

# TEN TALES ON SYNTHETIC BIOLOGY

A NEGATIVE VISION

Valencia Biocampus iGEM 2013



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# TEN TALES ON SYNTHETIC BIOLOGY

Valencia Biocampus team attending the 2013 iGEM competition  
Universitat de València



For more than twelve years, Kathy Jo Wetter has conducted research for [ETC Group](#) on emerging technologies and the impact of corporate power. She works in Durham, NC, USA and holds a PhD from the University of North Carolina at Chapel Hill.

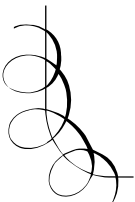
Yesterday, I was in New York at a United Nations (UN) meeting about “Sustainable Development Goals,” an idea that had come out of another UN meeting, in Rio de Janeiro in June 2012. The official outcome of the Rio meeting – endorsed by 193 UN Member States – was a document called “The Future We Want.” In that document, technology plays a prominent role in bringing about a brighter future marked by a healthier, “greener” and more equitable world. Half the scenarios in this book also describe a future we want – with synthetic biology helping to cure disease, clean the environment and provide sustainable energy. The other half reflect a dystopic future where synthetic biology fails to produce the future we want due to corporate greed, bioterror or “bio-error” (unintended effects).

My organization, ETC Group, is not opposed to new technologies, but we are concerned that policymakers turn to technological fixes for every social problem. Still more importantly, any major new technology introduced into a society that is not a genuinely just society will exacerbate the gap between the wealthy and the marginalized. New technologies can be profoundly disruptive and that disruption can advantage the rich and devastate the poor unless they are prepared. A heavily funded (and hyped) area of synthetic biology research, for example, is putting together synthetic genetic “parts” to create novel microorganisms that function as so-called biological factories that directly produce high-value commodities. The goal is to replace natural commodities – such as fragrances and flavours – with synthetic biology-based “equivalents.” What happens to the 200,000 vanilla producers in Madagascar, Reunion and Comoros, for example, if the bottom falls out of the vanilla market when a synthetic biology-enabled substitute is commercialized?

An emphasis on the positive potential of a new technology like synthetic biology requires a concomitant emphasis on a strengthened global, regional and national capacity to assess its diverse potential impacts before it comes to market – including social, economic, environmental and health impacts. That’s the only chance for synthetic biology to make a contribution to a (sustainable) future we all want.

Kathy Jo Wetter

23 September 2013



# THE ATINTANS

ORIGINAL IDEA *Alba Iglesias*

U

ndag always wanted to belong to the hunters' group of his village and that day was the final test in which his labor was going to be decided. If he passed that test, he would be the youngest hunter in the history of the 'Atintans', an unknown tribe in the Brazilian side of the Amazon.

His master was simply known by the nickname 'The Ancient Man' and nobody knew his real name because he never talked. The old man communicated by signs, something that made the learning more difficult but was helpful for the hunting process because he never made a sound. When Undag finished his training, which lasted several rain periods, 'The Ancient Man' smiled at him and let him know that he was already prepared. And that is why he was there today.

The challenge was simple: he had to bring a piece of meat big enough to feed all his tribe for three days. If he did it, he would get a necklace according to his level. That position would also give him some privileges like marrying Sare, the healer's daughter, with whom he had already been exchanging smiles. They talked a lot, so Undag knew the girl had been working as a harvester. This meant she was in charge of growing and harvesting all the products from the gardens and trees in the village.

Hunting alone could last from less than a day to two or three complete ones. If he made it in little time it would mean he was more qualified for the position and everybody would be even prouder of him. It was the most important moment in his life; Undag was face to face with the dense jungle and with more than half of the village at his back, included beautiful Sare. When he took the first step with his spear, a small stick with a sharp stone tied, the entire village started to yell his name to encourage him.

He felt confident inside the jungle; he had been preparing himself for a long time analyzing 'The Ancient's Man' movements and trying to mimic them. Thanks to him, Undag learned how to walk over the dead leaves without making them rustle, how to listen to the silence and notice all the small disturbances to appreciate the prey's direction. He also learned how to discriminate an old trail from a fresh one.

And there it was, like a present: a broken branch, that by the color of its leaves and the amount of sap it had, he could deduce that it had not been long since an animal had gone by. The height of where the branch was broken indicated it was a large and stocky animal, probably a wild boar. It was his lucky day, thought Undag.

He followed the footprints he found once in a while and the crooked branches that formed the animal's trail. If he finally got that prey, Sare's family could not be against their marriage. He tried to stop thinking about her because a hunter must

clear his mind and be focused on his objective; he had to visualize his prey and take into account all the possible variations and conditions he could come across. For example, it was not the same situation if the wild boar was calmly drinking than if it was running away from a jaguar. Although, truth be told, if it was a jaguar he would be the one in trouble.



Yandú, the village's shaman stood there with his daughter, Sare, by his side. He was an attentive man and he had noticed she really liked the hunter who was taking the test that day. That is why he had prayed to all the gods the night before asking them to accompany the boy in his first hunt, wishing him luck and success.

The truth is that the dreams he had been having the nights before were not very positive with the boy's return. They were dark dreams where bloody red and ebony black blended together in spirals. He could see people that were not from the tribe with a brilliant aura that, after shining, turned sinister. He did not know how to interpret these dreams but one thing he had clear: Undag was going to have problems during his first hunt.

The shaman was incapable of telling his daughter about it; she seemed so happy and excited with the idea of the boy's victorious return that he was unable to destroy her innocence. In addition, similar dreams had been going on for several days and



none of them seemed to come true at the moment. One night he dreamt that their river did not have any fish and in another dream he saw their plants with their leaves stiff as stones. They were all ambiguous dreams that probably did not mean anything; that is why he still had hopes that Undag would return sound and safe so he could become a new family member.



The young disciple of 'The Ancient Man' followed the trail closer and closer and he could already feel in the air that the wild boar was in a more adjusted radius. He kept on moving silently until he saw it in the middle of the jungle. There was the wild boar he had been following. It smelled all around without even noticing that a hunter, craving for success, watched him from the brush.

First he tightened his whole body so that the spear became a natural extension of his arm. Second, he put his arm back to get the maximum power but without forgetting about the delicate balance between tension and aim. Third and last, he threw his weapon against the animal with a fast movement.

Without noticing it, the weapon had gone through the animal. The death was fast and painless, leaving the animal lying on his right side waiting for the hunter to pick it up. Undag got closer as he took his silex knife and a couple of strings from his loincloth. He tied the wild boar to the stick of his weapon and carried it on his shoulders. It weighed more than he had expected, but instead of discouraging him, it gave him even more energy. He had accomplished the mission, and not only that; he had made it in less than it had ever been done before.

While he went back to the village, Undag heard a loud noise coming from his left. It sounded like a whole group of wild boars walking together... it was even louder. He got closer out of curiosity. If he took one prey it was enough, but if he managed to get two or even three, he would become the best hunter of the Atintans.

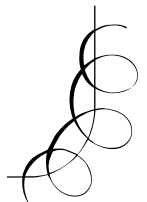
What he saw when he finally got closer left him speechless: it was a group of people, with light skin, completely dressed and with huge bags that were not made of familiar material. Undag was so shocked he did not have time to react and could not avoid being seen; the mysterious group of people got closer to Undag.

They tried to talk with him using very strange terms like 'search' and 'help'. He did not understand anything they were saying and he started to feel uncomfortable when they smiled without him knowing what they were smiling about.

The young Atintan did not know how to act because he had not heard of anything like that before. Nobody foreign to their village had ever gotten so close to them, and much less, people with a different skin color. Nevertheless, he thought that the decision of what to do with these people should be taken by somebody with a higher position in his tribe. He pointed with his hand the correct direction to the village and the light-skinned people quickly understood him and started walking by his side.



Yandú watched with astonishment how young Undag arrived from the jungle with a gigantic wild boar on his shoulders. He had achieved it and in an incredibly





short time. He was glad his dreams were a simple old man's nightmares. He smiled when he saw his daughter, Sare, running to the boy's arms making the huge animal fall on the ground picking up dirt.

–I made it, Sare. – said Undag in the Atintan language. –I also found something else.

Sare was astonished at how four people with light skin and very big bags came out from the jungle. She was scared. She turned around looking for her father and when he saw the foreign people, he gave the alarm so that in less than a blink of an eye all the Atintan hunters were pointing at the outsiders with their spears and arrows.

Everyone in the village started to gather around the hunters and when the light-skinned people started talking in a language they did not understand, they were shocked. They said strange words; for example terms like 'bacteria', 'plant', 'transgenic', 'enrich' and 'present' were the ones they repeated the most while the foreigners feared for their lives.

The misunderstanding finished when the strangers got down on their knees and showed over their heads a small transparent box that contained seeds from some kind of plant. When he saw their offerings, Yandú ordered everyone to put down their weapons; they must not disregard someone's present because it was a sign of good intentions. Sare was the closest to the new visitors so she was the one who took the small box with seeds in it. At first she was scared of the unknown, but in a second she forgot about the danger when she recognized the seeds. They all belonged to healing and fruit plants. There was chuchuhuasi to cure colds and fevers, sacha, which was useful against snakebites and seeds from *purpura bacca* and chestnuts. The thing Sare was most fascinated by were some seeds she had never seen before and she was eager to know what grew from them.

Undag was the one who received, from another light-skinned man, a small, round type of stone full with something similar to bone marrow from the animals he hunted. According to the man who gave it to him, it was known as 'bacteria'.

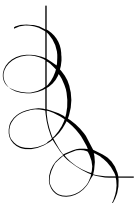
The last surprise of the encounter was that one of the four men knew how to speak Atintan. There were some words he did not use correctly and other ones that he did not say right but despite that, the village could understand his message perfectly. That man must have been shy because he did not talk before when they were about to die.

–Hello, my name is Benjamin but you can call me Ben. We bring gifts to you. We have arrived to give you plants and better soil to grow your food. –At that point the entire village was paying attention to Ben, the light-skinned man who knew how to speak their language. –If you use these, your gardens will never die and insects will never eat their leaves.

When they heard this, the villagers were not happy and did not understand why those strangers brought them presents. They did not trust foreigners they did not know. However, Sare was more optimistic and knew that their biggest problem was when they did not have any food because of climate changes and insects that destroyed their plants. She tried to convince her village and make them understand that if the light-skinned people would have wanted to harm them, they would have already been dead. Because Sare was the most experienced harvester, the tribe decided to believe in her.

–Great! –said Sare finally.

–The 'bacteria' will assure that nothing else grows except your desired plants.



–The young harvester understood that what Ben wanted to say was that weeds and undesired plants would not grow in their gardens.

The entire village was finally convinced and happy with what the strangers had brought. Now, the harvesters could work more efficiently and avoid problems that damaged their harvest.



Ben and his friends were the ones in charge of planting the new seeds and distributing the ‘bacteria’. What Sare understood was that, the ‘bacteria’ would eliminate everything harmful from the soil and would add what the plants needed to grow strong and without problems.

Sare soon noticed that she had a lot of free time; the birds did not eat the recently planted seeds so she did not have to look after them all the time. Besides, the plants grew extremely fast, something Sare appreciated because she hated to wait for the first sprouts to show. Thanks to all the hours she did not have to waste taking care of the gardens, she could spend more time with Undag. Her father had approved of their relationship and they would soon try to have a baby. That way Sare would feel fulfilled: mother and harvester; she would be an excellent part of their tribe.

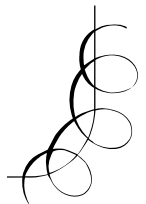
However, something bothered the girl. Her future marriage with the man who would probably become the best hunter of the tribe did not seem to make her father proud. The spiritual adviser had spent days wandering through the village with a dark and tired look, dragging his feet, apparently depressed. Not even the uchu sanango, a natural plant, made him cheer up and a rumor was starting to spread in the village. Some people said he had started to use ‘toe’, a powerful hallucinogenic plant that had been prohibited a long time ago because it made the ancient shamans lose their mind. What Sare thought was that her father was trying to understand the dreams he had been having.

One night before going to bed, the girl went to visit her father to try and cheer him up by explaining how the Atintan gardens were growing faster than ever and without worrying about the floods and winds because they could resist almost everything. As she spoke with her father, she assumed the rumors were true because he could not speak correctly. However, he excessively repeated the same word: catastrophe.

Undag went hunting almost every day because he was in charge of obtaining enough food so that the visitors were always happy and taken care of. That day he had a special order: besides hunting, Sare had asked for guayusa leaves, a very energetic plant to cheer Yandú up. She had explained to him what the plant looked like so he could identify it perfectly.

He had no problems finding the plant; it was all over the jungle and he found some next to the wild boar he had just hunted. He took some leaves and tied them to his loincloth to take them back. When he got to the village he gave the prey to ‘The Ancient Man’, so it could be cooked correctly. Afterwards, he went to talk with Sare.

