

“Japan: A New Age” by Tasogarenin (黄昏人)

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Chapter 3: Government Negotiations

On Tuesday at 11:30am, Yamato and Makimura took a monorail from Haneda airport to Hamamatsu city, had a light meal at Tokyo station, and took the subway to the Kasumi underground station.

At 1:55 pm they arrived at the reception desk of METI (*), where Yamato presented his business card to the receptionist. “Hello, I’m Yamato from Konan College. I have an appointment with Director Tanaka at 2 pm today.”

*(* METI: Ministry of Economy, Trade and Industry)*

“Yes, we have been expecting you. Please wait a moment. Someone will come for you soon.”

After waiting about five minutes on the sofa in the reception area, they were called up by the receptionist and led by a woman onto an elevator. They got off at the 8th floor, walked a short distance to a door that said “Director’s office,” and opened it after knocking. “Mr. Yamato and Mr. Makimura are here to see you,” announced the woman.

“Thanks. You can leave now.”

There waited Director Tanaka, a well-built man with a slightly receding hairline who looked around 50. “Mr. Yamato, it’s been a while,” he first greeted Yamato and then turned to face Makimura. “Mr. Makimura, I really appreciate you going through all the trouble coming see me today to discuss this important matter.”

He looked at both men and spoke again, “Initially, I was considering inviting a few people from a related department, but after I read your email I decided it would be best to first discuss things with just us three to prevent any information leaking.”

The two men sat down on a sofa directly across from the Director, who immediately kicked off the discussion.

“I’ve went through your email. About the paper in question, I showed it to an expert on my staff who said it was a groundbreaking achievement, and completely proves the feasibility of cold fusion. However, the same person also said the operating conditions for the process were not specified and further research would be required in that area. By the way, I noticed that in Mr. Yamato’s email, he said the operating conditions *had* been determined.”

Makimura responded. "Yes, the operating conditions have been determined, and as far as I can tell they are correct. So I believe all that is remaining is actual experiments which validate them."

"Of course, some input of energy will be required to cause the reaction to begin. How have the energy balance calculations turned out?"

"We will be utilizing heat and electromagnetic waves for the input energy, however because the generation process works with electricity, energy will be injected in the form of electricity. For the roughly hour-long excitation stage before the chain reaction begins, the amount of energy expended will be roughly 10 times compared to when the system is in steady state. Although the electrical consumption during the excitation stage is actually higher than the stage where the chain reaction occurs, this is only 10-20% of the energy produced. Therefore, as long as the chain reaction continues for enough time, the input energy will be only 1-2% of the total energy produced.

The key here is that the energy obtained from this reaction is not in the form of heat but rather electrical current, making it a truly ideal reaction."

"What I am hearing now seems to be against established common sense, and frankly sounds too good to be true. Do both of you honestly believe the conclusions of this paper?"

Yamato and Makimura nodded to each other. "Speaking as experts in this field of research, we have high confidence it is correct."

The Director raised another question. "The realization of this technology is a great opportunity for our country, and I would like to see it happen as soon as possible. However, how much time and what sort of funding will be required to produce an actual working system?"

Yamato answered this question.

"Making some assumptions, I held several hearings and tried to roughly calculate the costs required. In this scenario, we would not be able to do any bench testing, and would be creating at least a 100 MW device. Its size would probably be around 5 meters wide by 10 meters long. Construction would likely require six months for design, ordering parts during that period whenever possible, and another six months for manufacture and assembly, resulting in a total of one year. Construction costs, assuming four researchers on the project from start to finish, would take somewhere on the order of \$10-20 million."

"Creating a 100 MW nuclear fusion generator prototype in one year for \$10-20 million is extremely fast and surprisingly inexpensive. If this became a reality, due to a low fuel cost the resultant cost to generate electricity would also drop dramatically. Most importantly, as the only fuel utilized is ordinary, non-isotope hydrogen, there would no longer be any problems with fuel shortages."

After Director Tanaka finished speaking, he crossed his arms and paused to contemplate for a moment, eyes downcast.

“By the way, I heard that the author of the key research paper was an elementary school student...”

“Yes, that boy is truly a genius. However, I feel that his participation on that paper is probably only a small part of what he is capable of,” Yamato responded.

