

Chapter 3

Memories of Prof. Kaoru Ishikawa

3.1 “You and I (*Kisama To Ore*)”: Our Days Together in the Navy and in Nissan Liquid Fuel

Tracing Destined Human Ties in Life

Masao Kogure

“*Kisama To Ore To Wa Doki No Sakura*[†]. *Onaji Niwa ni Saku...* (You and I are blossoms on the same cherry tree. We flower in the garden of the same...)”

When I was asked to write about my memories of you, the first thing that sprang to my mind was the line of cherry trees in the grounds of the naval artillery training school. Before I knew it, the words and melody of this military song were on my lips.

On May 30, 1939, both of us belonged to the group of a hundred officers who were given the commission as 2nd Short-term Engineering Officers of the Japanese Navy. For education and training, we were assigned to the naval artillery training school which was located in Yokosuka at the time. We were divided into groups of 14 or 15. I was in Group 3, you were in Group 5. Although belonging to these different sets, we ate at the same mess, lined up in the same military order and spent three months covered in sweat and tears learning gunnery and being drilled. We were not alongside each other in the practical training on board ship or when working at the arsenal. Still, I had the chance of often seeing or hearing about your exploits in heavy drinking in the evenings.

After coming out of military service, we only managed a few exchange of letters due to the busy lives we had to lead during the war. Soon after the end of the war, one day towards the end of 1946, I bumped into you carrying a basket on your back and a hoe in your hand, on a farm track in Tobitakyu, Chofu. You were just returning home

[†] “*Kisama To Ore To Wa Doki No Sakura*” is the first line of an Imperial Naval Academy song expressing the devotion of classmates to each other and their willingness to die for their country. The pronoun “*kisama*” (meaning “you” in Japanese) is a formal expression used by officers of the Imperial Japanese Navy addressing each other. Outside the Navy it was considered a very rough but friendly expression, therefore seldom used. Prof. Ishikawa favored the use of this word among friends.

from working in the fields. I was walking in search for some land, together with my wife with a baby on her back. So after several years of absence, we were able to renew our friendship. You told me that you were soon going to return to the University of Tokyo. I also had secured good prospects of rejoining Tokyo Institute of Technology. As well as celebrating our reunion, we pledged future cooperation with each other.

The third time I met you was three years later, in October 1949. It was the first day of the second monthly session of the 1st Quality Control Basic Course of the Union of Japanese Scientists and Engineers held on the 3rd floor of the former Osaka Shosen Building that was located in Yaesuguchi in those days. You had started lecturing for the course from this time, marking the beginning of your successful activities as the leader of QC in Japan. Ever since then, you extended to me your kindness and friendship over many years both in public and in private. Forty years passed so quickly like a dream.

On May 30, 1989, shortly after your departure into the other world, the “cherry blossoms” of the naval officer training school met at Suikokai to celebrate the 50th anniversary of receiving our commission. We prayed for the souls of the 36 deceased members including you. You had attended the officers’ reunion almost every year but why could you not make it for this 50th anniversary meeting? Why did you pass away so soon? I cannot but mourn your passing. I hereby end my short piece reminiscing about my encounters with Kaoru Ishikawa, remembering him in his active days and praying sincerely that his soul may rest in peace.

(Professor Emeritus, Tokyo Institute of Technology)

Kisama To Ore[†]

Tokushiro Ozato

On May 30, 1939 one hundred people including me, who had been recruited as the 2nd Short-term Engineering Officers of the Japanese Navy, assumed the post, received messages of Mr. Yonai, the then Minister of the Navy of Japan at the Ministry, signed the book in the Imperial Palace, and entered the Navy Gunnery School in Yokosuka for a three-month training.

The first strict order given to us by the instructor-in-chief at that particular moment was to use the words “*Kisama*” and “*Ore*” instead of “*Kimi*” and “*Boku*” used in the civilian world among our colleagues according to the tradition of the Navy. However, it

[†] Refer to the footnote of the previous page.

was not easy to change quickly because we had been using “*Kimi*” and “*Boku*” for more than 20 years. Therefore each team seemed to devise different ways to bring this change. The team No.4 that I belonged to adopt a penalty system. Person who made a mistake had to pay 10 sen fine each time. Finally the money heaped up to the about half height of 700cc bottle for the first month. Even more than 45 years after a defeated war, we still addressed each other “*Kisama*” and “*Ore*” without any hesitation at the annual reunion. It was my pleasure to have had Kaoru Ishikawa and Masao Kogure as my classmates.

