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RECOUNTER

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第１章

I was behind the Wheel of my old Honda civic, receiving directly from the clear sky above me the painful sunrays of Japan’s summer. Feels like there’s no Ozone layer left in the atmosphere above Tokyo. Suddenly, I received an unexpected call. I never receive calls besides from the ones my laboratory research team made almost daily. The first thing that comes to your mind is that something might be wrong. I’ve always tough of news as the synonym of bad thing happening. receiving an unexpected call, from a number this long, must be a surprise waiting from the other side of the line.
The man in the other side of the line wanted to now if it was the appropriate time for calling. Stuck in the traffic. Two in the afternoon. Monday. I couldn’t think on a better

scenario to pick a stranger's call.
"Professor Kawabata. I have the pleasure to communicate it to you that you have been awarded with the Japan Prize for science"
"Well, those are some good news" I replied
"Off course they are! I am calling you to inform you that the complete communication of Japan's awards committee was sent to your laboratory. I will be in contact with you again on the next weeks. I am sure this is not the last time we're going to talk professor Kawabata.
Once again, congratulations"

I stopped a second to think about what just happened, since the car in front of me didn't move anything since I answered my mobile phone. I should say than instead of making a stop, I relaxed on my seat, turn the radio on and enjoyed the sunny afternoon of what I was expecting was going to be a good week.

The laboratory where I have been working for the past decade is a ten-story building placed on the center of Tokyo. The building is disconnected of the main campus of the National Institute of science of Japan that is placed more into the suburbs on the north of tokyo. The center of Tokyo is placed on the west of the prefecture, near the port, this is what most people know. What most of the people don't know is that in the north (Saitama) and in the west (Chiba) of Tokyo most suburbs are settled.
I parked my car and took a big breath of cold air before going to the suffocating thirty degrees and ninety percent humidity of the outside.
Not all the days you are awarded with a prize and not all the days you find the receptionist of your laboratory waiting for you at the entrance with a big smiley and shinny eyes, holding an armful of papers that you can guess immediately, are directed to you.

I have never notice if Kobayashi smiles at me when I arrived to the building any other ordinary day. The young lady have been for the past two years in charge of the entrance which is the never ending task of dealing with the paperwork of the laboratories, maybe she is always drowned on coming packages and mail that I also decided to give her a space in her work and not bother to distract her. I can definitely recall her greetings on the early mornings. But, since I usually arrive at the afternoons, I guess it's my schedule fault, I never notice if she is in a good mood or just being educated. Also I don't smoke outside in the smoking rooms or go to the cafeteria often, all this reduce my social interactions to just the ones that happen to be on the upper floors of the building. I guess we are not closer than a mailman can be friend with of your neighbor.

She held up the bunch of letters in a gesture of greeting.
"We have good news today professor"
"I received a call while I was coming here" I said trying not to be surprised of having her receiving me in the entrance of the building.

Some years ago, after receiving my doctorate degree from Tokyo University. I was worried I can't continue my academic career. It seems that the faculty of science got an unexpected growth of students in life sciences in the last twenty years. I studied Chemistry for my bachelor degree and continued my studies on systems biology. During that period of time I got my first fifteen minutes of fame after I presented an independent paper before finishing my master degree's final thesis. The paper I submit propose a more viable answer for the brain's neural network to be translated into binary code. Not a complicated code that will be the equivalent as any other modeling program on a computer, instead I was looking

for a simpler and elegant way to reduce the amount of processed information and reduce the noise readings. Although in that time on the laboratory we were working on the calculations in some gene regulation after stress, let the stress be a cellular response to a virus or to environment changes. I used my spare nights as a graduated student without a girlfriend working mindlessly in front of my computer until high hours in the morning or until the boredom degraded into the inevitable desire to play Pokémon on my Gameboy.

All the laboratories of my student years were crowded as chicken coops. I remember always having to receive some foreign student or a visiting professor. Walk them through the university showing them our endless campus and entertaining them while my broken English surfed though all the conversation topics that I can imagine. I wasn't the only student who can speak English, but I was the only willing to spend a couple of hours walking around the university without a real purpose. Like if I didn't have anything else to do.