“Are you saying that we can expect similar discoveries in the future from him?”

Yamato responded again to the Director’s query.

“Yes, I believe so. However, there is a need to keep his abilities hidden until he matures a little more. Furthermore, if we are going to expect similar discoveries from him, we must place him in an environment with sufficient intellectual stimuli. It appears that he excels especially at using information he has learned on his own, and from others around him, and taking that in new directions.”

“Understood. I’ll ask around and see what I can do. However, I’ll only tell the whole story about our genius boy to those who really need to know.

In any case, regarding what you are calling the...was it *nuclear fusion generator*? Would you be able to begin preparing the initial draft of the development proposal, including construction of the prototype? I will send someone from my group to your college very soon to assist with that,” Director Tanaka said to end the discussion.

The next day, as Makimura was pondering how to begin writing up the development proposal mentioned by the Director, he got a call from Yamato.

“I just heard from Director Tanaka that someone from his group has been dispatched this morning to come visit us. They are supposed to be arrive at the lab at 1 pm today.”

“What? Already?!”

“Isn’t it perfect timing? Let’s have this person help organize the proposal. By the way, I don’t think we can handle this project with just the staff from our lab, so it will be necessary to get some help from the Engineering Department. I’ll talk to Engineering Director Urase about this. Also, I have to meet a bunch of people this afternoon so I won’t be available then, although I am free in the evening.”

After hanging up the phone, Makimura thought about the situation.

Everything is moving much faster than I expected.

As we move deeper into this project, we'll probably need to get directly involved in areas outside of our expertise in order to realize this system. If we try to continue our existing routines unchanged (including college classes), sooner or later we'll burn ourselves out and cause trouble for the project.

Maybe we can utilize the graduate students to help out. Sato is trustworthy and is still in the first year of his Doctorate program, so pausing his thesis at this point shouldn't cause him too much pain. And being able to participate on such a big project should do great things for his future.

He opened the door to the graduate room. "Sato, are you here? Hey, do you mind stopping by for a minute?" and invited graduate student Masato Sato into his office.

Upon Makimura's desk was the edited version of the paper that he had given to Director Tanaka. When Sato sat down in the front of his office, Makimura handed the paper to him. "Sato, you are familiar with the research paper I posted on my website the other day, right?" Sato nodded.

"Actually, I was sent a paper as a response to that. What you have in your hands now is a simplified version of that paper which I prepared.

As we are short on time, I'll let you read it later on your own, but the original paper I received proves the existence of so-called cold fusion that I have been pursuing and even details the necessary operating conditions of the reaction. I personally believe the paper's results are correct. Dr. Yamato, the head of the department of physics, agrees with my conclusion. The practical application of these ideas has already been set in motion. I cannot disclose the details yet, but there is a possibility this will be realized within a year's time. However, constructing an actual system that achieves cold fusion is far out of our area of expertise, and it is clear that we can't do this without assistance. I'd like to request your help on this project because I won't be able to manage everything by myself. This would mean that for the time being we put a hold on your thesis, and you might even have to shift focus away from your classes. However, as you can imagine, this will be a monumental project that will go down in history. What do you think?"

Sato's answer was immediate. "Sir, I'd be honored! I'm so happy you asked. I'll do everything in my power to help."

"That's great. For now, I'd like you to go through this paper and fully understand it. And one more thing..."

"Makimura withdrew the original, unmodified paper from his desk drawer. "You can freely show the edited version I gave you to other graduate students. But I want you to keep the original absolutely secret. Once you read it you'll understand why.

Also, today at 1 pm someone from METI will be visiting. They'll probably come to the graduate lab, so I'd like you to let them in for me."

“OK,” said Sato, visibly eager to read the paper. “I’ll start by reading it through,” he said and left Makimura’s office.

In the early afternoon there was a knock on the door of Makimura’s office, and Sato poked his head in, “Sir, Mrs. Hidaka is here to see you.”

“Thanks. Let her in.”

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“Excuse me,” said the guest’s voice, and a petite woman in her 30s entered the office wearing a formal gray suit. She was attractive, but her stern expression spoke business.

“I am Naomi Hidaka, sent on assignment by Director Tanaka.”

“Thanks for making the trip here. It must have been rough to come like this on short notice. I imagine you had little time to prepare.”