In the Gunnery School, there was a so-called “landing day” once every week, on which Ishikawa would march into traditional Japanese restaurants accompanied by naughty boys of the Team No. 5. In those days, there were two restaurants almost dedicated to naval officers in Yokosuka: one named Komatsu, more commonly known as “Pine,” which was for senior officers; and the other named Uokatsu, known as “Fish,” which was for officers below the rank of lieutenant commanders according to the unwritten code. Ishikawa and his friends seemed to be regular customers of the Pine. In later years, we held a big party among old classmates inviting many former beauties at the Pine. Ishikawa surprised us by remembering all our names.

When we started introducing QC into our company around in 1960, I asked for his help for more than a few times. During the introductory period, I asked him to give a lecture to managers, supervisors, and those above, and at a later stage, to hold discussion meetings with corporate executives for inculcating ideas of QC into them. Several years later when Ishikawa and I had a drink after a visit at a new plant, a lecture meeting, and discussions with executives over dinner, he told me, “No matter how hard *Kisama* and other people promote QC, you would have little hope in winning the Deming Prize as long as that President remains in the office.” I remember this clearly as if it happened just recently.

(Former Executive Director, Chuo Hatsujo Co., Ltd)

Memories of Before and After the Pacific War

Kenji Suda

Ishikawa-san joined Nissan Chemical one year later than me, in 1939. He was assigned to the Ohji Laboratory, and was taking an active role in the preparation of the construction of Nissan Liquid Fuel (later became Daiichikagaku after World War II). I was also working at the same laboratory, but had no working relations with

Ishikawa-san. Now, more than 50 years later, what I can recall about Ishikawa-san is his frankness, a behavior so unlike that of sons of distinguished families, his good natured and enterprising personality, and the friendly chats we had on our way back home cultivated by Mr. Nagahisa Nanai, who was also working at the Ohji Laboratory, which took us from the back route to Asukayama. Within a year after that, Ishikawa-san became an Engineering Officer for the Navy. I did not have the chance to meet him again until during the last stages of the war, when I was posted to Nissan Liquid Fuel, and Ishikawa-san had retired the Navy. We both worked on low temperature carbonization of coal. Ishikawa-san was responsible for the construction of dry distillation furnace, and I was a furnace operator that worked day and night shifts. I was busy tending to the troubles that occurred frequently at the furnace, and had little opportunity to run into Ishikawa-san. We had the chance to work together supporting the startup of the furnace.



**At Nissan Chemical Ohji Laboratory: front row left is Mr. Kotaro,
the Head of Laboratory, in the center is Dr. Ishikawa.**

The trouble with dry distillation lay in the poor electric power situation during the late stages of the war and immediately after the war, blackouts caused by air raids and typhoons, and breakdown of carriers, a part of the furnace, for coals and semi cokes. The key indices for the operation of the dry distillation furnace were temperature and pressure of the main body. However how much we controlled the temperature, a stable catalysis of coal and heated gas could not be guaranteed. Nissan's 300 ton furnace, which was designed by the German company Lurgi, had attached a pair of ventilators to stabilize the temperature of heated gas, but they broke down easily due to high

temperature erosion. Employees from Lurgi were sent to guide the changing of the ventilators while the furnace was in operation, but this failed. Due to repeated breakdowns, the gas outlet was clogged, causing the temperature distribution to vary widely, which further deteriorated yield of low temperature tar and quality of semi cokes.

At that time, the most discussed topic with Ishikawa-san was the stable operation of the dry distillation furnace. I cannot help but think that Ishikawa-san's lifework originated from the stable operation of that unruly furnace.

Shortly after the war was over, Ishikawa-san returned to Tokyo to become an assistant professor at the Department of Engineering, the University of Tokyo. Later on when he came to Wakamatsu, he introduced to us Quality Control, a concept newly introduced in Japan. He suggested that this could be an effective tool that could be used in the operation of the dry distillation furnace. We immediately began to study quality control, and field engineers, began to study in a group using textbook which is the translated version of Mathematical Statistics by P. G. Hoel. However, our study did not reach the level that was applicable to the operation of the furnace.