There are many ways to tackle problems in science. Most of them can be solved using the scientific method, imagination and hard work. There are also many ways to find a mathematical formula. I was trying to convert electric signals into "simple" binary code and I found that there are many ways to translate them and solve the problem, each of those ways more complicated than the previous one. There was no special finding on my paper. Only I propose a more elegant and simple way of translating random signals of any neural network into some finite number of sets that would obey other series of commands. Most of the previous works on neural network focus on the information they can get by connecting several devices into a neuron. What was in my opinion at

the time, a bunch of unnecessary information. I had this idea that the human brain evolved its processing capacity from a simpler starting parameter, imagining that the brain evolved from a life game conducted by nerve cells. More or less like the famous Albert Einstein equation for energy.

$$E=mc^2$$

That's the dream of most scientists. Finding a simple and elegant, easy to remember way to solve a problem. I came up with an algorithm simple enough and got some recognition on my university and from the local science community.

I ended up working in the section of bioengineering on the National Institute of Science in Japan. My laboratory was big enough to be divided into three sections. Three professors including me directed twenty-seven other scientist on three different tasks. Doctor Sumi was in charge of the experimental facilities, dealing with cell counting, cell cultures and most of the in vitro experimentation. Professor Kawaguchi works in all the hard ware and computer instrumentation and I am in charge of the theoretical and mathematical group.
We have been working for the last five years on, what the media baptized, Brain on a jar. Better to name it brain on a petri dish or a more realistic way, nerve cells on a petri dish. We work together to isolate a number of nerve cells that run trough a surface, just like the yellow copper circuits that you can find on the board of a computer. We place the cells in such a pattern so they can recreate the structure of a simple organism's nervous system. The nerve circuits are possible thanks to the integrated work of the three laboratories. The three groups; life science group, hardware group and a theoretical group, working together, failing constantly but those failing attempts took us to where we are now.

I entered to my office. Lock the room and open the big window on the back of the desk. It is strictly prohibited to smoke inside the buildings, but in this occasion I couldn’t mind less. Lighting a cigarette I pick the considerable amount of mail Kobayashi handed me and started reading what I knew will be my anticipated, also these late years rarely received, Christmas present.

第２章

From the moment I became a teacher I start enjoying more talking with the students that came from outside of Japan. I don’t know if it’s more the curiosity of trying to solve the always unanswered question “why did you choose coming to Japan?” or maybe it’s because I can see in their eyes my own reflection, those younger years when I was echoing into my own not clear future after I finished my doctorate degree going back and forward on every university or company pamphlet, trying to decide what to do next.
I read some books of how to interpret people’s faces, know when they are nervous, when they are lying. After practicing those techniques with the lab students I gave up, some one told me that I look like a crazy bird searching for something on their faces. Eyes to mouth, ears to nose, back to eyes, hands, eyes.

Two years ago Darko from Slovenia came to our laboratory chasing a post doctorate on microfluids. That quickly changed into a more common field on our laboratory, stochastic systems. Stochastic systems is a branch of the probability theory that focus on answering the questions based in probability methods more that in other deterministic evidence. In a post doctorate student you can expect most of the times two different scenarios. One will be the student who searches for a vacant place in a laboratory. The first step on becoming a full time investigator is being part of the investigation team and by entering as a student or as a researcher you are one foot inside the lab. The second possibility is that the student is so involved in the learning and the academy habits that his life becomes a vicious cycle where they can only find joy and excitement on a lab. Those students that will grow excited on any field of sciences or arts and would talk for hours about their fields of expertise. This was the case in which Darko was on. At least that's what I could differ from talking to him on the lonely nights on the lab.

I've always liked to work specially on the afternoons. I guess is the high speed of the Internet that always keeps the students until the high hours of the night. Maybe it's the warm that you feel in the desks after having spent enough time on a lab that it feels like home. The ones who scape early through the doors is always the ones that never enjoy the researcher life as their joy and their pain. Or maybe it's because I like that feeling that while you waste time sitting on your desk, dreaming on your next project, there is the probability that something new is just knocking the door and you don't want to leave the chair you're sitting because it's going to enter and invade your mind at any moment.