The girl was discussing with Ben about all the time they saved with the new seeds they gave them and how weeds did not damage their gardens anymore. Undag greeted the light-skinned man by tilting his head and tried to give Sare the leaves she had asked for, but they never got to her hands. Ben ripped the leaves out of Undag’s



hands and saved them in one of his gigantic bags while he said things the natives did not understand like ‘wrong’ and ‘experiment’.



In less than the half of the usual time, the Atintans’ gardens were completely grown and ready to harvest. Insects did not even go near the plants, avoiding any damage, and other dangerous ones simply disappeared so they did not even bite the habitants avoiding all kinds of illnesses. There were many types of plants but the most interesting ones were the fruit ones. Sare knew most of them, but there were others that she had never seen before. Ben explained that they were called oranges, apples and cherries. When they collected enough for the entire village, they ate them together one night and everyone seemed to love them.

Everyone tasted the new fruits except Ben and his colleagues. They had been there for a long time and they usually tried to help and collaborate with the tribe, but when it came to the food, they only liked eating the meat the hunters brought and never tried the products from the seeds they had brought.

Time went by and the plants that gave them the food they ate grew without problems. Undag and Sare got married with the blessing of her father and the whole village was happy. The couple’s role in the tribe was crucial: she would end up being in charge of all the harvesters and he would be master of all the hunters when ‘The Ancient Man’ passed away.

Once the plants that the light-skinned people called ‘transgenic’ had already stabilized and made the Atintans’ life easier, Ben and his colleagues went back to their original city and were bid farewell with a big celebration. The entire village wished them the best and told them they were always welcomed to their tribe.

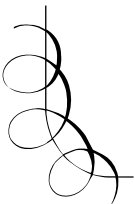
The Atintan tribe had never lived better in all their generations. However, the old shaman and healer of the village, Yandú, continued having horrible nightmares day after day; there was always plenty of blood and suffering.



The main researcher and doctor in Plant Biotechnology, Benjamin Bostrom, arrived with his three fellow scientists from the Institute of Plant Biotechnology and Innovation.

After more than three years working with an unknown tribe from the Amazon, they finally had conclusive results about the benefits of their new plants and synthetic bacteria. They were a complete success: the time they needed to grow was reduced to the minimum, insects did not attack them and climatological factors did not disturb the crops. In addition, the soil-enriching bacteria showed, in diverse quality analysis of the ground, that they improved the nutrient composition and served as a weed-killer. Besides, as they expected, the people who consumed those products had no negative effects as they could confirm from the sequenciation of the natives’ fecal samples that the scientists secretly collected.

When they had to show their results, they would say that the final study had been done with 571 individuals of all ages, but they would omit the information that they



actually used the Atintan tribe. They could have avoided going to the Amazon if those damn ecologists against transgenic food would not have sabotaged all their commercialization campaigns.

Even though animal tests gave positive results, the ecologist and anti-transgenic activists defended that nobody could ever know how modified and almost synthetic plants could affect the population on a long term basis because laboratory animals did not live long enough to study it.

The groups against genetically modified organisms launched exhaustive campaigns based on lies and fallacies to avoid the commercialization of the products. These, unfortunately, worked and nobody wanted to try the new and efficient products.

Due to all these problems, Ben and his colleagues had to look for a large group of people who had never heard about the “danger” of their plants and they had the great idea of proving their point with entire tribes disconnected from the developed world. The data was reliable and positive and besides, important mathematicians developed extrapolations to study how the products could have some affect during the next 100 years and showed no differences between the people who had tried them and people who had not. The fact that all the samples came from the same place did not matter either because thanks to advanced modeling they could conclude that there were no differences between the small tribe and the rest of the population.

Thanks to the study’s consistency and the economic support from the most powerful companies that were especially interested in their products, the *superplants* started to be commercialized after difficult debates and legal issues. Once on the market, everything continued without problems and all of the gossipy mouths of the ecologists were silenced. People all around the world consumed their products, underdeveloped countries did not suffer from hunger and the team that created the superplants started to earn great amounts of money. Doctor Benjamin felt that his life dedicated to science had finally served a purpose.

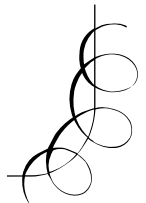


Thirteen years after the light-skinned people had visited them, not a soul could be heard in the Atintan village. Birds did not sing and animals did not look for food there anymore.

Undag lay next to his wife Sare and his son that had become ten years old not long ago. He woke up with a high fever. The Atintans had been suffering an uncontrolled decay. Before there were almost 600 people in their village and now the population had been reduced to the tenth part. It was all the plants’ fault.

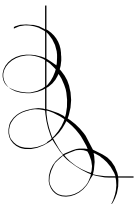
As the years passed by after Ben’s visit, the new plants started to displace the autochthonous flora up to the point the Atintans could only consume transgenic food.

The problem was not that the humans were not prepared; it was that the plants that were so genetically modified lost all genetic control and started to mutate. They changed so fast that they ended up being toxic for the human species and also for most animals because the organism could not tolerate the enormous amount of mutations they ingested.



They should never have fallen for how easy it was to work with the synthetic plants provided to them. They tried to stop eating those plants and started to consume only fish, but it was too late. Once they had eaten those altered plants for so long, their bodies were destined to get sick and finally die. Nobody was ever capable of understanding how those promising plants could do such harm.

Undag and his tribe would have liked to warn Ben that their presents were not as good as they seemed and that they were dangerous to use. But the fact is they never had the chance. The doctor died because of his own creation. No scientist doubted about all the experimental processes and mathematical analysis that had been done and no one could have stopped the powerful scientific companies from commercializing the *superplants*. After all, the whole society trusted science, like the Atintan tribe did. The plants had already finished off with the 90% of the human population ... and continued.





# THE COUNTDOWN

ORIGINAL IDEA *Pedro L. Dorado*

i

It was already 3:00 am. I breathed deeply and made myself aware that finally I was going to do justice. I got out of the car I rented yesterday with a false ID and I kept on walking towards the laboratory where my future victims worked. I had thought, during years, about taking the final step that would finally let me be at peace. It was a hard decision and, once I accepted it as the only possible solution to my problem, I had to work hard so it did not have any gaps.

My method was not going to fail. The synthetic bacteria that I had been creating for over more than 4 years would destroy all form of life that contacted it. I also made sure that it was not just any kind of death; it had to be painful. It was true that collateral damage could occur and innocent people could get hurt, but with them would also die three of the twelve damn scientists that killed the person who I had most loved.

When I entered the building, I immediately recognized it because I had been studying it from the maps I managed to steal in non-orthodox ways and hacking public sources. I avoided the security guards because I entered through a maintenance door and I went up the stairs to get to the third floor where my future crime scene was going to be.

In the bag I carried there was a complete suit from a P4 laboratory; these were used with the most dangerous microorganisms of the world. I put it on and spent a couple of minutes enjoying the sensation of not feeling the exterior. During the four years of laboratory work while I developed the deadly bacteria, I had got used to using similar suits. I even got to the point of loving the fact of being completely isolated and feeling in sync with the silence.

I grabbed the spray charged with my 'synthetic death' and started to sprinkle the whole room. Once I used the whole bottle, I went back where I entered; I got into the car and drove to my small house with my cozy garden in the outskirts of Paris. As soon as I got there, I went upstairs to the main bedroom and lay down to rest without taking my suit off (if I did take it off, I would die and could not finish my work). I was nervous and thrilled; I could not wait for the news to be on the television tomorrow. With that anxious feeling, I fell asleep with my suit as my skin.



Doctor Irza was in her second floor office in the *Institut National de Police Scientifique* of Paris. Not even a year ago, she was promoted to head of department thanks to her perfect criteria when it came to the crime scene analysis and for her innate capacity to deduce the *modus operandi* of the assassin. While she was writing the report about her last solved crime, she received a call from the headquarters; three scientists had appeared dead in a private laboratory of a pharmaceutical company known as *Evopharmatech*.

Thirty minutes were needed for her to get to the crime scene. The television cameras gathered around the main entrance of the building and tried to get some kind of information about what had occurred by yelling at everyone who passed by. Irza passed calmly under the police tape as she showed her identification card to the police that was controlling the access.

She entered the building and was guided to the crime scene. Before going through the last door, one of the detectives at the door warned her that what she was going to see was not going to be nice; she did not seem to care. He also told her that they suspected there was a murderer involved because the building's security system had been cut off between 3:00 and 4:00 in the morning and the three scientists had died at 8:00 am.

She finally got to the crime scene and saw the police agents and the scientific police analyzing the cadavers; she did not really understand why they needed her there with how well the scene was covered. While she thought about it, a young scientist approached her:

–Hello Dr. Dutrillaux. –Irza hated when they called her by her last name because she felt older. – We have called you because we can't understand what the cause of the death is.

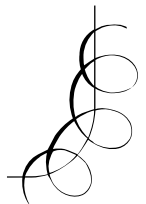
–Well, let's see what we can figure out. – She got closer to the bodies with her tape recorder in hand and started her analysis. – *Evopharmatech* case. Three bodies: two males and one female. They all have the same signs including blisters all over the body, severe inflammation and skin turning violet. Tissues seem to have suffered necro... – Irza took too long to realize it. – Shut the door! Everyone who has entered this room must remain in the building! The cause of the death is a very aggressive microorganism and probably contagious!

Once these words were spilt, panic aroused. People had to stay locked up while a specialized team in microbiologic threats arrived at the building. When they finally got there, they entered the room with their special equipments, took tissue samples of the cadavers and left as soon as possible. Irza knew that until the samples were analysed and they knew what they were working with, they would not be able to leave. They had been stupid, each and every one of them working there; how could it not have occurred to them that it could be an infection being in a laboratory? The mistake committed was ridiculous, but the danger it could be, was not.



At 9:39 a.m. my alarm clock rang; the first thing I wanted to do was watch the news to see my first masterpiece announced. I got out my bed with a smile due to the fact that I still had my suit on. It made me feel comfortable but I could already take it off and this way be able to go and buy the newspaper, go for a walk without raising suspicions, feign a normal life and go to work.

I took my second skin off and went down to the basement to put it away in the closet where I saved other identical ones. I really liked the place; I adapted it





5 years ago so I could start my investigations. I started with little material to later keep on expanding it and end up having a marvellous maximum-security laboratory where I could carry out my plan. Before leaving the laboratory, I took a small leather notebook from my safe; here my darkest ideas were revealed.

After visiting my sacred room, I went upstairs to the kitchen and had some coffee while the news talked about things lacking all type of interest. It all changed when it finally appeared: a news reporter talking about three victims found in a laboratory with the *Evopharmatech* building in the back. My heart beat faster and I only started to smile when I heard their names: Doctors Dietrich, Skinn and Bast. It was them! I knew I would hit my target! I opened the leather notebook, looked for their names and crossed them out.

The adrenaline started to run through my veins making me feel euphoric because I had started my revenge with success. After experimenting that feeling, I knew I wanted to repeat it all the times that were needed.

I kept paying attention to the news and felt even better when I heard that thousands of policemen and scientists were trapped under quarantine afraid that their lives would end like the unfortunate other three scientists. Naive. The bacteria I set free last night would not even exist by now in that place due to one of the modifications I added to the organism. This allowed me to take my security suit off without being infected. Sooner or later they would figure out by themselves that they could not get infected. For me, the day had only started and amongst other things, I had to prepare my second attack.

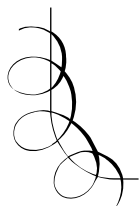
That time I would go for the four founders of *GenAB Biocompany*: Doctors Ving, Almond, Ryzhov and García.



After several hours trapped and isolated, Irza could leave the *Evopharmatech* building. According to the biological control group, the cadavers were absolutely clean; there was no trace of any dangerous microorganism. They also did not find any harmful organisms in the building. The head of the scientific police felt useless when they told her; she had been positive that the signs corresponded to a body infected with *Streptococcus pyogenes*. She had seen some cases like that during her 5 years as a doctor before joining the police force looking for new experiences.

She gave the alarm as precaution but by then she started to doubt if she had been right or not. The necrotizing fasciitis cases did not give such fast and lethal signs. In addition, after the incident she asked the people that worked in the building and they assured that the laboratories were only level 1 of biological risk. This meant they did not work with any dangerous organisms. What she understood was that they only experimented with microorganisms that produced antibiotics; the investigation with dangerous bacteria was done abroad. Everything seemed to point to the fact that the deaths had not been caused by something in those laboratories and therefore the only thing that could make sense was that the three of them had been infected in a different place. However, the fact that all the victims had died at the same time, in the same building, left no place for logic. Someone must have done something between 3:00 and 4:00 in the morning, but it did not make sense that the flesh-eating bacteria had been liberated and was not there anymore.

Irza was a little bit lost with that case because she was not used to crimes that involved microorganisms and for that reason, she decided to widen her point of view: she called the expert in microbiology of her department.



