overflow the infected computer. To this aim, the program first assigns itself the highest priority. Secondly, it removes all the possible defenses that the computer possesses not to overflow: maximum length of variables, maximum length of cycles to be executed, limits to the memory assigned to a program, etc. Finally, it requires each infected computer to build at random chains of thousands of numbers from 0 to 32 in all possible

combinations and put them all in memory. The program stops only once all possible chains are in the memory. The length of the chain depends on the power of the computer, which the web crawler ascertains. If the maximum possible length is 10,000 numbers, the computer must randomly construct all the chains of ten thousand possible elements. Since the calculation is done at random and the chains already calculated cannot be avoided, even if they are put into memory, we see that the task gets longer and longer as it approaches the end, because it is less and less likely to be able to build a new chain to finish the task. The failed attempts contribute to filling the memory. I just want to note that if the length of chains required is 10000 numbers, the possible different chains are about 3×10^{15051} . And, while I point out that the number 10^{15000} is an immense number, I wish to point out that the number of attempts to be made at random in order to build all possible chains is about equal to the square of the number of chains, i.e. 10^{30000} . And all failed attempts must be recorded in the memory.

"How huge is this number?" The president asked.

"Well, it is thought that in the entire universe, counting gas, dust, galaxies, stars, nebulae, and planets, etc, there are about 10^{80} protons. According to classical mechanics..."

"Please, leave classical mechanics alone," cried the president.

"Okay. But I must recall that, as I said, if the infected computer is very powerful, the program forces it to stretch the chain up to the maximum possible number of elements. Let me explain: if the computer can make lists or chains of one million items, it must make lists of one million items. In that case, the number of possible chains is about 10 raised to one and a half million. A one followed by a million and a half zeros! Meanwhile, the crawler searches for other computers connected to the Internet.

But, and herein lies the trick that makes the program scary, when it completes a sequence, a computer has to put it in its memory. Then it has to examine the memories of all the computers already infected to see if the sequence has already been created by other computers. It must then put it into its memory, with an identification, such as the Internet Protocol (I.P.) address of the controlled computer, followed by Y if the chain is already present, N if it is absent ."

"Do we know where the original virus comes from?" I asked.

"You know very well that since the early days of viruses, thanks to the very structure of the network, it is practically impossible to trace the original computer. The attack, at first glance, seems to come from all sides. Still, we have used our most powerful means to trace the origin of the attack. They have given a grotesque result: it seemed that the Office of the President of the United States had originally launched the virus. Of course, we have asked the President with due caution, and, as expected, he knew absolutely nothing. On the other hand, he went ballistic."

The answer of the expert gave me chills. In some way, Eddie must have entered, either physically or virtually, into my Room. Fortunately, the rest of those present did not insist on my question. I received only a few looks of contempt.

"But it's a trivial program! "Many shouted.

"Not so trivial and yet lethal. For example, if each chain is built in a tenth of a microsecond, a computer creates ten million chains every second. And it puts them into its memory. It must then compare each chain with billions of chains built in an increasing number of computers. And it has to memorize the results. Within a short time, any computer on this Earth is saturated and presents a warning like what was once called "the blue screen of

death," i.e., the computer must be restarted, **but it is restarted as a zombie, no longer controlled by its legitimate users."**

"Still, the whole system relies on the Internet: it should be possible to turn off the Internet and reset everything. It will be quite a job, but it's not impossible," someone said.

"I think it's too late now. In the two past hours, the virus certainly infected most computers on Earth, starting, we believe, with the most powerful ones. However, the Internet administration cannot turn off the entire network, which from the beginning was designed precisely to make a total closedown impossible: you know, first because of national security needs, then to foster freedom of communication and all those things. The internet protocol was specifically designed so that communication units (the so-called data packets) could find a way around the Internet parts, which were out of order. However, even large geographical areas of the Internet such as China, from time to time, have been blocked by local authorities, either for political or military purposes. Needless to say, with the alternative means of communication that exist now, especially with the development of the satellite communication systems, making restricted areas impermeable to Internet has

become increasingly difficult. Blocking the entire Internet is virtually impossible."

The president said: "We are facing a crisis of serious proportions, and we must face it as a team. We have three possibilities:

First: the crisis is caused, with or without blackmail intents by, let's say, private hackers, alone or in a group.

Second: the crisis is caused by a hostile power.