When Darko was new in the laboratory I approach him,

take a seat by his side and try to fire a conversation. It was the second week since he had come to Japan and obviously the language barrier was becoming a big problem for him, I always saw him alone in the laboratory.
“Do you like mathematics, right?” I said pointing to his PowerBook wallpaper in which two circles were intersecting the left circle included the world “knowledge” and the in the back of it you can see some random mathematical calculations. On the right side you could see a Michelangelo fresco of the XVI Chapel with the word “art” in front of it. In the center of the wallpaper where the two circles intersect, was a glorious image of the famous Hubble telescope’s fake colored magic mountains shoot and with not so glorious italic letters in front of it the word “science”.
“I don’t like computer modeling if that is what you are asking me” I obviously wasn’t asking about computer modeling but since he brings up the topic, I continued.
“why not? Computers can still make predictions that we only could wish and pop them as magic” I said moving my hands in the air.
“I don’t believe in magic, professor”
I sighted and searched for a pen in the desk next to him.
“do you know that in the first world war they used pigeons to send secret messages through the front lines, code them and decode them with little machines, little computers”
“it couldn’t have worked with their best telepathy tricks” he answered with a smile
“Right, now we have computers that can pop solutions to secret messages like magic, but if one enemy cached a pigeon that by any reason was down on earth, they would think that the message inscribed in the paper was just a curse, a joke, or just another message”
“I believed that they took those messages and try to decode them back again”

“in the beginning some soldiers didn’t know about the hidden messages, they would took those messages and saw nothing but another thing, like a killing sentence from a prison or a weird map only to scare them, a warning, or something meaningless, like a love letter. That was before everyone got familiar with the messages sent by pigeons and the trick was not useful anymore”
He looked at me at this point with an air of confusion, not knowing why the conversation went up to this extremities or what he should say now. The same look that an auditorium of students gives you when you are lecturing for the first time and no one have a work to say.
I continued.
“When they knew the pigeons were being cached and some of the best enemy minds were working to decode the secret messages, the army that originally sent the pigeons would now sent another round of false messages and in the case they decode their messages, instead of secret information, they would be receiving false messages”
he looked at me quizzically and I understood that I have to conclude my point quickly.
“there was a probability in any pigeon sent that the new information they got was true or false or may also be already useless. Can you think on four numbers? Four numbers that are significant to you, maybe not your bank account password or not as easy as your birthdate. Ready?
You got the numbers on your mind?”
“yes”
In that moment I leave in his PowerBook keyboard a tiny paper with the numbers 4621 inscribed in the front and the word magic in tiny letters below them. I stood up from my desk and glanced the always satisfactory smile of someone that has just being baffled with a good trick in a boring night.

“I still don’t believe in magic! Professor” he shouted while I was walking toward my desk to continue with my late night work.

After that first impression my friendship with this new student worked out pretty smoothly. You can be any kind of teacher you want, normally my professors treated me strong, spoke to me in a language that was for subordinates (the normal way of speaking in Japan), but also you can feel in their words the pride and the authority they demand. I am Japanese, I am accustomed to this subordination system, but I left my teachers from school with a feeling of fear and trauma. When I had the opportunity of having my own students and researchers, I tried from the beginning to be the kind of adult into which youngsters look after advice or a good talk and not after a shout.
The laboratory where we work is not big but still have enough space to contain ten people working on it at any time. And work in a full cramped environment of thirty people. My office on the left is the only private space. A simple black desk to hide the stains of coffee I often left on my previous work desk already gave me the lesson, and a window that also serves as wall since it extended from corner to corner. The main room of the laboratory is a renewed loft with black plastic wrappings on the walls, when they’re not full from floor to ceiling with mathematical calculations, you can see the white residues of an eraser marker giving not the best aesthetic feel to the room. To make a contrast again the messy walls of the lab, we spent a lot in some nice desks for the researchers and good chairs, designer lamps and some plants. We avoided the cubicle style not to give the lab an atmosphere of any other working company. For meetings, we have a big table on the right end. A video beam, a computer and old papers from old meetings on a little

table by the wall, also a bookshelf with all kinds of literature. From basic calculus to the latest book of Murakami and also a lot of manga that comes and goes like flowing water through the year. Theoretical lab uses all the last floor of the building. On each floor of the building on the side of the elevator you can also find on each floor a small room with the basic kitchen necessities and a small desk that although is not meant for more than four people, still sometimes you can see groups of almost ten students gathering around a birthday cake every week, cramped like in a train from Shinjuku at midnight.