—Good afternoon, Dr. Delacroix. —The expert in microbial pathogenesis, Atlas Delacroix, was the best in his field. He was capable of recognizing any organisms from their signs and knew all about those pathogens. —I guess you have already heard about the *Evopharmatech* incident. We need your help.

—Sure! — Always, since he was hired 5 years ago, he had been an energetic and effusive man. —What do you need to know? It seems to be an accelerated infection and...

—Yes, it's something like that. But this is not a call to solve doubts; I want you to work on this case with me. At least until we know if it's a crime or a laboratory accident.

—All right! I'm on my way!

He did not take too long to get there. Irza was surprised by how extremely happy that man always looked; it seemed as if he never cared. The truth is that she felt pretty attracted to him. He was handsome: green eyes, a bit younger than her and being co-workers gave the situation an attractive risk.

Together, they started to look at all the photographs from the crime scene and went through the timeline of the actions to see if they could finally understand how everything had gone so fast. Atlas had doubts; everything indicated that they were facing a case of necrotizing fasciitis, but all the evidence went in another way: no microorganism had been found, they people who had entered the room did not get sick and everything had occurred in less than 4 hours.

When it got dark, the microbiologist decided to take all the work home and meditate it while sleeping; Irza, on the other hand, stayed, analyzing the pictures time and time again trying to find out what they were missing.



I picked up from the basement another spray filled with *Streptococcus pyogenes*. That night's plan was exactly the same as the one from the night before. At 3:00 am he would enter the *GenAB Biocompany* building and scatter the bacteria with its 'vital clock' in the 4 offices of the company's directors.

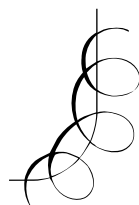
When I arrived, I left the new rented car in one of the security camera's blind spots; I turned on the computer and temporarily disconnected all the security controls the building had.

That day, I would add a new rule to my planning. The day before I made the mistake of entering the building without the security suit and I could have left some kind of evidence or someone could have seen my face. That time, I got dressed before leaving the car; this way I would avoid leaving any trail that could lead to me. I took the spray and went into the building. That time there were no security guards so entering through the back door was easy.

I spread the bacteria in the offices while I thought about how much fun the police officers were having trying to understand how someone could die so fast; it was easy, another modification I added was an accelerated lethal ability.

The 4 years I spent generating that microorganism were not in vain; I managed to create the perfect weapon thanks to Synthetic Biology.

I remembered that 11 years ago my dream was to study something related with Science to help people and all that garbage that everyone usually said. My mind changed its direction when after 3 years the people who I thought were admirable, ended with Eve's life. When I finished my degree with honors, my objective had changed: I went from wanting to help the world, to wanting to finish with the people



that made my sister die and with this, offer society a service by eliminating all toxic scientist that do not have any ethics nor control.



–Atlas? Are you available? –asked Irza.

–Yes! Is there work to do? – His boss nodded.

Those were the first words the scientists exchanged. What Atlas understood while going to *GenAB Biocompany*, was that six bodies had appeared in that building with exactly the same signs as the first three victims. Once again, there was no trace of a microorganism and the security systems had failed from 3:00 to 4:00.

When they arrived to the biotechnological innovation company's building, Irza started to explain her theories to the microbiologist:

–I think we are working against a murderer that follows a very determined pattern. So far, all the victims are scientists that later on became business people with important pharmaceutical companies. My first choice is that we have to consider a criminal that is trying to win a commercial race, or similar, as *leitmotiv*.

–I leave those decisions to you, boss; I can only try to understand how the victims die.

–Call me boss again and I guarantee that you will regret it for the rest of your life. –She hoped she had made things clear; she did not like those types of formalities that made her feel old.

–Slow down! What would you think if I invited you to a coffee when we got off of work? – Irza found the proposition daring but at the same time fun.

–We'll see...– She acted tough but knew she was going to accept.

When they analyzed the crime scene they noticed it was almost identical to the previous one, except that this time the bodies had been found in different offices. This



fact helped Irza realize that the objective was probably only the four company's bosses. The other two people were collateral damage; this thought was strengthened when they discovered that one was a secretary and the other one was a master's student.

–I've been thinking. –Atlas said. –Maybe, the murderer is using *Streptococcus pyogenes* but modified by Synthetic Biology.

–Synthetic Biology? Explain yourself and be convincing. If you are, I'll accept that coffee.

–I think the microorganism could be modified so that it worked like a clock, this would mean that once it had killed its host it would auto destroy itself. This way the murderer would not leave a trace.

Irza looked at him, amazed; it was a risky hypothesis but it explained a lot of things.

–Could it also be possible to kill faster thanks to Synthetic Biology? –she asked Atlas.

–That was the next thing I wanted to talk about. There aren't any previous publications about it; creating a more deadly organism is completely non ethical and only imaginable in a biological war. But yes, toxins could actually be made stronger to cause death in a couple of hours. –Even though it was a delicate subject, Atlas smiled because he knew he had won a coffee.

Irza and Atlas exited the building together. They did not find anything revealing in the crime scene but at least they had their first hypothesis. The press attacked them asking for answers and if there was a criminal involved or a new disease spreading around. To avoid theories that could scare people, Irza explained that they thought they were crimes that had economic interests behind them and that the weapon was a synthetic bacterium with stronger toxins that only killed during its biological clock's 'countdown' before it was auto destroyed. With this, the head of the scientific police intended to relax the media and let the murderer know that they were aware of how he worked, in case the hypothesis was correct).

They had their coffee in a small cafeteria next to the *Louvre* museum. It was a bit more expensive but the views were priceless, something that helped both scientists disconnect easier from work.

–A question. Irza is a really weird name. Where is it from? – Asked Atlas.

–My complete name is Irza Dutrillaux. My mom was from India and my dad was from here. But it's funny you ask me that question. – She really liked being there with him. – What kind of name is Atlas Delacroix?

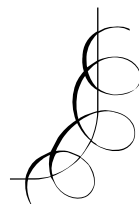
–My mother was a fan of biblical and mythological names... I got the second group and she picked the titan's name.

–Interesting... even curious.

They kept talking almost for an hour and then Atlas took her home like the gentleman he was. Irza felt even more attracted to him but she was not brave enough to make the move. Her plan would be to wait until he invited her again.



I watched the news while I ate supper; I could already cross out the names Ving, Almond, Ryzhov and García from my list. In the report I was watching, they had just given me the nickname 'The Countdown Murderer' because of a more than accurate hypothesis that was formulated by the head of the scientific police, Dr. Irza. They had discovered one of the most important modifications that I added to



the organism: the ‘vital clock’. When the specified time had passed, the bacterium auto-destroyed itself eliminating all traces. This gave me some advantages to use it as a crime weapon because it would be impossible to track and above all, I would not destroy the whole world.

Instead of feeling furious due to the fact that they knew how I worked, I felt euphoric. It was an extra risk that I assumed as a challenge: now I had to be more exact than ever.

That same moment I decided to take another precaution: I disconnected the security systems from Irza’s work place. Maybe visiting Dr. Irza would be necessary.

That night I was going to attack again. The same pattern: it would be from 3 to 4 a.m. with my special suit and I would spray my flesh-eating bacteria all over.

The first stop was a small laboratory in charge of drug development. When I got to the place, I did not have to disconnect their security alarms because they did not even have any. I entered the building and I bumped into the three people I had gone to kill.

–Hello, idiot. We have connected all the dots and we’ve been waiting for you. –said Fontaine. I noticed he was trying to say it with a cocky attitude, but he seemed scared anyway. I guessed seeing a man about to kill you with a P4 suit would be disturbing.

–Naive...–I started to laugh under my security suit; with the suit on they would not even be able to give a picture to the police if they survived. –Don’t you understand you’re already dead?

I took the bottle out and sprayed them. In less than an hour they would be dead. They were not able to escape because the bacteria made them suffer since the first second that it contacted their bodies; even standing up was impossible.

Once I returned to my car, I crossed out the names Ernest, Hobbe and Fontaine from my list while I remembered how much I had enjoyed watching them squirm while their skin got destroyed. It was a new experience for me; I had never seen my victims suffer directly, and I simply loved it. Watching how justice was made was priceless.

I would have stayed longer enjoying myself with the image of the three of them dying, but unfortunately, I had another plan that same night in a place called *Devtech*.

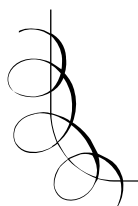
This time was much simpler. Only two people: doctors Clark and Olds. They were the owners of a small bioinformatics solutions company where the only workers were themselves. This way no unnecessary victims would die.

I was proud of what I was achieving. The twelve bastards that ended with Eve’s life thought that simply by dissolving the company that killed her, would be enough to get ride of the blame. They would never have guessed that I was going to go after them.



Atlas woke up at 8:46 with a message from Dr. Irza that said: *‘The Countdown Murderer strikes again’*. He would have felt better if he had slept for two more minutes, but he had work to do. He got dressed and went to pick up his boss directly at her house.

–I’ve been investigating by myself. I’ve found Alan Convey, doctor in Synthetic Biology. Direct business competitor in the field of Biotechnology. – Irza believed in her instinct. –Some of his work is quite interesting for our investigation, for example



the ones about improving bacteriologic hazard and controlling their life cycle. We might have found him.

–I’ve heard of him. –answered Atlas. –He’s a complicated person without a doubt. When we finish at the next crime scene we can visit him. If you get any information at the end of the day, I’ll invite you to supper. –When he finished the sentence, he winked and Irza felt like a little girl.

The crime scene showed the same as always: nothing. The three bodies were deteriorated but without a trace of any microorganism. Unlike the other crimes, the victims died around 3:00; this meant that the victims were waiting for the murderer at their office. This made Irza think that they must have had some kind of connection and they could see it coming.

When they left the crime scene, Atlas and Irza went directly to talk with Doctor Alan Convey. They followed their GPS indications to get to an enormous mansion in the middle of a forest in the outskirts of Paris. It was more a palace than a scientific laboratory.

–I’m glad to see you. I’m Dr. Convey, but you can call me Alan. What is the purpose of your visit?

–Let’s see, twelve people who are your enemies in the Biotechnological industry have appeared dead. We would, first of all, want to warn you in case you are the next target. –Irza took a few seconds to breathe before dropping the bomb. – In addition, we would like to know what you were doing the last few nights around 3:00 and 4:00 and if someone could corroborate your alibi.

–Miss, are you incriminating me? –Alan seemed upset. – I won’t lie to you; I’m glad those people are now buried underground because it makes my way much easier. In spite of that, I would never use my sweet creations against my enemies.

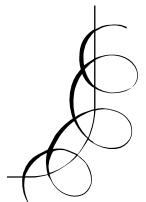
–Are you suggesting that you actually have bacteria with the same characteristics as the ones used in the crimes? –Atlas asked.

–Mister, in this house I have almost everything you can imagine and I have an area reserved for bacteria which could destroy any human being. How could you even question it? –Atlas hated Convey’s ‘on top of the world’ attitude. – If I were you, I would try searching for *VV Biotechnologies*. Who knows? It might be the connection between ten of the victims.

Before going back to their department, Irza and Atlas stopped in a Chinese restaurant and took their supper to go; they were ready to work for a couple more hours in her office.

The building was empty; everyone had already left. While they ate on her desk, they looked for information about the company Alan Convey had talked about. To their surprise, there were not many details in the Internet; they had to turn to the police records to find it and still little information was found.

*VV Biotechnologies* was a company created eleven years ago by a group of twelve groundbreaking scientists. Their idea was original and new: they wanted to modify bacteria and other organisms like plants so that they were capable of having healing abilities. However, it seemed as if it was not such a good idea because three years later the company dissolved and from there, four other companies were created. Of all the victims up to that moment, ten were amongst the twelve cofounders; everything indicated the two left were going to be next.



The next and last names were doctors Clark and Olds. Atlas and Irza hurried to send patrols to *Devtech*, the bioinformatics company created by the two last scientists.

They got there late... 15 minutes after she had given the order, they called Irza telling her that ‘The Countdown Murderer’ had already been there the night before. Since it was such a small company, nobody had found the dead bodies yet.

Irza burst into tears. She had failed; they were all dead and the murderer had won. But there was Atlas to take her in his arms.

–Calm down, there’s nothing you can do now. –he said.

–Yes there is. – she stuttered –I have the feeling the closure of *VV Biotechnologies* has something to do with all of this.

–You are going to keep investigating, aren’t you?

–Yes, I won’t stop until I find that bastard. –she kept on crying.

–Ok, I’ll stay with you. But excuse me for a moment first; I have to go to the bathroom. –Atlas got up and left.

Irza started her search and as she read news from years ago, she finally found something interesting. Supposedly, the company dissolved due to a medical negligence against E. Delacroix, who died after testing with one of the company’s experimental drugs. All of this was off-the-record information and all the culprits ended up unpunished.