Third: the crisis is caused, voluntarily or involuntarily, by one of our agencies. I explain why I make such a hypothesis. The Internet was practically born here. We have heard that hackers may have obtained the addresses and other essential information on our national defense's most critical computers by exploring the Deep Net. But are we sure? What if one of our agencies already had all the addresses and information needed to get into those computers? For example, one of our agencies could infiltrate the computers of agencies of other powers, which I would accept without objection; or it may want to poke its nose into the computers of other agencies in this Country, to have a monopoly on critical data. And that wouldn't suit me anymore. Sorry."

The last statement caused a wave of protests from the representatives of the various agencies. Some considered themselves insulted and threatened to leave.

"In any case," the president said, unperturbed, "it could also be an experiment that got out of hand. Can all the Agencies attending the present meeting assure me that they are not carrying out any such research projects? " The interlocutors fell into silence. It was clear that all the major agencies had some such project, and none could guarantee that no incident had happened during the night.

However, after a few seconds of silence, the protests resumed with doubled violence.

"Okay, I'd rather not make direct accusations, but I ask the CIA representative to assure us that his agency is not trying to build the Mega-computer on which all the computers in the world would depend."

"I will not tolerate such insults," the CIA rep yelled.

"I rephrase it. Did you do an experiment, which got out of hand?"

"No, no, and no." But the CIA man whispered to his assistant: "But I have to admit, I wouldn't mind if we did."

The atmosphere was getting red hot: the climate was not the one to make sensible decisions.

My Chief tried to distract the contenders. "It could be another kind of experiment," he said. "We have seen something similar at the SFA Co Headquarters, about one year ago. Dr. Palfrey here could perhaps brief us."

Suddenly, I remembered that I was Dr. Palfrey. I said: "I can't tell you much. A computer nerd, my friend, took control of all the computers in the SFA in a very short time. We stopped him just seconds before the mainframe crashed. However, it was a far simpler problem because all the SFA Co Headquarters' computers were just terminals dependent on the central computer. It is true, though, that all the terminals, which had become zombies, ran the same program, which randomly created all possible chains of, I think, three hundred elements, by permuting them. In the embryo, it was the WHOLE-EARTH program. This similarity is the reason why I mentioned it."

"Interesting," the president said. "But why did your friend do it? "

"The friend of mine, Eddie, is a child of eleven, and is affected by the Asperger syndrome, that is, he is autistic, but of the highest level, a Savant. Asking him why he did it is pointless. Probably, for him, it was just a game like any other. If the child were a philosopher, I would have an idea, which certainly cannot be his idea. There are too many things he cannot have thought of."

"We don't have time to deal with philosophy," the president cut short, pronouncing the word philosophy as if he were spitting out the initial *ph*."

"I would be interested in hearing Dr. Palfrey's idea," said a gentleman seated to the right of the president, who had been silent until then, but whose opinion seemed authoritative.

There was some commotion around the table. Then the president reluctantly gave me the word.

"So: tell us your "philosophical" ideas and see to make it short. I have a very low tolerance for philosophy."

"Okay. The idea is ancient. Chinese and Greek philosophers and others thought that our entire universe could be just a dream, i.e. a simulation of some sort. Nick Bostrom resurrected it with physical arguments around

2003, but science fiction had already been working on it since the 1960s."

It was like throwing a bomb in a pond crowded with frogs in a bad mood. Many shouted that it was all nonsense, that everyone had seen the old cult film "The Matrix," and that it was all bullshit.

But the authoritative gentleman was not satisfied. He said, "What do the lists of numbers that all computers must create have to do with the question whether we are a simulation or not? "

"If we are a simulation, the 'Super Simulator' that is responsible for simulating our universe must be something in principle very similar to one of our computers. Since we are its creatures, or creatures of those who designed it, the logic on which our computers work is most likely the one on which the Super Simulator works."

"Well, that's not necessarily the case," said the authoritative gentleman.

"It is not certain, but it is probable. In any case, if we are part of a simulation, as a minimum, we must admit that the Super Simulator is already running the super program WHOLE-EARTH; otherwise, we would not see its simulation."

"That's true."

"Then, one way to find out if our entire universe is a simulation is to try to implant a virus in the Super Simulator, making sure that it runs the WHOLE-EARTH program until the inevitable overflow."

"But how could we go about loading a virus into the computer that simulates us? Where is the terminal, or at least the USB socket, or the key or the CD?" The computer expert asked.

"Here," I said, "the answer, I'm afraid, is straightforward. As I said, the idea is that if the WHOLE-EARTH program is in progress on Earth, it means that the Super Simulator is simulating it. Which means that the Simulator is already running our program, which is due to our free will, but it is part of his simulation. A single simulation, in fact, does not predict the future. The virus was built by us Sims inside the Simulator, which has already activated it, and with which it has hit all the computers on Earth. Now suppose that all the computers on Earth overflow. The Super Simulator will simulate the overflowing, but what will it do regarding itself? If the "universal lock pick" had opened its own backdoor and the Super Simulator were infected with the virus, it would run the program. It would have to overflow, stop, and at least terminate the simulation."