Since I usually worked until late hours in the night, I also eat and drink inside the lab, the normal trend in all the labs all around the world, I think, but since our lab is not a place where we handle samples or any other kind of contaminable equipment, we allow a huge amount of coffee and snacks to flow around the floor. Also no one seems to have the time to go downstairs to the cafeteria on the first floor of the building next to ours.

“I only drink tea” said Darko another night, out of the blue while I was looking thoughtless through the window into the night lights.
“you have come to the right country” Japan should be known worldwide as the country of Sushi and green tea. I tough to myself before answering.
“I don’t understand why you drink coffee until these late hours”
“I like the kick that caffeine gives me to start working on my late night projects. Besides, since the caffeine effects only last up to eight hours so I won’t fall asleep in my car going back home, and I still have some time to rest in the at the end of my REM cycle before I wake up for the next day.
I have this hypothesis that when I go to sleep and my

brain is still in a restless mode, I can process better the information of the previous day. You see, I drink coffee to sleep better. In some parts of Latin America, where coffee is a strong part of the culture, people drink coffee also at nights. Not because they expect from that the tiredness go away with it, but instead they drink it because it taste like home. It's their calm down tea. Some people on the old days did the same with wine, they used to sit down in the nights and enjoy the last hours of their day drinking a nice glass of any alcohol beverage they had. More than drinking for the effect of waking up, we are all drinking for the sake of the feeling. It feels like work time"
"I think I abused of coffee enough when I was a student" Darko replied, as an excuse.
"as any other student outside there" I said wiping my hand in the window we where looking through, as if in the nightlights were hundreds of students right now empowering their brain with coffee at this time.
"not as any other, while everyone else was drinking caffeine or amino acid drinks, redbull, or any other famous drink on the market, I was drinking up to a litter of coffee per day, not only in exams but also on weekends and on vacation days. I had this idea that I couldn't waste any hour of my working capabilities, just because I was feeling tired at three in the afternoon"
"how much sleep would you get every day" I asked.
"no more than five hours each day. I am lucky I didn't get any dark circles under my eyes from the terrible lack of sleep, still the intoxication by caffeine was quite a painful experience. I went to the bathroom every two hours, my muscles will cramp like if they don't want to work anymore" he explained without a single expression on his face.
"I never heard of someone being intoxicated by caffeine" I remarked just to keep the conversation going.
"is not that common as I said, you have to be drinking a great deal of coffee each day"

“it was worth it in the end?”
Oh yeah, I nailed all my grades in college, I learned three languages during my undergraduate studies and still got time to mind having a girlfriend” he said while I see him laughing at something he just seemed to remember. sincere happiness.
“by the way” he said. “I wanted to ask you about how you manage to pull out of nowhere my bank account password, not that I believe in magic, but that scared the hell out of me”
“great magicians doesn’t reveal their tricks” I said with an air of satisfaction.
“any other trick on your pocket?” he asked.
“I won’t take my cup of coffee and transform it into a cup full of coins. If you are expecting an easy way to get around with some cash for the vending machines, this is not your day” I joked, “I don’t consider myself as a magician, that’s why I don’t deliver tricks by demand. I am a scientist, then I like to work when I have the strong believe something might work. I don’t have a lot of tricks in my pockets”
I took a sip from the cup and put my hand on the edge of the window as I notice he wouldn’t return to his work before I gave him a better explanation.
“In the same way you said that day you didn’t like computers that much, I don’t think people might be interested on the machines or experiments we worked on”
“Oh!, that’s why this lab doesn’t care about the media and how they baptized our experiment, Brain in a Jar” he interrupted me, but I just continued.
“living things can also contain loads of information just as a computer, but humans are especially vulnerable too give that information away. Also humans are more capable of tricking others to think what they want others to think. Just like pigeons in war, we can deliver a fake message also. The whole trick is to learn when others are transmitting a

real or a fake message. If I could take a machine and plug it into your brain and see what really rests inside your mind, that would be pretty neat, but in the end that is not possible right now.
So tell me, how would you get from someone's way of acting, a random combination of four numbers and also be sure that what you read is not a fake interpretation or an invention of your own mind?"
We start glancing down the street and thinking about how could I just guess a password out of the blue, not too late after he gave up "so you read my mind" He asked me.
"I read you. Darko"