After this discovery, she searched the civil registry of Paris and looking by the deceased date and screening by the surname, she found Eve: a deceased young girl who died by natural causes the same year *VV* closed. In her record, only one family member appeared: Atlas Delacroix.

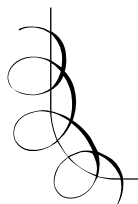


I crossed out Clark and Olds from my list of names. My plan had succeeded but I still had a couple of things to finish. I exited the bathroom with my suit on; I did not want to leave any trace. I would have preferred not doing it, but Irza was figuring out too many things. If she found Eve, she would get to me. I did not think it was fair that I got thrown in jail for doing the job of hundreds of police officers I tried to contact to solve Eve’s case.

I approached from behind and saw the picture of my sister on her screen. She must have seen my name already so I tackled her and hit her on the head with a garbage can I had taken from the bathroom.

Once she was unconscious, I made sure I left everything as it was. I arranged all the things on her table and closed the information she was looking at.

When I finished I was thankful I had disconnected the security systems the night before so I was able to leave the building without problems. I got in the car with all my equipment while I carried the girl to take her home. When I got there, I went down to the basement and left her unconscious body there locked up; that would give me time to think what to do with her.



Irza woke up in a white room, with no windows and full of laboratory material. Her last memory was discovering that Atlas was the murderer she was looking for. The only exit was a metal door going up the stairs where suddenly Atlas appeared.

–Irza... I'm so sorry I had to bring you here this way. –He spoke with a very impersonal tone, completely different to what she was used to. Probably, all the time they spent together at work was a fake. –I could not let you uncover me.

–But, why did you do it?

–I never had a father and when I went off to college, my little sister lost her direction... my mother only knew how to drink and was always drunk. Eve started to drink as well and in no time she got on drugs. It was an auto-destruction spiral. –Atlas took some air; he seemed uncomfortable telling that story. – Every day she spent even more money on drugs and in the end the only way she found to pay for them was trying new experimental medicines in the *VV* Company. Those bastards didn't care about my sister's health; they only cared about their money.

–And why didn't you try to help her? –Atlas was still at the top of stairs; he did not go down to the basement.

–I did. I postponed my Microbiology studies and went back home with my mother and Eve. I tried to control her every second to avoid that she had drugs and I actually managed to do it until my mother suffered an ethylic coma. While I went to visit her at the hospital, those *VV* bastards called my sister and offered her a new experimental treatment to eliminate her drug addiction. Eve accepted it because she thought it would make our lives easier. – Irza was horrified with all the experimentation that was going on without anybody knowing. – One day she came to the hospital to visit our mother, she told me about what they had done to her: they had introduced synthetic bacteria in her brain that could supposedly control neuronal receptors to relax her withdrawal symptoms.

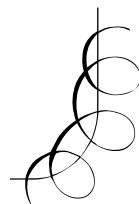
–That's crazy! Why didn't they experiment first on animals?

–As I discovered later on, they did but not one had given a positive result. Even so, the twelve scientists guessed that it could work for humans. They were wrong; my sister died two days later, completely unhinged and mad. The bacteria in her brain made her lose track of time and space; she ended up killing herself during a hysteria attack. –Atlas' voice started to tremble. –When my mother found out, she also died... of sadness I guess. I was left all alone.

Irza started to cry; she was scared of being there and it was a horrible story that made her feel uncomfortable when she understood Atlas and his motives.

–After that, I continued with my studies and graduated with honors. I finally got a job at the scientific police department; a very useful thing because it let me track the twelve founders of *VV*. Those stupid bastards dissolved their company and their crime was kept a secret. But I could not forget it so I started to design my revenge... they had to suffer with the same weapon they used to destroy my family: a killer synthetic bacterium. –The man seemed proud of his creation. – And finally I feel free. There is only one thing left to do before I can consider justice is made.

Irza suddenly noticed that it smelled like gas and understood what Atlas' last intention was: to die. He took a match from his pocket and lit it causing a gigantic explosion in the upper floor where he was still standing. The house started to burn down. She ran up the stairs that were the only possible exit. Atlas was not there anymore so she walked through the flames and, after almost fainting because of all the smoke, she finally got outdoors.





She lay on the ground watching everything burn and all of a sudden another explosion destroyed the rest of the house; nobody would be capable of surviving that.

When the police arrived at Atlas' house, Irza had to explain everything that had happened and how Atlas was 'The Countdown Murderer'. She also affirmed that he had to have died in the house because she actually saw how he lit the match. Everything seemed to come together for the police and investigators. The case was closed because they had a concluding story that made sense, and even though the rests of the man were never found, they accepted that he must have burned to death.

In spite of everything, Irza could not stop thinking about why he kidnapped and tried to kill her. Atlas had very specific objectives and she did not fit in his pattern. In addition, the explosion seemed to be prepared so that she could have the chance to survive and escape. It was as if 'The Countdown Murderer' tried to make sure that somebody saw him 'die'.

If Atlas actually survived the explosion or not, was a doubt that followed Irza until the day she died.



That night I had another mission. The days passed as I studied the stories of all the scientists I knew and if someone did not follow the laws, I would go to his house and get him.

As time passed, I created a new bacteria a bit more... how could I qualify it? ... Silence; yes, that's it. I used the same 'vital clock' as the one before, but this time death was caused by a heart attack: the bacterium paralyzed cardiac muscle and once the host was dead, it would auto-destroy itself making it seem like a natural death.

I did not have to use my suit anymore because I was vaccinated against the bacteria so it would be impossible to affect me. However, I kept on wearing it because it made me feel right and it would show my victim how I really liked to be. Besides, it was the only thing that was always the same, because I had to change my name every time I traveled and I modified my appearance to avoid being recognized.

My life was completely perfect; I went from place to place searching and tracking all the scientists I considered to be bad so I could destroy them and purify the scientific world. I was offering a service to all of humanity.

Maybe, the only thing I missed was Irza... She understood me and my cause but there was nothing left to do. Each one had their place and the job I was meant to do was to clean the world from toxic people that haunted the lives of the innocent.



# THE LABYRINTH

ORIGINAL IDEA *Marina Mañas Cháfer*

**D**

*December 19, 2015. Minotaur's Diary*

The delivery had been made: 10 sets. As far as I could understand, the objective was to use it by introducing it in packages against different enemy capos. It will be divided into five small, glass bottles per set with the necessary handling instructions. But in spite of that, it always ended up accidentally falling into someone else's hands that it wasn't meant for. It was their problem, though, and I didn't care because I knew that everyone that was going to handle it was a bunch of murderers.

Right now I am crossing the continent to close a deal with the "power 1" (better not use names here). According to what they told me by phone, it had to do with plants. "Power 1" wants control all of the oil stations that are currently under "power 2's" control. The negotiations were ruled out a while back, and to continue pressuring without attracting media attention, the only thing left was biological warfare. It had always seemed fun to me to sell death; later the deaths end up appearing as accidental outbreaks on television. Many governments and powerful people have been using my products for years, and through bribes and great amounts of money not one detail links me to any of this. They all want to protect me because I have reports that show that nearly all of them have had a "job" done for them and they don't want anyone to know about it. That's why I like the alias, "Minotaur". It reminds me that I have to control a labyrinth of contacts and information so that nobody can get in. No matter what the price is, I have to protect it.

Soon I will disconnect...tomorrow is my last day of work and I'll be able to go spend Christmas with my wife and two daughters. Maybe I'll be able to give my young daughter that trip to Orlando that she has been asking for. As of now, I'm taking them a gift from the place where I've been these past few days. I always do it and they seem to like it.

*December 20, 2015. Stephanie's Diary*

This morning something great happened...Dad finally has vacation! Mom told me that he would be home in a couple of days. For sure this year my birthday present will be a trip (I'm nervous about turning 11!). Caroline laughed at me at breakfast when I told her I wanted to go to Disney World. She said I was too old for that silly stuff, but I don't care. I want to see the princesses' castle! I think she is excited, but she wants to act grown up. This afternoon I went with my mom to the mall to buy a coat. There were a lot of people going here and there and in and out of

stores. I didn't like that. So many people make me nervous. Once I couldn't see my mom, but she didn't take long to come up behind me and tell me not to wander away.

We had pizza for supper and later Carol and I watched a movie that Mom had bought for us. It was very entertaining and it was about a princess that had to save the world all by herself. The princess was a scientist who tried to cure the world of a terrible disease. After watching the movie, I wanted to be like her and my dad.

*December 20, 2015. Minotaur's Diary*

I'm traveling in first class over the Atlantic returning home after the last meeting that, by the way, has ended with a simple order on behalf of "power 1": they want seeds that will overgrow enemy crops when thrown upon them and cause a vegetable population that will be difficult to eradicate. No problem. It's not the first time I have done it and I have them in stock. There are times that I get the sensation that innovating in biological warfare is quite difficult. I can't complain though since this "sale" means half a million more in my account and a new business contact that will give me future happiness.

The idea of the plants is a good one, but the enemy of "power 1" certainly has the advantage. "Power 2" has decided to go a little farther and intends to contaminate "power 1's" drinking water with synthetic bacteria, sold by me, capable of evading any type of water quality control and provoking dysentery. This order would be a challenge as an investigator. The truth is that when I graduated in Biomedicine, I never thought I would end up being what I was today, but I keep the investigator's spirit alive. I'm still excited about the scientific world. For example, Synthetic Biology has become my new passion above all due to its power as a tool in the job I do.

It certainly is fun to be the best "bioweapon mercenary". From time to time, like now, I must provide "weapons" to both sides without them knowing about it. It's during these moments when I feel powerful, being the only one who has all of the information, that I realize how much I really love my job.

*December 21, 2015. Stephanie's Diary*

Dad got home today! His job as a doctor (or something like that) keeps him away from home a lot, but I knew he wouldn't miss Christmas. My dad is, according to my mom, a man who lives to help others, even though if you ask him about it, he never wants to talk about it and always makes a strange face.

He always takes long trips to other countries and brings me typical souvenirs. For example, this time he brought me a colorful dress, but one time he brought me a musical instrument from Africa. Another time he brought Carol and me a bunch of candy and chocolate.

After unpacking his suitcase, Carol and I wanted to play basketball in the driveway with Dad and even though Mom told us to let him rest, he came and played anyway. He's the best Dad in the world!

When it was time for lunch, Dad took us to his favorite hamburger restaurant and later that afternoon we went to the zoo. It was super fun!

To end the day, for supper we had Dad's special macaroni that only he knows how to cook. Later we played a board game until I started to fall asleep on the couch. I went up to my bedroom all by myself (I don't need anyone to carry me because I'm not a baby anymore!).

*December 21, 2015. Minotaur's Diary*

I finally got home to spend the Christmas holidays with my wife and daughters. My small daughter wants to go to Disney World for her birthday so tomorrow I'll give her the tickets.

Even though I really want to rest with my family, I have the impression that I am still working at home. I feel that when I am with them I have to pretend to be a person that I'm not, play a role due to all of the work that there is lately. The world was not going through one of its better moments and thanks to that, I was able to maintain the lifestyle I wanted even though it caused extra stress.

Even still, I was happy to have a full life that allowed me to make a living doing what I liked to do.

As far as my family is concerned, I've been playing with my daughters, having fun in the city with them, and I think they had a good time today. I'm being a good father.

To end the day, it's the first night with Serene in months. I hope it's worth the wait.

*December 22, 2015. Stephanie's Diary*

Finally! Tomorrow we are leaving for Orlando to go to the amusement park. They gave me the surprise right after I got up, when I was about to have breakfast.

Carol was just as happy as me, and Mom seemed glad as well. I wish Dad were too. He seemed a little sad. When they were alone in the kitchen I heard them arguing and I think it was something about his work. When we went to Orlando, he had to make a delivery. I don't care if he has to make a delivery as long as we can all go to the amusement park together.

Today I'm writing in my diary in the afternoon because later this evening we're going to the airport to take our trip. I'll spend the evening playing with Carol, trying to cheer Dad up and sleeping on the plane. It's the first time on a plane and I'm nervous, but I think it's going to be the best trip of my life.

*December 22, 2015. Minotaur's Diary*

They've made an extra-official request. It was supposed to be for tomorrow! I only wanted to be able to spend some time with my family disconnected from work matters. At least some time to be able to enjoy my family and take a trip. I'll have to make a delivery while I'm in Orlando resting.

I know the girls won't like me being away for a little while, but there wasn't any alternative. Maintaining contacts was essential in the business I was in. I hadn't gained absolute control of bacterial warfare by putting my family before my work.

The buyer wants to avoid being recognized so he has asked me to leave the package under a bench at the airport. It seems a little dangerous to me, but at least the airport is on my way to the hotel. The buyer hasn't specified which organism he wants, only that it has to be capable of killing. I'll give him a set of a new synthetic bacterium that kills when it establishes itself as "biofilms" in the lung alveoli in anyone who is in a 2-meter radius and then later disappears from its host.