"But don't you think it would have defenses ready to stop the virus? If we have them, do you really think it does not have them, being so much more powerful and advanced?" Asked the expert.

"And wouldn't it also know the thinking of whoever made the program, that is, the intention to find out if we are in a simulation or not?" Asked the authoritative gentleman.

"One at a time, please. I should remind you that the program's author is an autistic child whose reasons are practically impossible to discover. In a certain sense, an autistic child is a question left open by mistake by the simulation. Certainly, Eddie, poor child, does not want to do any experiment, but probably is the only person on this Earth capable of designing and running a brilliant program, aiming at putting together the most potent possible computer on Earth, the Mega-computer. Unfortunately, however, the same program is performing a dramatic experiment unbeknownst of him."

"What does that mean?" Asked the authoritative gentleman.

"That, thanks to him, we could discover that our Universe is a simulation."

"Precious information indeed, but I imagine there is a downside."

"Unfortunately, yes," I replied. "Our discovery would be based on the fact that the Super Simulator would cease to function, the simulation would end, and our Universe would cease to exist. Like that, in an instant. We wouldn't even realize it. "

"You are saying that the Sims in a simulation can turn off the computer that simulates them."

"Nothing strange about that," I replied, as the bespectacled expert nodded. "It has long been known that an instruction, introduced in the computer or a program, even in progress, can stop the program or even turn off the computer. The Sims we play with are nothing more than programs too, and they can contain the "killing" instructions we are talking about."

"I don't see how you can simulate free will in such a way that a Sim stops the simulation," the authoritative gentleman said.

"Free will could be simulated in a simple way," I answered. "Suppose that each time a Sim has to take a decision, he selects an "instruction" randomly out of a list of, say, one thousand instructions. If you think of it, our decisions are a bit like that: you have many options,

but your choice is either forced (and predictable) or not far from random (and unpredictable.) One of the thousand options could be the instruction 'stop the simulation', which, as I said, exists in many programming languages".

"Okay, but why would the Super Simulator want to do the experiment to simulate our universe and make it vanish at random?"

"What a scientist has in mind is difficult to say, and frankly, I would not be able to answer your question".

"There's one thing I don't understand," said the bespectacled expert. "The program could have been much simpler and more lethal, given and not granted that the crawler can overcome all the defenses of the Super Simulator. For example, you could start with $n = 1$ and then loop, adding 1 to each step until $n + 1$ is less than n . Since this never happens, the Simulator would enter an infinite program that would compel *any computer* to overflow sooner or later. In contrast, in a very distant future, the Simulator could complete the task the WHOLE-EARTH program assigned to it."

"Yeah," I said. "This gives us an idea of the time scale of that world".

"I don't even want to try to imagine it," the expert groaned. I had the impression that he was shuddering.

"But you are right," I said, "perhaps the program *must* contain a cycle that sooner or later ends in order not to risk spreading like a virus and overflowing all the computers in its world. Following such a line of thoughts, I came to think of another possibility, against which not even the Super Simulator of our universe could have any defense. The simulation does not necessarily have to be part of a scientific experiment. After all, we can also think that in that superhuman world where *They* simulate our universe, our Super Simulator is no more extraordinary object than a play station is extraordinary for us. I mean, I don't know a single child in my neighborhood who doesn't play with it. However, in a play station or video game, the simulation would not be the game's goal, but the means, like the playing cards of a deck of cards. Let your fantasy run unbridled; you can do it for free. Our universe is not that small, but you can imagine that in that superhuman world, there are billions of play stations active at this moment, like now on the Earth. And billions of our years are just minutes to *Them*," I concluded.

"What I have just heard are is the most far-fetched and idiotic SCI-FI statements I have ever heard. I cannot accept that we waste time listening to such nonsense," a

uniformed gentleman said. It was an almost unanimous response. It seemed that I had achieved a consensus view.

The authoritative gentleman, however, seemed interested and concerned. It was almost fun to continue my explanation, counting on his support: "Simply put, the horror scenario would be as follows: there are two players with a Super Play Station. To win, one of them is cheating, and in some way has made it easy for our Eddie to do the trick, which will give him the victory. If the Super Play Station, in his world, is nothing more than a toy, certainly no great precautions were taken to prevent a simulation from stopping itself.

Lots of video games on this Earth crash for one reason or another, and nobody bothers. Furthermore, somehow the cheater would have hidden from his opponent what is about to happen, to avoid any defense.