Those days in the laboratories were easy days in which we deal with the same patterns as always, trying different circuit combinations, tying new environments, new solutions for the mediums, new evacuation systems for death cells, spaces for the cells to grow quicker and healthier. The theoretical labs scratching their heads and bottoms of cookie jars trying to find better solutions to a huge amount of parameters that for any other would look as random information influx. The almost impossible task of translating neural activity into report sheets.

第３章

“Professor Kawabata of the Japan’s National institute of science was awarded yesterday with the prestigious Japan Prize in Science for his work in information storage on cells.
‘A huge step forward on how we look at life and how we will use them the future’ said professor Tobita from Tokyo University Department of systems biology”

Tokyo – 2020 Asahbi Shinbun

A surprising amount of reporters where taking notes inside the conference room of the national institute of science when I came in.
“Good morning, thank you for coming today. I guess you have a lot of questions so what it’s consider to me, I’m ready”
“Can you explain us briefly what your investigation consist off, professor?” someone that I couldn’t see shouted from

the center of the crowd.
“Sure, what we developed was a mechanism for cells to store information. We took any event around them and produce a chain of RNA inside the cell that decodes not into a protein protein, but to a desired message. To make the mechanism easy to understand we used arabinose, a common sugar found in cells, as the induction at the beginning of the experimentation. In the first papers I published you can see how I used arabinose as the inducting event, at the beginning also using e.coli, and it’s sigma-factor to reset the circuit, count events, and erase them at my will. In a second stage we became more creative and used vibrations of the surroundings as the events. We introduce graphite compounds into the cell for them to reverberate when we send a mechanical wave, and in this way the cell can translate the messages just as a Morse code machine, after that we develop a similar method in eukaryotic cells and finally we experimented with a wide selection of cells, from strong osteoblast all the way to the weak dermal cells.”
“What you are saying is that you now can write inside a cell. Does that mean we can now write a book inside a cell?” the same voice asked from the inside, somewhere inside the suits in ties and flashes.
“In some sense, yes” I replied. “but more than that, now we are able to recreate any RNA pattern inside a living cell by sending specific events, let them be chemical events or mechanical events, we correlate those patterns into something we can decode and use the cell as an information storage device. If the RNA sequence is not used for protein synthesis is then quickly degraded, we can now keep that sequence and translate it into a readable message, in English.
Just as Craig Venter did with his artificial cell in 2010 when he and his group created the first example of synthetic life by introducing a DNA molecule containing a

bacterium genome and adding into the already existing code, a number of encrypted messages, like a webpage URL. If we speak in that sense, the answer is yes, we can write anything you want inside the cell, like a book. But I want to think that my work goes beyond those limits" I believe there was a silence in where all the cameras seemed to flash at the same time.
"You said, you can delete what is written inside the cell. Explain us a little more about that" some other voice shouted from the crowd.
"yes, and that is on of the main points of my work. Not only producing a series of codes inside a cell but also eliminating, if there is the necessity, of junk chains" I glanced at the desk were my only paper was the original work published a couple of months ago. I thought for a couple of seconds how interesting is that the work I brought up after long nights of staying over-hours in my office was now paying itself.
"we gave to the process a name that would be easy to understand to everybody and is written as the title of the paper. We name it RECOUNTER" by we I was referring to the other three investigators who helped me in some point of this work. One of them was Professor Sumi.