What worried me the most was telling my wife about the delivery. What I finally ended up telling her was the same usual lie: I would be away for a few

minutes to close a business deal in person while we were in the airport and deliver a sanitary order. As I expected, she got angry.

As soon as I get to the airport, I'll drop off the package and after that, if there isn't anything else, I won't work again until I get back from our trip.

*December 23, 2015. Stephanie's Diary*

The plane trip was great! It was full of lots of people who were going to Orlando. There were a bunch of families that were probably going to Disney World like us.

I had fun with Carol and Dad for most of the flight (Mom was sleeping because she was afraid of flying) and then later I fell asleep. When they woke me up, we had arrived to our destiny.

Dad was gone for a few minutes after we got to the airport. He said he had some work to do and took off with his briefcase. Mom seemed upset and that's why I went to look for Dad by myself. I didn't find him but I found a treasure in a black, wooden box under a bench. I'm sure it's something really cool because I opened the box and found a small glass bottle glowing with something yellow inside. I put the bottle in my backpack and left the black box (It was really heavy!). I kept looking around until Dad picked me up in his arms and scolded me for going off on my own, telling me not to do it ever again. The whole family had been looking for me and I had scared them all.

I asked him how his work had gone and he told me that everything had gone well and that today someone in Orlando would have a new prosthesis. He didn't seem happy. It was as if something hadn't turned out as planned.

After that we went to the hotel and it was super cool! The beds are huge and soft and I have to sleep with Carol.

Now we're in the hotel waiting for Dad who has gone to make a telephone call about something he has to do tomorrow. Later we are going out to eat at a nice restaurant to, according to Dad, start out our trip and long-awaited vacation off on the right foot.



Tomorrow we are going to celebrate my birthday in the amusement park with the princesses, the rides, and the castle. I know that this is going to be the best vacation ever!  
P.S. Maybe while we wait, I'll show the treasure to Carol and Mom.

*December 23, 2015. Minotaur's Diary*

The delivery had been an absolute disaster. After dropping off the package, I had left immediately in order to respect the client's privacy. After returning to my wife, I realized that my young daughter had gone to look for me. While I was looking for my daughter, the client had phoned, extremely angry, saying that the box was empty and that he would call me back some other time. Just as I hung up, I saw Steph walking around the airport.

Whoever took the bottle would die if he opened it; him and whoever else was near. It's the first time that something like this has ever happened to me. I was used to knowing that people other than the main target died, but it was always due to the buyer's error, not mine. Now I would have to make a couple of calls in order to try to solve the problem.

Could I live knowing that somebody could appear dead because of me?

*Extract of the interrogation transcript of Joel Camb as a witness of the death of his wife, Serene Camb and daughters, Stephanie and Caroline Camb.*

1-6-2016

NOTE: Uses the following nomenclature:

JC: Joel Camb

CF: Investigator in charge of case: Cormac Freint

CF: Could you tell us again where you were at the moment of the incident?

JC: I've already told you that I had gone to order a cake for my daughter's birthday for the next day. I made the telephone call at 5:23 p.m. It took me 15 minutes and I came back to find this terrible scene. You can check the telephone registers.

CF: You made two calls, one to a bakery and one to the police station. Are you sure they weren't alive when you went into the room?

JF: I'm sure. I went into the room and I found Carol, Steph, and Serene unconscious. I tried to do CPR but I was so upset I didn't know how much time to dedicate to each one of them and who to leave for last.

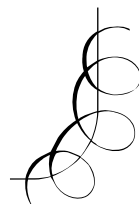
CF: The security cameras don't show anyone other than you going into the room.

JF: Stop accusing me! Look...Serene and the girls had a rare pulmonary disease. The girls inherited it from my wife. You can see everything in the medical records that I have here. They probably didn't get to their medication in time. When I went in the room, I saw the bottle on the floor.

CF: We don't have that information, Mr. Camb. It is true that while inspecting the room, a bottle was found but we haven't been able to determine the contents.

JF: The medicine was very unstable and had to be taken quickly. They were supposed to take it at 5:25 p.m. I imagine they didn't get to it on time. I should have been there for them.

CF: Don't blame yourself; we all make mistakes. The autopsy showed suffocation due to pulmonary insufficiency, which corroborates all the information you have given us. If it had been a homicide there would have been signs of strangulation or some chemical compound in their bodies. None of these things were found which



contributes to the hypothesis of a natural death. You are a Biomedicine investigator. Could you remind me what you do for a living? We just want to rule you out as a suspect.

JC: I'm an investigator and a doctor. I'm a specialist in implants and prostheses and I take them to different places and perform surgery upon the patient's request.

CF: OK. Everything seems to be in order. I think we can rule out a homicide and declare it as a tragic accident. We are sorry for your loss.

JC: They were the only people I loved in this world; without them, I have nothing...

CF: We apologize for any inconvenience that we have caused you. You are clear of any suspicion and your name as a prestigious doctor will not be damaged in any way.

*January 6, 2016. Minotaur's Diary*

I should thank this type of people who are capable of moving the world as they please for a little bit of money. Right now any government or private buyer would have already killed me in order to avoid a leakage of all the information I had if it hadn't been for the favor that they had done by hiding the evidence.

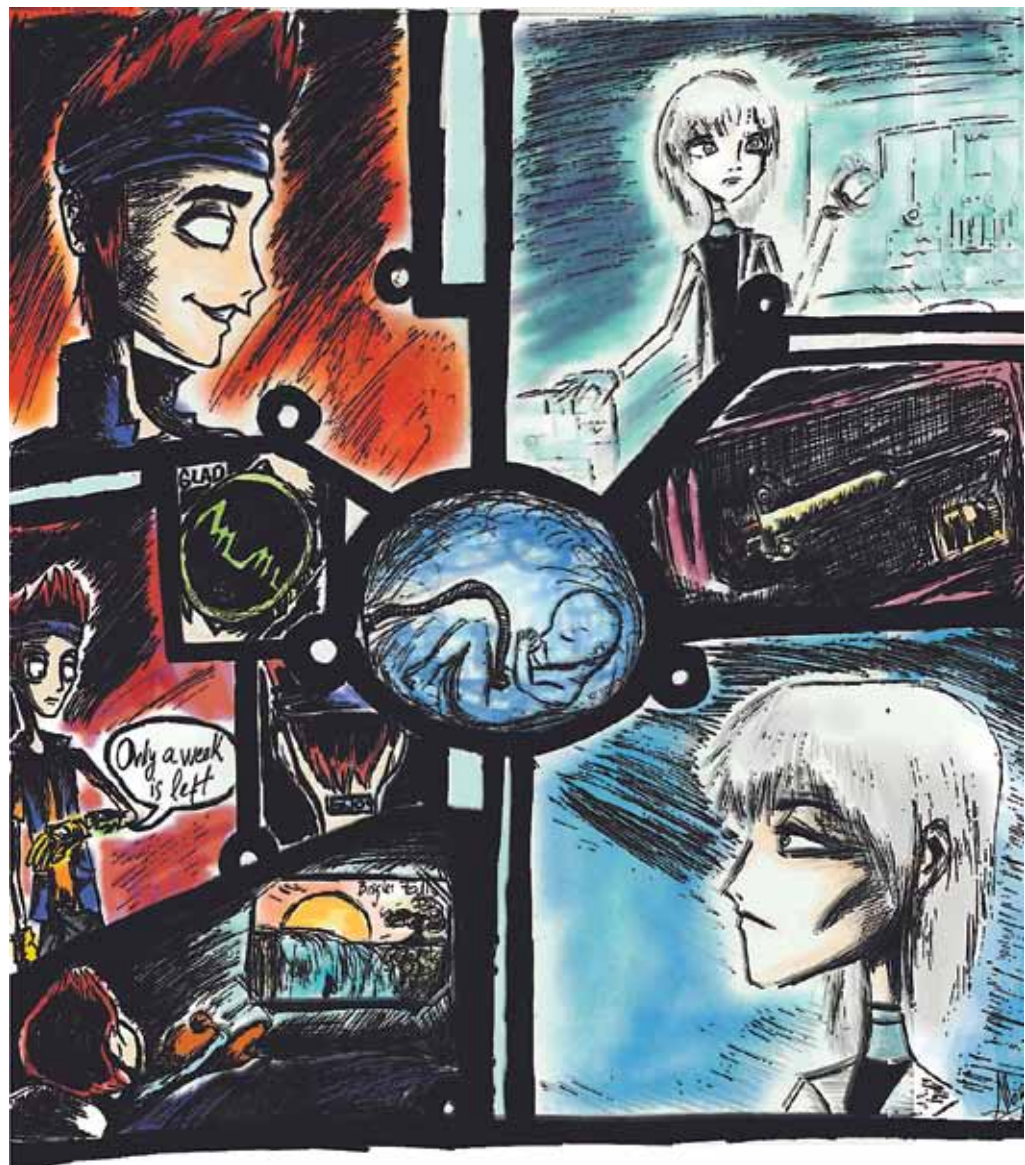
I solved the case this afternoon. I paid to manipulate my wife and daughter's medical records so that the cause of death appeared to be natural.

The truth is that I feared that the alibi was not completely stable. If I had been a police officer I would have asked myself how the three people had died at the same time or at least I would have tried to know more about the bottle and its contents; however, contacts keep the world moving. My clients in the legal, judicial and police forces have been pulling strings and managed to close the case even though it still had some unsolved issues. The interrogatory was just a matter of bureaucratic paperwork; I already knew that I wasn't going to be incriminated. Probably, the investigator, Cormac Freint, was getting a generous amount of money for not asking any dangerous questions.

My wife and daughters died, deceived, thinking that I worked in the field of implants and prostheses and that is what I was going to continue doing; I don't think anyone could understand how I am capable of doing what I do.

The role my family had in my life was necessary to give me stability and balance. During the three days that followed the accident, I felt depressed and downhearted and considered getting out of the "biowarfare" business since it was dangerous to my health and security. Later I reconsidered it: with all the money you earn and the amount of power it entails, you would have to be crazy not to continue being the king of biological warfare.

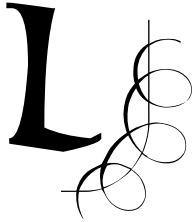






# THANOS

ORIGINAL IDEA *Tonny Ruiz*



Like everyone around his age, Hermann Kovacs, was born on RB-8 from a synthetic ovule artificially inseminated and developed in mechanical wombs. Years ago everything previously explained was done in a natural way; it had its charm but it meant an absolute chaos in the number of births and that situation was incompatible with overpopulation on Earth and its satellite planets. As a matter of fact, the world's overpopulation was so great that the only solution was to send people to prepared structures the size of the moon but orbiting in different lines. RB-8 is the eighth artificial planet of ten and each one has the capacity of about 250,000 people whose goal is to be chosen to return to the blue planet.

Upon birth, each person has a genetic code with the necessary characteristics to develop a useful role for his RB of origin. If they manage to carry out their job in an exceptional way, they earn points. When they have enough points, they receive a ticket to Earth. They have about 300 years to achieve this goal, which happens to be the average life expectancy. That increased lifespan was one of the most important reasons why people had to go live on artificial satellites. The great achievement of obtaining synthetic stem cells capable of generating long-lasting daughter cells supposed an indisputable improvement in the quality of human life, but the negative aspect was the lack of control in the number of people that could live together in the same space.

Kovacs analyzed the Earth from his RB. He was 21 and could only say that he had always lived there and had always cleaned the common areas. He was not genetically designed to be a scientist or engineer; few people, if not any, were back then. The most highly valued positions (science and politics) were filled with carefully chosen people according to certain interests, leaving the cleaning and maintenance jobs to new individuals. But this was not an impediment to be picked to go to Earth and Kovacs had almost enough points to make his dream come true. In a different era one would be sad to leave family and friends behind, but at present nobody had siblings or parents and the friends that one made were not really friends, they were competitors trying to reach the same goal. Due to the fact that they could not send everybody with high scorecards, only two people per RB were sent each month. This is why friendship was not worth the trouble; you could have all the points and die waiting for your turn if you wasted time on nonsense like leisure.

– Hi, Kovacs! It's time to get back to work. – It was Glad, his virtual reality system, always with the same feminine voice. – One more week until you have the maximum number of points.

– I'm going, Glad. I know how much time I have left. – Glad was actually

a control system that all RB inhabitants were obligated to wear to monitor their actions. He did not like having it on him at all times; it was like a parasite.

He cleaned the dining room of his work area. The food that was served could only be salads consisting of genetically modified vegetables so that they were able to grow in places with gravity modules (necessary to simulate Earth) or meat from animals like adapted hens and rabbits. After he finished sweeping and mopping his area, Hermann went to the bedroom area where he was supposed to take off the dirty sheets and put on clean ones. If he managed to make more beds than his coworkers, he would get a little bit ahead on the list of points.