“Actually, my parents live in Konan city. I think the Director took that into consideration when he chose me.”

“Is that so? Whereabout do they live?” asked Makimura.

“They live in the N area, about 15 minutes by car from here.”

“Excuse me for being abrupt, but what has the Director told you about this assignment?”

“He mentioned that you were working on the establishment of a theory related to a cold fusion reaction that directly generates electrical power, and that the operating factor has also been determined. This implies the actual creation of such a system should be possible, and my role is to provide assistance to further its practical application. The Director, taking into consideration the importance of this project, has raised this as a priority issue in the cabinet and is already in the process of making arrangements to request aid from several private companies. But until we create a formal proposal, we cannot communicate our needs to the Director’s superiors or to the government, so the drafting of this proposal is the first order of business,” Hidaka answered.

“I see. It appears you have been given sufficient information to get started. By the way, have you been told anything regarding this college as it relates to your assignment?”

“Of course, for all matters related to the proposal I will be relying on your guidance. With respect to practical application, I have been told you have someone else working with you, and

the Director is currently in negotiations with MEXT (*) in order to bring this person to Konan college.”

(* MEXT: Ministry of Education, Culture, Sports, Science and Technology)

“I see. Alright, let’s have a technical overview of this project.”

After they had spoken for a little over two hours Hidaka said, “I think I have a good general understanding now. However, the budget calculations are a bit tricky. We’ll want to get a private company involved soon to help estimate the actual costs.”

“At our college, we will also be requesting the help of several engineering departments: materials, mechanical, electrical and electronics engineering,” Makimura said.

“Yes...it might be a good idea to enlist their help, however if we get too many departments involved the project may get deadlocked with too many cooks in the kitchen, so we need to tread carefully. I’m going to stop by my organization’s Konan branch office now, but would you like me to arrange a dinner meeting somewhere so we can discuss further? The Director has set aside a budget for such expenses. By the way, I was told that Mr. Yamato isn’t available during the afternoon.”

“Yes, that sounds like a good idea since we will be spending a great deal of time together on this project. Apparently Mr. Yamato will be meeting with many people on campus today, but I think he is free this evening, so I’ll see what he thinks about meeting for dinner,” Makimura said.

“OK, I’ll call you to let you know the restaurant by 5 pm. How do you feel about meeting at 6 pm?”

“That time should be fine. I guess it will be on you, so thanks in advance.”

After Hidaka left, Makimura walked over to the graduate lab and called Sato again.
“Sato, did you read it yet?”

“Yes, I read it. It’s a pretty amazing paper. I didn’t think I’d get so excited over a paper like this. It is a significant leap from the paper you wrote,” Sato’s voice made it clear he wasn’t exaggerating.

Makimura smiled bitterly. “Yeah, as you probably guessed there is no way I could write that paper now. Or maybe I should say that being able to think and write like that really boggles the mind. Certainly, I was the one who thought of the original idea, and I understand that this idea was expanded upon. And just as you figured out, it is possible to trace the author’s thought process. But there are three places where he makes leaps of logic that are totally beyond me.”

“Who wrote that paper?” asked Sato.

“Since you’ll be working together with him soon, I’ll go ahead and tell you now. But you must keep it secret. Eventually others will find out, but we will need to keep things hidden as long as possible. The author is a 10-year-old elementary school student. He lives in Konan city.”

Sato stared at Makimura intently for a moment, then sighed.

“I somehow felt that might be the case, because I would have already been familiar with anyone past a certain age. Maybe this is just the tip of the iceberg of the boy’s abilities.”

Sato continued, “Sir, I’m very honored to be invited to work with you. However, I think it is going to be very challenging project. Would you consider adding second-year Masters student Aragaki? She is trustworthy, and as you know extremely capable.”

“Hmm...That might work,” Makimura hesitated. “But, let’s wait a little while first. The project has just begun, and there is the possibility that the entire research lab will join us. Also, you met Mrs. Hidaka, right? I will invite you to my meetings with her, at least the ones held on campus. For the time being, she’ll be tasked with drafting up the development proposal. In the future, we will also adding people from the engineering department, and I’d like you to help with coordination between departments.”

“Sounds good,” said Sato.

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