When I enrolled in the Institute of science, quickly I became friend of Sumi. His work is strictly made on the afternoons after he end his shift on the Ueno central Hospital. Something I always admired from Sumi is his organized life. Working in the morning as a respected transplant surgeon. Working in the afternoons as a respected biotechnology researcher and over all these two things, being able to sustain a, seems at least to me, a lovely family of three children and a wife. He once said that his secret was that he was fortunate enough to find his wife when still in school, marry her and convince her to stop her profession for some years until the younger of the

children, a beautiful daughter that have the same happy eyes of his father, could finally enter into high school. Then, when the family is settled and all of the kids received their basic education, she can return to her work as a nurse of the elderly people.
“Also you have to convince her that you are still the same handsome and intelligent man that she fell in love in the beginning” he said laughing. In the end is always enjoyable talking to people who can speak with that hint of sarcasm and truth in his eyes.

“the environment inside a cell is something rather chaotic” I continued with the interview. “if you built up a series of RNA strands and the cell don’t find any particular use on them, the cell naturally will discard them right away. That is the normal process inside any single cell. In our body RNA and proteins are made and quickly after some time they will be disintegrated and this process repeats itself several times” I arranged the microphone to make myself clear to the audience, or maybe because I didn’t know what else I can do with my hands.
“Until now we could also produce series of RNA strands but preventing them to be discarded until we want was the first objective in our study. First we deal with the biological and mathematical problems that are carried naturally with this work. Cells that cannot produce large chains, other cells that will suddenly stop the process, other might be born after the initial induction. All this are examples of disruption can change the message we want to transmit. At that point we couldn’t relay on a clear and constant message, but now we can be sure that the protocol we describe on the paper will allow us to spread a message through a colony and we can have all this group of cells retain the same and constant message no matter if they are created before or after the initial induction” I nodded as an indication that I was satisfied with my explanation.

“the message can spread through the cells just like cancer can spread through the body?” Someone said, showing clearly there was still a lot of confusion on the reporters’ notes.
“No, cancer is more complex than that. Cancer is the result to a body that can’t regulate it’s own cellular processes. I recommend visiting your local doctor for the further details on that question” I laughed and every one in the room also seemed to like my joke, or everyone in the room shared their sympathy with me.
“I understand that if now we can create more stable RNA chains, we can now create the proteins that are necessary in that precise time” some one that clearly have done his homework on basic cellular mechanism shouted from another part of the room.
“Yes and No” I said, then paused, but realized quickly I should explain deeply the details of my project.
“The original idea of my work is to count and *recount* events. We can produce RNA chains as our will, and that is the message that we talk about, for example, if we want the combination CCGC to be produced, we will send some inductions into the cell and a special complex will arrange itself according that specific inducted event and will produce one of the four different bases. We are also using the natural cycle of the sigma factor that is found on bacterial cells. This allows us to count the number of events, and *recount* them or reset them again if there is a mistake in the sequence or when we want just to delete them. Now you can see that all this is possible because of the molecular complex that is introduced for the purpose of taking advantage of the natural sigma factor cycle that occur in some cells. Now, the chains that we create might not be compatible with the cell’s mechanism to translate their own proteins. The proteins that each cell manages change widely from type to type and there are some cases that even the same type cell wouldn’t permit some

substances to be produced just because they are assigned to other purposes. What you are implying in your question is the idea of an unlimited product manufacturer using our mechanism of induction. Sadly, I'm sorry to take that idea down from your notes. We didn't produce cellular mechanisms for protein synthesis, that's why we make so much emphasis on the bioinformatics side of the project. Now we are a step closer to being able to send safe messages and delete them from a living network, instead of only transmitting them"
"what was the first message you wrote on a cell" They continued asking.
"I don't remember what was it right now, we changed the messages in the beginning. It was not significant for me at the time. You don't ask to the history, what was the first message sent using a pigeon or the first message in a bottle across the sea? You think on who got the idea of those ways of communication. was it worth it? At least in my lack of expertise, I can say that the pigeons had an important role, before more universal ways of wireless communication were invented"
The questions took other colors after I finished explaining my work. They asked me about my daily life routine, my academic background and all the other questions that seemed to me, was the normal procedure of any reporter when they are left of after they used all the good questions but still are hoping to find something interesting enough on the life of the interviewed.