– The time has come this month to pick two new candidates for the test.

– I still think that the process is crazy. We've been trying to get a positive result for more than 50 years and they only thing we've done is fail over and over. – said the geneticist boss.

– Have faith, at some time someone will appear being capable of supporting it, on RB-8 or any other RB and will return hope to the human race. – said Lucius, the most prestigious virologist of the era.

– I'm a scientist...don't ask me to have faith. Divine acts don't exist.

While the two investigators chatted, subject 488 doubled over with pain in a hermetic room in front of them. The vaccine continued without positive results and the dream seemed to drift away slowly day after day.



Kovacs finished his shift and went to have a beer with the only person he considered his friend on RB-8: Lucas Mason. Mason was created purposely with combined genes of the best investigators. The objective was to have a genius working for all of humanity and they achieved it.

Lucius thought highly of Kovacs without really knowing why. The cleaning man liked his company since the scientists were not allowed to go back to Earth, and therefore he was not a competitor and he could relax around him. It was prohibited for scientists to return to Earth since their work on the satellite planets breeding capable people was more important than the possible work that they could do on the planet; besides, the planet already had its own scientist selected.

– Kovacs, Dr. Lucius Mason is coming. – Glad said the evident once again, thought Hermann.

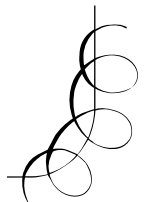
– What's up, Luc? – Lucius only put up with this name if it came from Kovacs.

– I was looking forward to seeing you.

– I wanted to get together with you to talk about something. – Kovacs did not like the tone of his voice; he was going to ask a favor for sure. – I see that you have a lot of points...but I must ask you to decline your intention of going to Earth. It's not that big of a deal; it's the same as here, but with some more colorful things.

– Man, I've been trying my whole life. Why should I stay here?

– Look Her... the world down there isn't as great as they say it is. – Kovacs was



starting to get angry. He did not know that if the doctor told the truth, both would die at that very moment. Damn Glad system thought Lucius.

– You aren't going to make me change my mind. I need to get out of this cage of grey colors and artificial oxygen. I want to be able to see it in person and then if I don't like it, it will have been my own decision and I'll have to accept it.

– I won't be able to change your mind, will I?

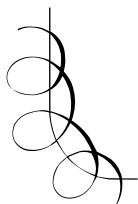
– No. Now let's enjoy this damn beer once and for all.

When they finished their beer, each one went to their respective resting areas. There were differences there too. One had almost an entire house in which to live while the other, Kovacs, had hardly 15 square feet of personal space; and even then he had to share it with his Glad system. Kovacs did not understand why his friend had insisted so much about not going to Earth. Maybe he was jealous because he could not go back to the original planet and did not want to give up his only friend. Personal relationships were difficult not only because they required you to be likeable and empathetic, but much more. His genetic code was designed in such a way that establishing a friendship was almost impossible due to the fact that they were all created to be introverted and therefore avoid distractions in work efficiency. Once in a while, there was luck and two people were capable of establishing a bond. There was also the topic of relationships among individuals of the opposite sex: they did not exist. To avoid the possibility of procreation, besides everybody being sterile, they were programmed to feel repulsion towards the other gender. No male felt attraction for a female and vice versa. Kovacs thought that the normal thing was to be born from mechanical wombs until Luc told him otherwise a few years back. He commented that it was one of the worse consequences of having found all of the secrets of the genetic code.



Lucas Mason had been working since he was ten years old in his laboratory (advantages of controlled genetic design) and always on the same thing: finding a vaccine against the virus. There were days he felt like running out and telling everybody the truth, for them to stop trying to collaborate in that big lie they were creating. If he tried to do it, immediately afterwards, his Glad system would kill him and everyone who had heard what he had said. People thought that the virtual system that accompanied them was a tool of help and information, but it was the total opposite. It captured the ambient audio to avoid information filtrations. If something risky was heard or said, it provoked a discharge that melted the person's brain.

The last advance they had achieved was a new version of the vaccine, more stable and with more possibilities of a cure. Now they had to test it on humans; that's how it was done on all of the RB that orbited the Earth. The process was made easier due to the fact that each new human that was created had its own immunological predispositions. In one of the many experiments they had to find the perfect combination between the correct vaccine and the appropriate genetic code. When they achieved it, they would not have to worry about living there and everything would go back to normal as it was ages ago.



The only thing that Lucius was worried about is that the only friend he had been able to find in 27 years was the next possible candidate. Maybe with him, it would work. You never know. In the scientific world one had to sacrifice and you had to take risks if you wanted to win.

– Hermann, I have good news for you. – Glad said. – You have been chosen to return to Earth. Please, pack your important belongings and go to the scientific center in sector 18 of RB-8.

Kovacs smiled like he never had before. He had finally achieved his goal. All of these years of hard work were going to pay off. He would go to his room and pick up the only thing that had any value to him: the postcard.

His personal motivation was to get to the place in the image, “Bright Falls”, on Earth. He found the postcard when he was nine years old while he was cleaning an old man’s bedroom that had passed away in his work area. From the moment he saw the picture, he knew he had to go there. Every night before he went to sleep, he would contemplate the picture trying to imagine what it would be like to see it in person: touching the trees and breathing fresh, mountain air. He had been born for that moment; it was his dream and his reason for living.



Lucius observed how his friend arrived to the central lab with a simple backpack and a smile that he had never seen on his face before. He was with a middle-aged girl that would also be subject to the same thing as the young man.

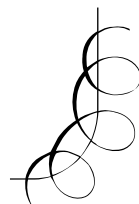
– Good afternoon, subjects 489 and 490. You have been selected for the “Return” protocol. – announced the Glad voice in the room.

– Hello, Her. You finally got what you wanted. – Lucius was depressed. Due to his genetic code, he did not bother greeting the woman.

– And with pride and eagerness, my friend. What should I do to finally see the Earth in person? – Lucius laughed and changed his demeanor to a neutral mode.

– Good afternoon, fortunate habitants of RB-8. You already know why you are here. I’m Dr. Mason and I’m in charge of informing and guiding you. You’ll take the trip in a space shuttle controlled by a virtual Glad system. When you get there, they’ll be waiting for you and will tell you the role that you will carry out in your new destiny. – explained the doctor to his friend in an impersonal tone. – For security reasons you must be sedated during the trip in order to avoid accidents in the shuttle. I’m the one in charge of administering the sedative and of taking you to the shuttle. Please, follow me.

They followed Lucius through a long glass hallway from which the Earth could be seen. Kovacs was delighted thinking that this was only a glance of what was yet to come. They came to a domed room where everything was white. There were two stretchers and a small, metal table with two small bottles and a couple of syringes on top. Dr. Mason asked the candidates to lie down and relax while he placed various catheters in order to control their vital signs and later administer the sedative. Once Mason saw that the pulse of each candidate was correct, he took the syringe and injected it into the girl’s catheter while Kovacs watched curiously. His turned arrived and the last thing he heard was the voice of his friend:



– See you soon, my friend. I'll miss you.

Once he had Hermann and the girl asleep, Lucius began the treatment. He took the new vaccine that they were experimenting with out of a small portable cooler and he injected it into the two sleeping bodies that lie on the stretchers.

Now it was his turn to wait a couple of days to make sure that the vaccination did not have any collateral effects and after these control days, he would inject the virus that ended with all existence of life on Earth centuries ago.



It was all a big lie that only the people who had to know about it, did: fewer than one in 10,000 on each RB, one of them being Mason. Earth was an inhospitable place and deserted of all human life. The reality was hard to accept.

When the scientists discovered a way of prolonging life, the world changed more than anyone could ever have imagined. What in the beginning seemed like something that would improve the quality of life, had an unexpected effect. Once the system of synthetic stem cells was implanted to prolong youth, this started to be genetically inherited so that after some generations, everyone lived almost 300 years. This meant a change in behavior: before families were small with a few children. This changed and the situation got out of control. Living longer made couples become bored after 40 years of marriage, making them look for other mates with whom they had another ten or eleven children. These children grew up and they acted the same way. Family values were being lost and when they finally realized what was happening, there were too many people on Earth to be able to coexist.

It was then that NASA activated its master plan: relocating thousands of people on artificial satellites orbiting around the Earth. So, they started taking different candidates to the first RB: RB-alpha. As an experiment, it helped them to check if synthetic crops and farms could be maintained stable in space. But something was wrong: people started to overpopulate the RB.

The action taken was necessary to be able to limit and establish barriers to the great demographic problem of the artificial planet: population control. Each inhabitant on the orbiting base was sterilized one by one and investigation of mechanical wombs and synthetic fertilization started, even though they were not going to put the results of the investigation into practice at the moment.

Once a balance was established on the first RB, they began to relocate people to other orbiting bases carefully spread out in line with other bases to avoid stellar accidents. The only requirement to living in outer space was to be sterilized.

The relocation of millions of earthlings on different satellites helped to demographically clear the Earth for some time; but unfortunately it was not enough. Natural resources started to become scarce and the outlook for the future was not good. A biologist came up with a drastic solution to the problem: release a synthetic virus to kill off the less useful people of Earth's society. It was called "Thanos". The selective control started with the vaccination of people chosen for their extraordinary aptitudes: elite athletes, brilliant investigators, wealthy politicians and influential families. All of them were vaccinated secretly a few days before the lethal virus was released.



When Thanos was released, the results were a success. The people who had not been vaccinated perished giving up the world for those who deserved it. This process was not known on any of the RBs to avoid uneasiness on the satellites. Only the leaders of each one of the artificial planets knew what was happening.

But not all of the process was successful. The virus was a modification of a strengthened HIV, and as such, Thanos started to mutate uncontrollably and not even the vaccinated people survived. In less than two years the planet Earth was deserted of human life. The cities became part of the vegetation and animals roamed freely without fear of vehicles and did not seem to care about all the cadavers scattered all over the streets.

Since then, the RBs had become the only reserves for human life in the universe. The leaders on each one began the model that has been in use for centuries: people were given life in an artificial way with different genetic modifications so that they could be complemented with possible vaccine. Every person that was created was misled to think that Earth continued to be a planet full of life and that there was a possibility of returning if you obtained enough points. The point system guaranteed that nobody suspected anything if people disappeared and there were always more people anxious to try and go. The control by virtual intelligence known as "Glad" kept society focused on the objective of returning and made sure that nobody told the truth about what was really going on. The absolute truth: they were created to be experimental subjects in order to find a cure against Thanos (experiments with animals had been ruled out due to the fact that the virus did not affect them). If they achieved it, after thousands of years, they could repopulate the home of humans.

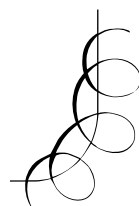


Two days had gone by with subjects 489 and 490 sleeping on the stretchers in isolated hermetic chambers. The vaccine did not have any effect on either of them. They were both genetically equal but the vaccines were two different varieties. That way, by combining different variables, perhaps some day they would find the cure.

Mason approached the girl wearing his special suit with the most resistant version possible against Thanos. If they found a vaccine against this virus, they would be able to find one for any other ones that appeared.

He then injected the virus under the young girl's skin and observed the green line on the pulse monitor. Ten minutes went by and Lucius started to daydream. The average was about 180 seconds of life after the inoculation. They were obtaining some of their best times until the pulse started racing. It all ended as usual: the green line stopped having peaks. They had failed again.

Lucius passed through the detoxification shower and went directly for the second subject: Hermann Kovacs, his friend and his brother if he would have been able to have one. What he began to feel while he watched him asleep and defenseless on the stretcher was indescribable. After having sacrificed hundreds of people looking for a cure, as if their lives meant nothing, he realized for the first time in his life that he felt remorse. What had the poor young man done to find himself there? Kovacs had a dream and he was denying him the possibility of making it come true just as he had done with the others. He thought about how they had been so brutal as to kill



hundreds of innocent people and misleading them with the objective of returning to their homes; their homes were the RBs. Seeing the young man with whom he had spent so much time was a complete turning point in his life.

But what could he do? If he liberated him, the Glad system would kill both of them and everyone who was involved. Lucius Mason had to come up with a plan.

He gave his employees the rest of the day off and took off the suit so that he could think more calmly. When night fell, he knew what he had to do. Glad was made up a system of virtual controllers around one's body that was absolutely worthless if the individual did not have the security chip in his neck. He could try and shock the system by subjecting it to an electrical charge and during the brief short-circuit, extract the chip.

He looked through his equipment and found an electric gun that they used in case a subject accidentally woke up during an experiment. He breathed deeply, convinced himself that what he was going to do was the correct thing and applied the electric charge. He fell to the floor as all of his muscles contracted. He made an extreme effort to take the surgical knife from his pocket, introduce it in his skin and extract Glad's electronic center.

When he was able to get up from the floor, he was bleeding quite a bit but he no longer heard the constant chatter of the robotic system. He cured his wound and stared to do the same procedure but this time on Kovacs.