But maybe a computer overflow is part of the game. I think that making the Super Play Station overflow might be the equivalent of "declaring Rummy" and "going out" at Rummy and related games. There would be no need to cause a crash that makes the computer inoperative: it would be enough to force it to close the simulation of our universe and reset the play station without damage. I am sure that Eddie, a gifted but unconscious instrument in the hands of the cheater, had

no idea of the hypothesis that we might be Sims living in a simulation, or of the existence of a Super Play Station. Surely, he has no idea of the programming language that the Super Simulator understands and did not want to cause a crash to stop a simulation of whose existence he was not aware. My little friend Eddie "just" wanted to create the most powerful computer possible on Earth, the Mega-computer.

And he did it.

Unfortunately, even if studied without realizing the possible results, which, moreover, few in this same room seem to believe, a well-designed virus aiming at creating the Mega-computer was the simplest way to get much more, that is, the overflow of the Super Play Station and the end of the simulation. But that would be nothing more than a game won or lost like many others in that world unknown to us. Perhaps the Super Play Station, once it crashes because of overflow, stops everything, gives the victory to the player who has "gone out," and then automatically resets, ready to begin another game."

While everyone commented on my statements, mostly ridiculing them, the authoritative gentleman was silent and pensive. Then he asked me:

"Has anyone estimated the probability that we live in a simulation? "

"The numbers vary widely, from zero to almost 100 percent. If you ask my opinion, I should say that there are many indications that we are actually part of a simulation. "

"Come on!" many said in chorus. "And what would be such indications? "

"For example, logical paradoxes. If I say: "I lie," you cannot know if I lie or not because if I lie in saying that I lie ..."

"That's enough, we know. "

"Okay, you know, but the paradox could indicate that our brain is so designed that it cannot solve it, either because that was the wish of the designer, or by mistake, or because of some higher-order impossibility."

"Fine – so to speak," said the authoritative gentleman. "Let's forget the logical paradoxes. Are there any physical reasons to believe the simulation hypothesis?"

"There are those too. For example, if we analyze a video game in detail, however perfect it may be, we see that the surface is divided into pixels. The colors are not continuous. Well, our universe also appears to be

granular, made up of minimal cells, as if it were a very high-quality video game. The Planck constant enters the dimensions of the cells. If Planck's constant were zero...."

"Who cares about Planck's constant! " A red-faced uniformed man shouted. The red-faced characters were beginning to be too many for me to feel comfortable.

"However," I replied, "I wouldn't take it too lightly. Planck's constant is also included in the uncertainty principle and in the energy value of a photon. If its value were zero, we would have a perfect display, but we would have to revise the concept of a photon."

"You have no idea," a plainclothes gentleman sarcastically told me, "how much the existential problems of photons afflicts me!"

I gave up on Planck's constant: "Okay, the speed of light has a finite value. If it were infinite ..."

"And who cares about the speed of light! "

"All the principles and constants of physics, such as the constant of the fine structure, which we accept simply because they are given to us, without any explanation, could indicate..."

"But that's all bullshit!" someone shouted.

"Not so much, " I replied, wishing for once to complete my answer. "Many scientists have considered the so-called *anthropic hypothesis*. At least they are fascinated by the fact that several of the universal constants have values, which cannot be explained, but appear to be calculated with the purpose of making possible the development of intelligent human beings on Earth. If the two players are interested in playing using as a planet an Earth-like planet, and as Sims people like us, they probably can adjust the parameters of the Super Play Station to make a universe suitable for us, and a universe suitable for intelligent beings must have precisely those values of the constants, default values, that leave us so perplexed. It would be a universe made for us, as the supporters of the anthropic hypothesis say.

"We are not supporters of the anthropic hypothesis!" was the almost unanimous yell.

I was undaunted and went on: "However, if what I say is correct, the seemingly arbitrary constants would make sense. Other constants would give different universes, or, I think, in most cases, impossible universes. In the final analysis, *we are the ones who determine the constants*, in the sense that the two players, if they want to play with Sims

like us, must use the physical constants that allow us to exist, and not others."

"This is what you think!" some yelled. But many people kept silent.

Evidently, the authoritative gentleman was developing the conviction that controversies were now only a waste of time. Thus, he decided to put an end to the meeting: "Sorry, gentlemen, but Dr. Palfrey's opinions seem to me to carry some weight. Unfortunately, if, as I fear, Dr. Palfrey is right, we can do absolutely nothing. We can only wait for the end of the experiment and hope for the best.