第４章

The next day there was a pile of newspapers on the building next to the desk of Kobayashi and by the side of a big plant that seems to be surviving an eternity still never been outside, receiving real sun or real rain. The newspapers decided to make a special note from my interview the day before. I took one and wait for the elevator where I met other researchers that greet me for the prize and naturally, I thank them back because, it was true, thanks to all of them I liked to work in this place. When I arrived to the lab there were a few of the researchers inside. Not too many of them have their Saturday's mornings free to wander on the institute building. Only the ones who deal with daily experiments are the ones always you'll find inside on weekend. While I was thinking on my own schedule, I notice that Darko was in his computer looking at it quizzically while I took some coffee from the electric espresso coffee maker we proudly

display next to the door. I said “good Moring” and just like if someone have just awoke from a dream, he answered back.
“Good morning professor” he said in a hurry, then added “Why you like that much the messenger pigeon story, I have heard from you at least ten times, but none of them relate to each other”
“I didn’t expect you were reading Japanese that quickly, I am really proud of you Darko” I said with a smile, he smiled back and reply.
“I couldn’t read your press conference from the newspaper, I used a website translator and tried to find some meaning on your answers. It’s really hard still to try to understand a translated text. You have to put yourself in a weird position, think like a baby, and find meaning on the wrong translated phrases” he said with a face that imitates someone in pain.
“In the end you said something about messages and pigeons, that is why I’m asking”
I took a seat near him and looked at the other two students immersed on their notes, isolated from the world with their big headphones. Since we talked too much inside the lab, we encourage everyone working inside it to buy some noise canceling headphones or to stand the continuous talk of the other researchers.
“I like analogies” I said, took a sip of my burning coffee and continued.
“It may not work all the times, but the analogy of the pigeon carrying a message makes his job on staying on the listeners mind as a good example” I tried to explain, letting my of English proficiency back at my home.
“you know, I’ve always been captivated on how much analogies and metaphors play an important role in our culture, it doesn’t matter if it comes from dragons on Tolkien’s books written I don’t know how many years ago, or from yellow butterflies that Gabriel Garcia Marquez

described in one of his books”
“why you like the pigeons so much then?” he asked again.
“when I was young, I was amazed that before the discovery of the DNA’s molecule structure by Watson & Crick, other investigators already knew that DNA was the responsible for all the information that’s carried by life. DNA or RNA called in this case what you want, was the secret on how traits could be transmitted from each generation to another. You now see, this as a common and natural thing to believe these days, but I wondered what does this meant to the first scientist that came with the idea at the beginning, ‘there is a continuous message or code, inside life’ I thought to my self in those days that there are always secret messages hidden in life, encrypted messages that we have to decode.
When I use the analogy of the pigeons, most of the times I want the people to feel that life is like an encrypted code that is carried inside our cells, our beings. It might not be a correct use of the example, but when I was young, this was the only simple analogy I could came up with”
I made a pause.
“Do you smoke? Darko”
“If we can get a shisha up here to the lab that would be a yes, professor”
“How far is the dormitory from the building?”

When I was telling him this I got flashbacks of my university life. Not a crazy one, but a calmed one. Going to school everyday, even the holidays I participated in the club activities. Taking always my express train from the suburbs in the south near Yokohama. I always felt lucky that I only have to take one train from my home to the center of Tokyo. This allowed me to read for forty minutes every day without any interruption on every morning, and forty minutes on the afternoon night. When I finished university I counted my collection of fiction and sci-fi book.

A incomplete, nevertheless amazing collection that enclosed from Isaac Asimov all the way down to Dracula or classics such as Julio Verne.