About two years ago, I learned that quality control methods were applied to the trading company that my granddaughter used to work for, and was deeply moved by the fact that the sapling tree planted by Ishikawa-san had grown so much during the past forty years.

We had a chance to meet after a long time at Daiichikagaku Assembly. However, Ishikawa-san passed away one year after that. My state of mind was the same as that drawn in the last line of the poem by Ryokan, in which he expressed the loss of his best friend as “無限の桃花水を逐うて流る (the surface of the river is covered by peach flower petals, and the petals float down the river).”

(Former Managing Director, Nissan Liquid Fuel)

3.2 Prof. Ishikawa as a Friend, a Senior, a Boss and a Teacher

Thoughts about Dr. Kaoru Ishikawa

W. Edwards Deming

I became acquainted with Dr. Ishikawa around 1952. I often refer to his work on the sampling of iron ore. A shipload of iron ore comes into a harbor in Japan. How much iron is in the shipload?

Dr. Ishikawa and several men went to work on the problem. They contrived a new method for taking samples of iron ore from the shipload. He and his committee presented a report on 22 December 1955 at the Yawata Steel Company. The new method of sampling gave 10% less iron than the old method for some mines; 2% less for other mines. The new method was preferable on engineering grounds. In conclusion, Japanese steel companies have been paying too much for their iron.

The methods developed by Dr. Ishikawa's committee have become international standards for the sampling of bulk materials.

Dr. Ishikawa formed QC Circle all over Japan, and taught them how to contribute to improve methods.

He invited me a number of times to his home, where we had much fun and good food.

Dr. Ishikawa will be remembered and respected by many people, for all time, for his book and other contributions to management.

His father, Mr. Ichiro Ishikawa was a great man, unselfish, highly respected, head of the Federated Economic Societies. He was the first President of JUSE. He came to visit me in my home in Washington.

(Chairman Emeritus, Deming Prize Committee)

Memories of Prof. Ishikawa

Tetsuichi Asaka

Many memories spring up one after another from the forty years of long friendship with Professor Ishikawa. I only have a limited amount of space to write so I have attempted to select a few.

1. I visited the Nobeoka Plant of Asahi Kasei Corporation regarding quality assurance of skeins of rayon (Bemberg). This was my very first experience with Professor Ishikawa, spending time on the factory actual work place, holding discussions over four days, confined throughout to the workplace. From eight in the morning to ten or eleven at night, discussions were forced upon us. For the evening meal, we had a special provision of one 180 ml bottle of Japanese *Sake* each. However, outside the sliding door, a new team for the next discussion was already waiting their turn. We were too busy to relax and enjoy our meal.

Two professors had come from Tokyo, so the factory wanted to make the most use of this opportunity. We, young people, devoted ourselves to this discussion during day

and night. However, fourteen to fifteen hours of discussions every day took their toll. We had completely ruined our throats by the end and we almost lost our voices. Therefore, we had to show by a gesture when we went back to Osaka from Oita by the Beppu Line. This was one of the fond memories we two shared (Early days of SQC).

2. Professor Ishikawa strongly recommended that I should play golf and pachinko and fly on airplanes. I bought golf clubs but I never played to the end. As for pachinko, when we visited a company in Hiroshima together, he finally made me come with him to play. The following day, the whole factory got to hear about it and I was rather put out to see all the faces grinning at me. Since then, I never improved so I gave up after a while and stopped playing. As for flying, I am truly grateful of its convenience so I use airplanes a lot nowadays.

Professor Ishikawa used these anecdotes in the speech he made at the celebration party for my decoration at the time of my retirement.

3. 1987 was the 30th anniversary of the establishment of the Union of Japanese Scientists and Engineers' Karuizawa Course (QC Seminar for Executives). I said to Professor Ishikawa that we should retire from the frontline to mark the three decades and leave our successors to do the work. He replied "You, you carry on with me a little bit longer," and would not say yes to my suggestion. Professor Ishikawa's voice had much hoarse from several years before this and he could only manage about three hours of lecturing. He himself used to say that it was not his voice but the microphone that he was using that was at fault. He was very stubborn and was very reluctant to listen to me.