He had managed to disconnect both of them but the most difficult part of the plan was yet to come: relocate Hermann and himself so that nobody knew who they were. The doctor's intentions were for them to take the identity of a deceased person and modify the personal data so that they appeared in the employee record books 21 and 27 years ago respectively. The next step would be to wake up Kovacs and explain everything to him and everything they had to do.

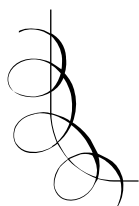
And that is what Mason did. He administered Kovacs the sleep-inducing suppressor and tried to clear his head with glasses of specially made potable water from the RB's nucleus. Once he came to his senses, Kovacs was lost and disoriented. He was hoping to see the Earth, not his friend again. Lucius explained in great detail everything that was happening and what had happened on the artificial planets during all those years and how everyone that wanted to return to Earth was deceived. Kovacs listened carefully to everything his friend said about the extinction of the human race, the virus to control overpopulation, and about how they had given him the shot. As he listened, he felt proud of his friend for telling him the truth, having done the right thing and having confronted his genetic code that only let him think about science and not friendship.

– Now that I have told you about the past, it's time that you know what the future holds in store for us. – explained the doctor. – We are going to relocate on the RB with new false identities. We will simulate our murders and we will start over.

– Luc, I'm sorry, but no. I still want to go to Earth and I don't care what you say. I was born for it.



Hermann explained his point of view to his friend. He was born and grew up with one simple objective in mind: return to the planet of origin. Having been genetically designed for that purpose, his only objective was to feel that he had



achieved his dream. He did not care if he got to Earth and died immediately after arriving. He knew that at least he would die breathing fresh air.

Dr. Mason listened to his friend's words closely and to the conviction that he showed and was surprised to realize that he understood how he felt; and not only that but also that he was willing to take that trip with him.

Lucius was one of the few people who knew about the "Cloud", one of the few unmanned space shuttles that existed. It existed in case someone came along that was capable of tolerating the virus or someone brave enough to go collect samples. The problem was that the Cloud was a prototype that had various design errors and due to this fact it was capable of reaching the Earth but it could not take off again (once it landed, the energy needed to start it and launch it again was excessive).

The two friends did not really care if they could not get back; they would probably die upon landing.

They did not have to think twice. That same night they headed towards the space shuttle hangar where the old Cloud was waiting. It was an old, but beautiful machine. It was a symbol of liberty and the will to do what is just. As far as Lucius knew, it should not be too difficult to start the space shuttle, and once they had it started, they would only have to set the route and the machine would do the rest.

Being 'nighttime' due to the fact that the Earth was between the RB and the Sun, there was only one person on guard in the hangar and it was not difficult for them to leave him unconscious with a sedative that was used in the laboratory. At night on the RB, there was a curfew and everyone had to go to sleep so that the electric consumption on the artificial planet was minimized.

They got in the Cloud and started it up. The space shuttle's system responded with the same female voice of Glad, which made them feel a little uncomfortable until they realized that it was just a phonetic emulation module and not a control module.

While the space shuttle started to lift off slowly, floating over the ground, Kovacs and Mason gave each other a hug remembering that the whole adventure they were living was for a simple and crazy friendship. What difference did it make if they died? They were already destined to die for breaking the rules on the RB.

– Luc, thanks for coming...you aren't regretting your decision at the last moment, are you? – The hangar's door to space was opening.

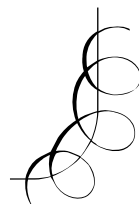
– Never, my friend.

Lucius hit the automatic route button, selecting the planet Earth and ordered the system to begin its journey. There was no turning back now: their trip had already begun.



The space shuttle entered the atmosphere activating the security systems so that it did not have to fall in the sea and be able to land on Earth. It was like flying in a paper airplane, gliding smoothly to your destiny to land without crashing. The machine used up all of the fuel that remained.

If there had been a living person at that moment, he would have seen the Cloud land in one of the enormous, cleared fields that surrounded a small, European village. Two shapes with slow, shaking steps came out of the space shuttle.



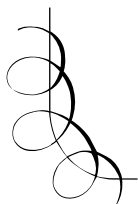


- We did it. – said Kovacs taking in a deep breath of air with a smile on his face.
- We are the first ones to see this in centuries.
- We are privileged...but something's not right...Aren't we supposed to die? – Lucius did not understand what was happening. The virus that they experimented with killed almost immediately.
- Maybe the vaccine that you tried on me worked!
- Maybe it did, Her...but that doesn't explain why I'm still breathing. – Lucius started to evaluate different possibilities and in the end he came up with the one that seemed to be the most reasonable. – Maybe Thanos doesn't exist on Earth anymore...it's probable that it had evolutionarily collapsed and become innocuous upon accumulating an excess number of mutations.
- I don't know what you are talking about, Luc...
- Forget it...you wouldn't understand.
- What will happen to all the people on the RBs? Will they continue to live the lie?
- We don't have any way to communicate it...I suppose that until there's someone else as crazy as us that comes or until someone finds a useful vaccine... – against something that no longer exists, thought Dr. Mason – nobody else will come to keep us company.

They just stood there for a long while observing the golden meadows, the silhouette of the abandoned village, the reddish color of the clouds during the sunset; they listened, spellbound, at the warble of the birds. Then, Kovacs suddenly said:

– That's sad, man...but if we can't do anything, it's not worth lamenting. Do you feel like trying to reach Bright Falls? –asked Kovacs with shyness, showing an old, worn out postcard to his only friend.

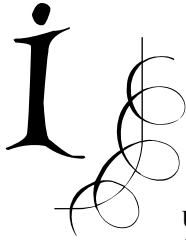
And Luc, when he heard this last crazy idea, just looked around and smiled.





# THE END IS ONLY ORIGINAL IDEA THE BEGINNING

Guillermo Zafrilla



In the only hospital that was left in City 43 you could find the duty doctor, Doctor Rams. Miss Green had gone to the hospital alone; in a different era it would have been weird for her to go without her husband, but it was not the time to wait for people who were probably dead outside the dome.

Miss Green broke water and was about to give birth to her child. Unfortunately, like in the last 27 deliveries, there was no anesthesia available to make the process easier. They had run out of it too soon. Rams prayed that they did not have to do a caesarean; the disposable material had run out and what was left had to be sterilized by hand without good results. The doctor took the woman to the room that was prepared for labor and tried to make the woman aware. 'It is going to be difficult' he said.

The birth was a total disaster. They had to do a C-section and Miss Green was not capable of surviving. The baby was a precious girl with green eyes and hair, that despite the fact of the little quantity, you could tell was going to be chestnut with reddish reflections. In spite of everything, the most distinctive thing her little pink body showed, was a strange birth mark in the shape of a leaf on her neck, next to her ear. The mark seemed familiar to the doctor, but he did not pay too much attention to it.

Because she did not have a father and she had recently become an orphan, Sister Lorene, one of the most loved women in City 43 due to her work with the orphanage, 'Little Sisters', took the small baby in. It was common for parents to abandon little girls. The jobs that were offered in the dome cities were usually related with construction and maintenance, where men could take advantage of their stronger bodies, while women were not able to earn money for their families. The limited space under the dome imposed a limit of one child per couple so little girls had all the chances of losing. At least, Lorene took all of them into her home.

The new member was baptized as Sher Green. From the first moment Lorene saw the little girl she knew that she was going to be someone relevant in history. She might be known as S one day.



Little Sher had been born in a world completely different to what people had known 50 years ago. A doctor known as Wake designed a revolutionary concept; he named it 'ecosystem kits'.

The doctor amused the scientific panorama of his moment because he was able to create entire ecosystems from a simple capsule that contained all the necessary

compounds. All of these compounds were specially designed by Synthetic Biology and they could work together to grow in a faster way and be much more resistant. This way, if for example you had several hectares of burnt woods, you could repopulate it in a matter of days with a simple commercial kit. The same effect could be achieved in a desert or in a space that was initially not suitable for cultivating. Like this, world hunger was reduced because you could obtain unlimited amounts of food -synthetic fruits and animals- and send them to places where people suffered from hunger due to limited resources.

The enormous environmental achievements that were made with his work made Doctor Wake win a Nobel Prize. The world seemed to live a golden era and all thanks to Synthetic Biology.

But all that glitters is not gold. The advantages that the organisms from the ecosystem kits had were the misfortune of the 'natural' organisms. The plants and animals that started to grow from Doctor's Wake invention began to displace the flora and fauna of every part of the entire world. People started to die because of the new allergens that were in the air: their bodies were not prepared for those 'synthetic' organisms.

Fresh air with allergens became toxic for almost a 100% of the population so the only viable measure was to enclose the cities under gigantic domes with a special ventilation system to avoid the entrance of pollen and external organisms. In less than 50 years, society had lost all type of organization. The world realized too late that it was not a good idea to have been convinced by all the advantages the ecosystem kits offered without even taking into account the disadvantages. And now they were paying their price.



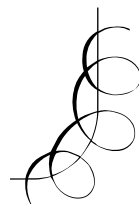
That day Sher turned 18. Lorene had prepared a spectacular present for her: a plant encyclopedia. The orphanage director noticed very soon the love the young girl felt for plants and that is why she spent a great part of her savings to try and rescue that valuable book from a bookseller from the black market.

Lorene told Sher a lot of times that she would have probably been a great friend of S. The first time she told her, Sher did not understand anything and Lorene had to explain the whole story.

S. was an old ecologist that was the only person capable of confronting Doctor Wake years ago. Stories say that S. fought to maintain the last natural plant of the planet alive before they were finally all displaced by synthetic ones. And in fact, S. fought and gave her life for her cause. For unknown reasons, Doctor Wake murdered S. and destroyed the last natural plant condemning the whole world to live under 81 domes.

Sher liked to listen to S.' story; she was like a heroine that was strong until her last breath. She was brave.

When Sher turned 18, she had to decide whether she wanted to live alone in the city she was assigned to and make a living as she could or just stay and help Lorene take care of the orphanage. Almost no girls stayed to help Lorene when they were old enough to choose; they all thought, mistakenly, that outside in the city they had opportunities.



Because she owed her life to Lorene, the young girl decided to stay and help her with the twenty-four girls she had at that moment. Maybe, someday she would try to succeed in the city, but the young woman felt it was still not her moment.

Sher thought it was not her time, but the Physics Doctor, Belz Murphy, did not think the same thing. He arrived the same day the girl turned 18 to propose a very awkward plan: change the world.

Mister Murphy visited the ‘Little Sisters’ orphanage very often. He had been going there for about twenty years in search of a person that accepted the idea of beginning a crazy voyage. He always looked for the ideal person in the orphanage because he thought that way he would not arouse suspicions in the city, and for now nobody had suspected. Lorene knew about his plan and she was not capable of rejecting it; he promised spectacular things. They then decided that when the moment came, the girl involved should be the one to decide whether she wanted to go with him or not.

–Hello, Miss. Green. I have a proposal for you. –Doctor Murphy talked in a magnificent way. –Would you like to travel in time?

The physicist told his plan to the young girl. His idea was to go back in time to find S. and avoid her meeting Doctor Wake. After that, they would have to save the last natural plant so they could work with it and try to make it more resistant so it could displace the synthetic plants and go back to normal. It was absurd, thought Sher. But Lorene trusted the idea.

–Why don’t you go back further and avoid the commercialization of the ecosystem kits? – asked the young girl reasonably.

–The machine that we are going to use to go back in time –Sher thought it was curious that he already assumed that she was going to go– works by links. I’ll explain it myself. The machine only goes back in time to a different machine that existed. The first machine which we know about is from the year S.’ incident took place. This is why we can’t go further in time.

Sher thought this made sense. It was like a temporal corridor to the past where you had to exit a door but you also had to enter a different one.

–How do you know it works? – asked Sister Lorene.

–If I am honest, I don’t. However, we can’t lose anything either.

Sher felt captivated by the opportunity she was being offered; she could save the boring world in which they lived and breathe fresh air again.

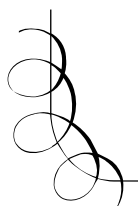
–There is only one inconvenience. hurried to say Dr. Murphy.

–Which one? –Lorene and Sher asked at the same time.

–If you leave, you can’t come back. The machine doesn’t go forward in time.



Sher Green was in a strange futurist chamber where there was a comfortable chair where she could rest before the trip. She did not hesitate when she accepted Belz’s proposal. Lorene was proud of her adoptive daughter. The reason why she accepted that ‘mission’ was to make a small contribution to the world she lived in. Like Lorene, her guide along her first years of life, Sher felt that she had to give something to the people on Earth before she died. Her gift would be changing the entire world.



–Are you ready, Sher? – said the doctor behind the glass door. –You won’t feel a thing, I hope.

–I’m ready! Hit the button.