There are two cases:

If we *do* live in a simulation and the Super Simulator, as it seems, failed to avoid running the program WHOLE-EARTH, built by us, who are part of its simulation, the universe is about to end. We cannot prevent its end any more than a token of Monopoly can prevent the end of a game, independently of its user.

Or we *don't* live in a simulation, and the universe will continue to exist as it is now. All the memories of all the computers on Earth may be overflowed, but, with difficulty, the accident can and must be resolved.

Meanwhile, assuming he is responsible, which no one seems to doubt, we should ask young Eddie to stop his

game as soon as possible, and - but it seems too much to hope - put things back as they were before."

"For Eddie, it's easy to do," I said. "Please give me a ride home. I will bring him here."

The C.I.A. rep whispered to his attendant: "We should get hold of that kid."

"Please, let's think of it when the game is over."

"Don't tell me that you really believe that the world is going to end now!"

"Well,..." the assistant said.

FOLLOW-UP AND END OF THE HISTORY OF THE FILM "RENDEZVOUS IN CADESIA" (II)

November 19th

As a strong wind had been blowing from north to south since early in the morning, it was decided, for the "day of

the whirlwind," to deploy the Persians facing north and the Arabs in favor of the wind. There were also giant fans for close-up shots. So, the armies are deployed, and the assistant directors start shooting the first shots. There and then everything seems to be okay. But suddenly, the wind begins blowing from South to North. A violent sandstorm falls on the shooting location and sends everything topsy-turvy. The wind is composed of a thousand whirling eddies, which also spoil close-up shots because the trouble is that the whirlwind seems set with perverse determination to make things go in favor of the Persians. The camels flee between the Arabs' ranks screaming "Moho, moho" and wreaking further havoc. The extras think they have misunderstood who must win and who must lose, and, adding some professional pride, the Persians irresistibly break into the Arabs' ranks. The Arabs, partly run away, partly try to stop the fake Persians, now unleashed, by hook or by crook. The Persians, annoyed, begin to beat them with the scimitars handles, which fortunately are fake. In short, the battle of Cadesia Two ends with a bloodless general beating, right in front of the cameras, which take the scene of the complete defeat of the Arab army. And finally, from the mouths of the Persian extras comes the cry of triumph: "We won ". Then, they stand there looking at each other with their mouths open. Many laugh happily, as after a

good prank, not wondering for the moment if the producers will pay them for the mess they made.

FOLLOW-UP AND END OF JIM'S STORY (V)

Eddie at the Pentagon

"No need to go get Eddie," said a guy who wore the uniform of city police, with I do not know how many stars on his shoulder loop. "We picked him up right after you, and he's already here. "

"What?! "I was outraged. "Why didn't you let him come with me? Does any of you have any idea how to treat an autistic child? Do you realize that you have created havoc in his world by waking him up out of time and taking him among strangers? Who is the idiot who directed this operation? "

"The idiot would be me," the uniformed gentleman said sourly. "And you must respect the uniform I am wearing."

"Of course I respect the uniform because I'm sure that, left to itself, instead of being worn by a ... a (I stopped

in time,) it would have acted with better sense. If you do me the favor of going into the next room and getting in plain clothes, I can tell you what I think about the current content of the uniform, if you are interested."

Despite the concern now spreading through the meeting room, there was a general, if somewhat tense, laughter.

When we had all calmed down a little, I said:

"I guess Eddie put up some resistance."

"To say the least," replied the uniformed gentleman, who had laughed too, but was still sulking at me. "And he made screams that woke up the whole neighborhood. He kicked all over, bit, scratched his face.... We had to give him a sedative. I think he should be waking up now."

"What about his parents? "

"We preferred to leave them at their home, adequately supervised. They would only cause further problems."

"Away from Eddie? Better and better. They are the only two people who can calm him down, and you prefer to give him injections? If we don't want to lose him, bring me to him right away," I said. "And give me a computer connected with maximum reliability to the Internet."

I would probably have ended up on the spot in some maximum-security prison, in a bright orange jumpsuit, had I not been considered indispensable at that moment. Instead, a marine immediately escorted me to a small infirmary. Eddie was sitting on a cot under the cold eye of a nurse who must have been a former hammer throw athlete. The poor thing, rocking himself back and forth, a sure sign of how agitated he was, was rubbing his arm, where evidently the nurse had given him an injection to wake him up. I presume that she did it with the grace with which some veterinarians pull the claws from kittens when the owners who love their puppies so much are not present. I wondered if of the many ways of administering a drug, it was really necessary to use the most antiquated and painful one on a child.

"Hi, Eddie, my friend."

"Mom," Eddie said in a colorless voice.

"Eddie, it's me, Jim, your friend."