After twenty minutes, Darko brought the shisha to the building, there was no other soul except us in the floor.
“I like the example of the pigeons a lot, I can’t remember where or when was the fist time I see it or start using it as my favorite statement to explain everything around me. In the same way that Albert Einstein said ‘god doesn’t like to play the dice’, I think that the pigeons and the messages are the best way to describe that we are using living things to carry our messages. Now of course we are using cells or bacteria but I think that the general public can get better the idea of what my investigation consist of if I show them this example”

Every time we got some special guest from another country and we want to go outside with the laboratory staff to eat or drink something as the Japanese tradition call us to do (nomikai), Darko will come with us. He is not especially talkative , but he can ask a lot of questions and take from you all the information he wants to know, this keeps the conversation rolling from topic to topic. Our lab in the theoretical department doesn’t have many foreign investigators, Darko was the only one with us by the time, and before him, it have passed two years since the previous researcher, a girl from Germany, went back to her country.
I said to him that we have some plans to celebrate a little that night on a restaurant since we got the excuse of having received an award. I didn’t want to have a big party now so I invited him and also the other two professors. Professor Sumi and another professor from the Genetics lab that always helped me reviewing my English on the papers I wrote. A tall, and blonde chemist from the

Netherlands called Mark Rod. We picked a restaurant in the street that pass through the front entrance of our building. The street is flooded with restaurants of all kind. I have been working in this lab for years and still haven't tried more than a quarter of the restaurants here. I have the impression that every three months there's a new ramen shop or a yakiniku corner opened in a place I haven't notice before. Instead of killing ourselves trying to decide what we wanted to eat on that night, I picked by myself what we were going to eat. I chose the first takoyaki restaurant that flagged more than threw stars on my mobile phone app and after I was sure they will also serve beer we start walking on that direction.

I got the opportunity to make a short scape from university and go to Sweden when I was finishing my master degree. I was four months working on the Karolinska Institutet. Four months I believe changed me forever. It was the first time I actually went outside of Japan. I found myself surrounded by people of all around the world and all kind of cultures. In the beginning I was scared that maybe Sweden was not going to be a safe country after coming from a place like Japan, after two months of living and a couple of parties in some local bars around the city, I was able to remove from my head all those preconceived judgments and open my mind after what I recognized as my first cultural shock. I open so much to other cultures in those few months, I worn an Indian sherwani to the grocery shop, I start eating pancakes at breakfast, playing Go-Stop with my Korean friends.

That night at the takoyaki shop with Sumi, Mark and Darko, the conversation ran as always. Sumi didn't spoke much English, he always excused himself for all the mistakes he commits while he talks, the truth is I gave up trying to find one single mistake every time we spoke.

“let me *recount* you why are he here today” said Mark, obviously making a pun over the published paper.
He raised his glass and looked at me in the eyes while he said this words.
“Let there always be time for science, to grow more in wisdom. And let there be enough luck for us to see that time coming. Kanpai!”
“Kanpai!” said the four of us.
We ate and talked about some changes that, not in the far future, the directors of the institute may be taking and how this would affect for better the fate of our laboratories.
When suddenly out of nowhere Sumi asked.
“hey Kawabata, what are you going to do with the monetary prize that they are going to give you with the Japan prize?”
“I really don’t know, I don’t have an idea right now, don’t know if I will invest it on more experiments. I guess now I have everything I need. I don’t need a super-cooler or a laser microscope like most of other scientist would be desperate to have. I think at most, I am going to change my old Honda civic”
Professor Mark laughed loud.
“I know what I would do if I were the one who is receiving all that money” and he opened his eyes as wide as he could.
“I would buy a lot of gold. You never know when you would need a good amount of gold for, maybe experiments or maybe a nice gift to a pretty lady” he said obviously joking.
Everyone seemed to like the Joke.
“which car would you buy, if you do?” Sumi asked.
“I would go to the extremities, the new Nissan GTR, my dream since high school” I said with a smile but neither Mark or Darko looked interested on my automobile preferences.
“Did you know what Nissan means?” I asked them while

stretching my arm across the table, grab a napkin and took the pen from my pocked. I wrote the Japanese Kanji for Nissan.

日産

“The first symbol means Sun, day and in this case ‘Japan’, the second one means production or manufacture” I tried to explain them, obviously mainly to Darko, because I knew that Mark already recognize a lot of Japanese symbols.
“If you combine this two symbols, the meaning of Nissan becomes ‘made in Japan’, not so many people in the world know about this things” I said. “You see, it’s like a hidden message that most of the world doesn’t understand because they don’t understand Japanese” I said with a smile while looking at Darko’s reaction then I took a sip of my beer.
We ordered a couple more of beer rounds and finished by ten in the night the nomikai.