And that was what the doctor did. The machine started to produce blue flashes and electric shocks that made the doctor expect the worst. A great amount of smoke appeared around the young girl and after a strong explosion, the smoke began to disappear leaving an empty chair.

Doctor Belz was not a religious man, however he prayed to God that everything would turn out okay for the brave girl.



Sher closed her eyes due to all the smoke in the small chamber and when she opened them again, she found herself sitting in the same chair. She stood up and opened the door and was surprised because the doctor was no longer on the other side of the door. In fact, she was not even in the same laboratory; she was in a type of garage or basement where the time machine just seemed like an old piece of junk.

The girl went up the stairs she found and ended up in a living room. At that moment there was nobody there but it was obvious that somebody lived there because there were photographs and you could see breakfast leftovers on the table. She exited the door and found herself in front of something that surprised her: a bright blue sky. For a second, she thought that she had gone in time to a moment where Wake’s ecosystems had not dominated the world yet and where domes were not needed. Sher had wished it was like that but it was not. The dome was still there but the only difference was that it was clean and you could see the exterior. One of the major problems of locking an entire city under a dome was that it was not easy to clean it from the inside... and much less from the outside.

Her mission began at that moment. She had to investigate about S. and find her as soon as possible. Doctor Murphy did not have a lot of information about her because S. was a complete mystery. Everyone knew she existed because Wake bragged about having killed her, but nothing else was known. Sher’s first idea was to try and contact with some ecologist group; they should know something else.

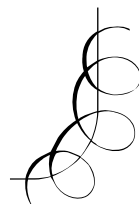
While she strolled through the crowded streets of that new city, Sher kept on thinking about her next steps. Behind her, was a young boy running as fast as he could while he pushed everyone aside. A tall and stocky man that did not seem very friendly was chasing him. The young boy crashed into Sher making her fall down and against all odds, instead of keeping on running, he stopped to help her, risking being caught. Once the girl was okay he continued running and she decided to follow him; he could be her first contact from the past. They began running together and after a long time, escaping through dark passages, they lost his pursuer.

–Hello. –said the boy, still panting. –My name is Rams, and yours?

–I’m Sher and I need your help to solve a problem.

–I think I owe you a favor because you helped me escape, so spill it out. –Sher liked his friendliness. The boy looked like he was about 16 years old.

–I’m looking for someone called S. This person must be related with ecologist groups and she has something I have to take care of.



–You couldn't have been luckier! Do you know why that man was chasing me? You are really weird you know that?

–No, I don't.

–He's one of Dr. Wake's goons. He wanted to chase me so he could get to our secret meeting place. I belong to a green group.

–Why would he send bullies against you?

–The enormous amounts of money he has earned with the 'ecosystem kits' have made him mad. People say that the doctor thinks that the fact that synthetic plants and animals dominate us is just natural selection. They are the strongest organisms and that's why he doesn't want anyone to attack them; he doesn't want us to interfere in nature's course.

–But he was the first one who interfered in the natural world!

–I've already told you that he has lost his mind.



Rams opened the garage where he met with his friends with a small silver key. There was no one in the room; the walls were filled with pamphlets and there was a small dirty kitchen full of trash.

–Do you live here? –the girl asked amazed and hoping the worst.

–I do! I'm an orphan... I don't have anything better. At least I can study quietly here. I want to pass my exams so I can study Medicine. –Sher really liked him. She knew how difficult it was for a young child to live without parents. –Come on, it's time to eat. I'll cook something. –ended Rams.

After lunch, based on Italian pasta from a can, Sher thought about if she could tell the young boy about her mission or not. She did not expect him to believe that she had travelled 50 years back in time to save a plant, so in the end she decided to omit the information about the time travel and she centered all her time on finding S. and the last natural plant.

–You see, Rams... I'm here looking for a very specific thing.

–What is it? You don't work for Wake, do you? – he started to get nervous.

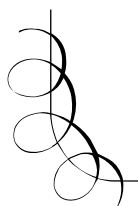
–They've told me that somewhere around here there's a plant. It's a special plant: the last natural plant of the whole world. –Rams' face seemed to change; he had to know something about it. –You can trust me... I work with people that are capable of returning life to what it was before the domes.

–I don't know... why should I trust you?

–Because if you don't, you'll be condemning all living beings that are not synthetic.

After a while thinking, Rams thought it would be reasonable to show her what he kept in his small artificial greenhouse in the only closet he had in his 'house'. He went towards the closet and used a numeric code to open the door that was closed with a security system he had designed himself. Behind the doors was his most precious treasure: a wonderful plant with green and shiny leaves.

When Sher saw the plant, she was moved. She was afraid the plant would be in a different city, which would have been inaccessible because she would have died after exiting the dome, or who knew what other possibilities there were. Now the young girl wondered about what they had to do next. S. had not appeared yet so



what seemed logical was to save the plant in Rams' greenhouse and try to find the ecologist that would confront Wake.

—Oh, you have a really strange mark on your neck! —said Rams when he saw the birthmark in the form of a leaf Sher had behind her ear. —It looks like a leaf!

—I have had it since I was born... it was the only thing my mother left me when she died so I could live.

Sher left Rams studying in his den while she decided to go out and look for some information about S. She was not looking for anything in particular but she hoped she could find a pamphlet or something like that with information about her. At first, she was careful trying not to arouse suspicions while she asked about S. However, in the end she did not even try to whisper and just asked openly. After two hours wandering around the city, the conclusion she obtained was that S. was completely unknown. It was weird; in the era from which she came almost everyone knew about the person who fought against Wake.

She decided to go back with Rams to see how he was doing and see if some of his friends had arrived and knew something about her.

When she got to the boy's house, her entire world came crashing down. The door was broken down, the place was completely destroyed and the posters and pamphlets were all ripped off the walls. The worst thing: the greenhouse was open... and the plant was no longer there. Rams had disappeared and the only things left were his human anatomy books... they must have taken him too. She investigated the scene to try and find some kind of clue about who could have taken him. And there it was; in the book of the future doctor, a huge W covered two pages.

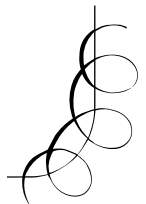
Sher knew what her next step was going to be: talk with Dr. Wake. He was going to pay for all he had done that day.



It was nighttime already. It was not hard to find where Dr. Wake lived. He was almost like a dictator in that dome city. The entire population was terrified due to his threats, such as destroying the dome and letting them all die if someone violated some of the rules he had established.

His house was like a castle with enormous gates around several meters tall. There were a lot of security cameras and spotlights that guarded the mansion. In addition, there were two security towers with two guards in each one. It was going to be insane trying to enter there, but Sher really liked challenges. She stood in front of the main door and called one of the guards and told him she needed to talk with Dr. Wake. The guard that was closer went over to her and tried to throw her off of the property, but Sher was not going to let it go so easily. When the security officer got to the gate, the girl threw herself to the ground pretending to faint. As she expected, the guard opened the gate to help her and just when he was next to her trying to see how she was, she hit him in the head with a rock leaving him unconscious.

She dragged him behind one of the artificial bushes —the plants had to be made out of plastic because it would be dangerous to have synthetic ones due to their





allergens and natural ones did not exist anymore- and there she took his clothes off. Sher would use his uniform to go unnoticed.

Once she was dressed, she went over to the gate and as she had guessed, the guard was so stupid he had left the door open when he came out. Just like that, she was already inside. The uniform was a bit big for her but nobody noticed because it was dark. As long as she avoided the spotlights and the security cameras, nobody would see her. However, she was concerned about the other guards that were patrolling but there was full moon and she could see them before getting too close to them.

She finally made it to the main building by being very discrete and thinking about each step she took. She analyzed the façade looking for a way of getting in without anyone seeing her and while she went around the house, she noticed a small rectangular window at ground level where a light shined. It must have been a basement. When she saw what was there, she was furious: there were several cages with one person in each one. She counted 17 people locked up as if they were circus animals; one of them was Rams. Sher took off the uniform shirt that she had stolen and covered her feet to avoid cutting herself. She sat down on the floor and bent her legs. Then, she kicked the basement window with all the strength she had and it shattered into a million small pieces. The window's frame was big enough for her to jump through without any difficulty.

A half hour later, she had already released all of the prisoners. Even though she did not have the key to the cages, Sher was a specialist forcing locks. She had seen it when she was just a little girl in a spy movie and she learned how to do it by practicing with the door from the room where Lorene used to hide sweets. The cages were old so opening them with a hairpin was no problem.

–Thank you for saving us –said Rams.

–Not at all –she answered. –Now we have to find the plant and get out of here.

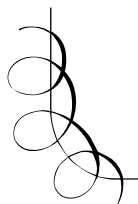
They had a huge problem: they were a group too big to escape successfully. Sher started to think about what was correct. Could she use the ecologists and Rams as bait? Would risking the life of the prisoners justify trying to help the future? The young woman started to get nervous; she had to think fast if she wanted to have possibilities.

–This is going to be the plan: you will all stay here while I look for Wake. This will distract the guards' attention and you will have time to escape. –Sher knew she would not be able to live with the guilt if they all died. That is why she decided to give them the opportunity to be free even though she sacrificed her chances of succeeding. –I believe Rams can get you out of here.

Before leaving, the young woman got close to her friend's ear and whispered: 'Make sure you become a great doctor, they will be needed in the future'. The girl exited the door and tried to position herself in that enormous house. The doctor would probably be on the highest floor so she looked for a set of stairs and then went up.



And there he was. In a couch facing the balcony with Rams' plant on a small table next to him. He was with his back to Sher and the only thing she could see was some kind of liquor in his right hand.



–Doctor Wake... I guess.

–Who are you? – he asked without turning around. –I’m going to call security.

–Do it. –She hoped the maximum number of guards would come so Rams had more time. – I’ve come here for the plant.

–You’re a stupid girl... why would you try to conserve a living being that is evolutionarily inferior? Synthetic organisms govern the world because natural selection has favored it. You should respect Mother Nature’s decisions. –Sher was shocked, the man was really not rational... he was disturbed. –You are not going to take it.

In less than two minutes, the room where they both were was full with 23 guards. Sher had only counted 12 patrolling the house and she hoped they were part of the ones there so Rams and the rest of the prisoners could escape through the window. The guards were pointing their guns at the girl’s back.

–How can you talk about natural selection? –the girl said out loud. –You have done just the opposite! You have introduced elements that have disturbed evolution.

–I’ve only accelerated the inevitable process by introducing organisms that sooner or later would have appeared.

While he said those last words, he poured gasoline all over the small plant. Sher feared the worst; she had to act as fast as she could. If she tried to get the plant and run she would die and she would probably also be killed if she waited.

–Doctor Wake... I think you have underestimated the human race. –Sher gave two fast steps towards the plant and she threw it out the balcony. With her last action, one of the guards triggered his weapon without Wake’s order. The bullet pierced the young woman’s chest just as the plant ploughed through the starry night.

The girl’s last wish was that anyone except Wake found the plant.

Rams and the rest of the prisoners were climbing the gate. Sher’s plan had been a success. Thanks to her distraction, they were capable of escaping. While they helped each other to escape, they were all capable of witnessing a dazzle in the highest balcony of the mansion, they heard a gunshot and saw how an object flew through the window. Rams thought for a second about going to see what it was, but then he saw how one the guards appeared and burned the object that had been thrown.

Once they were all out, a young girl asked Rams about his friend:

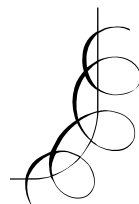
–Who was that girl?

–Her name is S. –Rams wanted to avoid that her name be published and that Wake found her family. What the boy did not know was that he was creating a legend.



Rams, the duty doctor in the only hospital of City 43 was in charge of a woman who has about to give birth, Miss Green. He hoped she did not have any complications to avoid practicing a C-section. The ‘dome cities’ had a big problem: they did not have enough supplies. At that moment, he remembered the woman from 50 years ago. If he had helped S. instead of letting her sacrifice herself, the world would probably be much different from what they knew today.

The birth was a total disaster. The woman died when they were doing the C-section, but instead, a precious girl with green eyes and hair, that despite the



fact of the little quantity, you could tell it was going to be chestnut with reddish reflections. In spite of everything, the most distinctive thing her little pink body showed, was a strange birth mark in the shape of a leaf on her neck, next to her ear. The mark seemed familiar to the doctor, but he did not remember why.

Sister Lorene took in the girl to spend her childhood in the orphanage. Maybe, when she turned 18 she would achieve something big in her life. Something great like S., the legend that fought for them plenty of years before. Lorene baptized the baby as Sher Green.

While Dr. Rams helped the small girl take her first breath of fresh air –as fresh as it could possibly be inside the dome- in the artificial grass of Dr. Wake’s abandoned house, a small remain of former nature appeared. After the plant was burned, a seed had remained latent: a natural sprout began to receive its first rays of sunlight waiting to be discovered by the human race.