"Daddy," Eddie said. He didn't even look at me. He knew very well that not recognizing me was a punishment that hurt me deeply. Somehow he felt that, if he was in that condition, the fault was mine.

"Talk to your friend!" The nurse screamed. "And stop playing the crybaby, or you get a slap."

"Eddie is an autistic child," I explained to the nurse. "Please don't be mean to him. You won't get anything out of him with your ways. "

Eddie stared at the floor. Then he said, in a colorless voice but without whining, "Poor Eddie."

That bitch didn't hold on anymore, and she slapped him. "Here it serves you. Now, at least, you are right to say it."

Instantly I slapped her with all I had got. She fell to the ground half stunned and began screaming at me with threats, insults, profanities. I turned to the marine who was escorting me and said coldly: "The lady is having hysterics. Take her, please, to another infirmary and make sure that they administer her a sedative." The marine complied, with a grin. Evidently, he didn't like seeing children beaten either. Now Eddie and I were alone. I didn't see any cameras, but the mirrors in the room told me that we were closely guarded.

"Eddie," I told him. "Jim needs you."
Many autistic children, by some unknown circuit of their mind, are naturally willing to help others. It must be one

of the most fundamental instincts of the species, which, unfortunately, most of us forget in a few years. My plea was successful.

He repeated, "Poor Eddie." But this time, he gave me a sidelong glance.

"Poor Jim," I said.

Eddie stood up, walked over to me, and hugged me, though he didn't look at me in the eyes. It was clear to him that, if I complained, somebody should console me, even if I didn't deserve it. And he was using the only method he knew to console anyone.

"Poor Jim," he said.

"Eddie, I brought you a computer. Would you please finish your game? "

Eddie nodded yes with his head.

"Can you put things back as they were? "

"I believe so. "

He sat down. He moved his little fingers with incredible speed. Then he announced.

"Done."

"Did you restore everything as it was before?"

"I'm not sure. But nothing is broken. "

"Hopefully," I said, thinking about the damages the SFA would have to pay if Eddie hadn't got everything right. It was almost to be hoped that the game and therefore the universe would end, after which, I reckoned, no one would talk about damages anymore.

A marine came to pick us up and escorted us to the meeting room, where the news that the program stopped had already arrived. Cell phones signaled their presence in their own way. They were ringing, playing tunes, meowing, bellowing, in short, they made all the possible noises, all at the same time. From all over the world, confirmations of success were raining on us. It also seemed that the computers were resetting and resuming the tasks they were performing before the incident. Eddie was falling asleep and kept telling me he just wanted to go home.

While everybody was in high spirits, and glasses of champagne had appeared from nowhere, the

authoritative gentleman approached me and said: "But you don't celebrate. Why?"

"I see I can talk to you, "I told him. "And cannot even be silent! I do not celebrate because I think that the Super Simulator, as it is running a simulation of the "WHOLE-EARTH," is infected by the virus. Most probably, our role as Sims is over. If we still exist, this may be good news, that is, we are not a part of a simulation, or the simulation of our universe is destined to last a very long time. But the present pause in time may also mean that the Super Simulator is so powerful that the task of building all chains of millions of millions of millions (please stop me when you have enough) of numbers to cause its own crash takes time. Of course, the player who is cheating, if it existed, knows how to end the game, maybe tampering with the Super Play Station."

"Without technicalities, in your opinion, what is the chance that, if we are in a simulation, the Super Simulator has fallen into the trap set by the WHOLE-EARTH program and will inevitably overflow?"

"In my opinion, chances are high. You see, if you want to simulate, for example, a precise tree, you still can do it in many ways. You can change the number of pixels or the way you create the same colors. You get identical trees. But with simple arithmetical operations, your options are

reduced. For example, if you want to simulate the sum $1+1$, the only reasonable way is to do the sum itself. The simulation of a simple arithmetic operation and the operation itself coincide. The core of the WHOLE-EARTH program is based on very simple arithmetic operations and probably coincides with its simulation. In that case, it has become a program the Simulator must run to the bitter end."

"I understand," said the gentleman. "Let's hope," he added.

"Still, we also have another hope if we are living in a sort of a simulation game. If the game is saved in some memory, maybe it could be resumed by the same or other players in one million years. As we would not realize the end of the universe, we would also not realize that the universe has restarted everywhere precisely how it is now.

Maybe it already happened. Maybe it happened many times."

"Good grief! Now you lost me. Still, I repeat, let's hope".

Eddie returns home.

Eddie was fast asleep, and I had to carry him to the car. Sure he was heavy! But in his sleep, he was more affectionate, and he clung to me, like any child dreaming in his sleep.

The big SUV took us to my house.

Eddie stretched himself, stood up, looked around slowly, and said, with evident relief, "Eddie comes home." Then he took out of his pocket a red envelope, not sealed, containing a yellow piece of paper on which he had laboriously written a few words, and handed it over to me, saying: "You read afterward. "

Then he started toward his home. But something strange happened in the time it took to cross the street: Eddie abandoned his wobbly and uncertain gait, stood up straight, while turning into a wonderful vision, of a sweet, bright eyed young girl dressed in a white robe. I also got the impression that her limbs were luminous, but maybe it was just a curious effect of the sunlight at dawn.

Meanwhile, Eddie's house was silently dissolving before our eyes. Now only the door remained.

The young girl made of light got to the door and turned around one last time, looking at me wistfully, with an affectionate gaze. She entered, the door closed, and disappeared with her.

Eddie had finally gone home.

The house opposite mine was gone; there was only a lot for sale covered with the weeds of several years. Two marines, the ones left to watch over Eddie's parents, lay deep asleep in the grass.

The marine who was with me asked: "Sir, should we wake them up?"

"Let them sleep," I replied.

Then, half numb, I reached for Eddie's envelope in my pocket. On the yellow piece of paper one could read:

I LOVE YOU.
I'M SORRY
I'M SORRY
I'M SORRY.
PLEASE FORGIVE ME,
EDDIE.

I understood. I turned to the marine that had brought me home in SUV and said: "Be brave. It's all over."

"Yes sir!" he replied, not understanding exactly my recommendation.

FOLLOW-UP AND END OF AGATONE ORMUZZI'S STORY (III)

"What the hell have you done ?!" yells at me Angrimani, who, with a little delay, begins to suspect something.

"Nothing," I say. "Except that I won the rematch of the battle of Cadesia."

"Rematch my foot!" he says. "The battle we fought just now is nothing but a 3D movie, and it doesn't matter."

"What do you mean, it doesn't matter? A 3D movie is a simulation, albeit much rougher than that of our Super Play Station, but both are simulations. Don't you understand? Indeed, I would say that a simulation organized with modest means by the Sims is worth twice as much as an automatic simulation like ours".

"Simulation," he said in a choked voice, "implies that you don't know a priori how it will end."

"Are you telling me that the battle took place exactly as the script planned it?"

"But that battle has no consequences! It can't have any!" he screams.

"Do you see that you always forget the rules of the game?" I tell him. "Here you have it, rule fourteenth: it cannot be declared that an event has no consequences if it is physically impossible to verify it. As if to say that when in doubt, you accept it. "

"But we can verify immediately," says Angrimani furiously. "The movie director will certainly have the shooting of the scene repeated in the right way, and of this incident, of this stupid prank of yours, there will remain absolutely nothing, only a few CD. I pledge to destroy them in person in the famous fire of the M.C.F. studios that will take place in a month."

"Are you sure?" I ask him with the sarcastic smile that I keep in store for similar occasions.

"What do you mean?" he begins to worry seriously.

"I mean that I *go out*, like in the game of Rummy" I say.

"And how?" he asks.

"Are you forgetting Eddie, the *programmer* suffering from the *Asperger* syndrome?" I insinuate, showing him the data that confirm my victory.

"Eddie, the **** affected by the syndrome of ****!" roars Angrimani. You used him because you knew I couldn't consider him! "

"For your consolation, I will tell you that Eddie is the best of my Fravashi. I gave her that identification because, thus, you had to ignore her. To complete the story, I will tell you that to another of the Fravashi, I gave the task of taking care of the whirlwind on the day of the storm, and to a third one, I entrusted our Play Station with the function of *programmer*. You didn't have a chance, my dear Angri. "

As he gasps, I show him that the Super Play Station has overflowed and has assigned the victory to the White, that is to the Good, in other words to me, by "going out," like in Rummy. It then reset to the date of October 636 AD, which appears on the screen.

Angrimani tells me: "Don't you have any compassion for ten billion sentient Sims?"

"What are you suggesting? That I give you the victory out of compassion? All my Fravashi recommend the

same, but they always do, so they don't count. Do you want me, as the winner, to recommend placing this match in the "Immortal Matches" archive? But do you realize that if someone consulted the archive and decided to resume playing our game from the date of today (terrestrial time), Black would win immediately, by destroying the records of the battle of Cadesia Two?"

"OK, victory is yours. Still, remember, White is the Good."

"But dear, the match we just played doesn't deserve to be kept among the 'Immortal Matches', because it sucks. All the Sims you worry about are sentient in name only. They have almost finished destroying their planet. Even better, they have divided into two groups: the few *haves*, and the many *have-nots*. Through a nearly incredible bound back in culture, the few *haves* have only ideals of animal pleasures, and obtain them by exploiting billions of *have-nots*, weak and unhappy, who have the same ideals, but cannot satisfy them. By closing the game, I would do them a favor. Besides, I don't give a damn for the rich and powerful. Don't pretend that you don't know that many among the rich are spreading the cult of Satan, which, in this game, you are representing. Do you take me for a fool? Please don't talk to me about this match anymore, and let's hope that the Fravashi will stop

bothering me too. You have no idea how persistent they are."

Meanwhile, I show him the play station display where the announcement appears that, if we want, we can start a new game from 636 AD, possibly fighting the battle of Cadesia a third time. Or we can play a new match starting all over.

Angrimani looks at me with the gaze of a faithful dog to which a suppository has been placed and mumbles:
"Okay, forget it. Frankly, I've had enough of Cadesia. We will play another match tomorrow, but we will start from the beginning."

THE END OF THE STORY

Now that the game was over, there was no longer a need for lights to illuminate the game table. By mutual agreement, Ormuzzi and Angrimani¹¹ turned them off, and the room remained dark. It was sunny outside.

¹¹ Evidently Ormuzzi is Ahura Mazda (also Hormuz), the deity of Good; Angrimani is Angra Manyu, the evil deity of Zoroastrianism. For the sake of completeness, I add that the 19th of each month was sacred to the Fravashi, feminine divinities, somewhat similar to guardian angels.

They headed for their respective homes. And Angrimani was already studying in his mind the moves that the next day would hopefully give him the victory, perhaps playing the White.



BRIEF EXPLANATORY SUMMARY,

which follows the requests for explanations that some friends made to me.

The main story takes place outside of our universe, where space and time are not the same concepts as in our universe. However, the projection of the story on the Earth takes place around 2070-2072.

We, the humans, are nothing more than the sentient sims of a video game, which two players of a superhuman world play on a PlayStation. In that world, one may presume that there are billions of PlayStations, like on Earth. Such PlayStations, however, are not limited to simulating a football match but create entire virtual universes. One must simply change the constants and principles of physics: Planck's constant, the speed of light, the fine structure's constant, the various conservation principles, and others, to obtain very different, or even impossible, universes. All simulations are just games, and the PlayStations just toys.

Ormuzzi and Angrimani (two players from that world, which in the story is described by analogy) assume White

and Black colors, respectively (the next day they may exchange them, like two chess players). They accept the default parameters the PlayStation recommends and focus (among billions of planets) on our Earth. They create, always battling with each other, our history, as it has been from the appearance of life to today. In principle, they will continue the play to the end of the world.

Due to an oversight by Ormuzzi (the White), the Arabs win at Cadesia against the Persians, with a whole series of consequences, which are still affecting us, and put White in serious difficulty.

The struggle of Black and White recalls the battle of Good and Evil, which is characteristic of the religion of Zoroaster.

Ormuzzi ponders the rescue. He sees that the key to success is that the Persians win a re-match in Cadesia. To do this, since the battle of 636 AD was a simulation of his PlayStation, he arranges that a film representing the battle of Cadesia be shot in Cadesia, and, because of a series of mistakes, misunderstandings, and fortuitous coincidences, the Persians win. After all, the film is also a

simulation, even if made by us sims with modest means. However, to succeed, immediately after shooting the wrong scenes, which give the Persians victory, he must "go out", like in Rummy's card game. Only in such a way, the mistakes cannot be corrected. By "going out," like in the game of Rummy, he wins. Obviously, he cannot make his preparations, bordering on cheating, openly. However, he has the Jokers, the Fravashi (female semi-deities of the Avestic religion, always associated with the White.) One of them appears on Earth as Eddie, an autistic and therefore unpredictable child. Eddie is an Asperger of the highest level and sets to himself the task of assembling the Mega-computer, which makes "zombies" of all other computers on Earth. Therefore, he creates a program that, via the internet, overflows all computers on Earth and turns them into "zombies." He succeeds. But, unbeknownst to him (or maybe not), the super-PlayStation that simulates our universe necessarily runs the same program because it simulates it. Thus, the PlayStation will go into overflow.

The simulation will end, and our universe will vanish in the blink of an eye, as when we turn off our modest PlayStations, giving the victory to the player who is ahead at the time of the crash. In the meantime, Ormuzzi's Persians win the mock battle; he "goes out"

because the PlayStation crashes and resets, and White wins the game at the last minute.

I leave out the details.