4. He was too aware of the fact that he was the originator of QC Circle activities as recognized by all. He pushed himself very hard despite his busy schedule to attend the JUSE cruising seminar, regional meetings and lectures. He lectured, encouraged people, and created the backbone of the QC Circle activities that are unparalleled in the world. At one point, people misconstrued QC Circle activities to be the same as TQC. Professor Ishikawa was very worried about this. He used to stress the point in top management seminars that TQC is business management itself and you must not misunderstand QC Circle activities.

5. For fifteen years, Professor Ishikawa worked very hard as organizing committee member for the QC Symposium held in Hakone. He would gather his kindred spirits in the evenings and would debate and drink till 4 a.m. That was his "habit" but I had agreed with others to stop at midnight and go to our own rooms. However, it seems that people who called themselves fans went to the professor's room and kept on drinking there.

He truly loved the people who worked under him and he continued to state his own

beliefs to them.

6. On April 1, 1989, in the banquet hosted by JSO, Japan, I saw a young researcher who had belonged to Professor Ishikawa's research group encouraging him to drink. I reproached the young man but the professor continued to drink with the young man as if to protect him.

Two weeks later, his condition took a sudden turn for the worse and he passed away on April 16.

For the QC sector, for Japan and the world, and for businesses, for his kindred spirits, Professor Ishikawa worked selflessly for all echelons of people. He burned himself out and went to heaven. I strongly feel that this is so. Our responsibility now is to work hard so that we can repay him even only partly for his great endeavor.

(Professor Emeritus, the University of Tokyo)

The Master and I

Masumasa Imaizumi

I first met Professor Ishikawa in 1945, when almost all of Tokyo had been transformed into a charred wilderness after the U.S. military stepped up its air raids on the capital. At the time, I was a third-year university student studying the manufacture of aviation gasoline via the hydrogenation of low-temperature tar obtained from the dry distillation of coal, but it was an era ill-suited to research, as we were severely lacking in both material and equipment. Moreover, there were frequent power cuts and even the water supply would be cut off on occasion. The war eventually came to an end on August 15 and our graduation ceremony took place the very next month, but as I had been unsuccessful in finding employment, I stayed on to attend graduate school. In those days, there was a special research student system at graduate schools, enabling graduate students to receive a monthly allowance for five years. I became the very first graduate student to be affiliated to Professor Ishikawa's laboratory. Subsequently, Professor Ishikawa became involved in research into coal briquettes, with the aim of using Japanese coal to make high-quality coke for use in iron-making by turning the coal into briquettes and then subjecting them to dry distillation. I, on the other hand, was studying the structure of substances created via the liquid phase oxidation of coal, in order to utilize coal more effectively. However, neither of us made any progress whatsoever. One day, a book about the design of experiments using statistical methods was published, so I lost no time in buying and reading it, but I did not understand any

word. Accordingly, we decided to go back and study statistics, so we launched a seminar with the participation of students and researchers from various companies who came to Professor Ishikawa's office. This was in 1948.

The Union of Japanese Scientists and Engineers (JUSE) subsequently launched its BC (Quality Control Basic Course), in which Professor Ishikawa participated as a lecturer and I as a note taker. That was the Professor's and my first encounter with QC. In 1951, I successfully completed graduate school and joined NKK, spending five years in the Coke Division at the Kawasaki Steel works. In 1955, the Quality Control Division was first established and I was appointed to a section manager post within the division. Then, in 1959, the Standards Division was established at head office to promote QC throughout the company and I was appointed its director, spending 20 years in the post. The Standards Division gradually expanded over this period, as did our scope of operations. Even after moving to NKK, I would still see the Professor on occasion, as he provided guidance at the committee meetings and other events in which I was involved almost every night of the week, such as the QC seminars organized by JUSE and the Japanese Standards Association, seminars on sampling, various JIS (Japan Industrial Standard) committees and seminars, Quality Month, QC conferences, creating and developing QC Circle activities, ISO (International Organization for Standardization) Technical Committee and Council meetings, the International Academy for Quality (IAQ) and international QC conferences, and meetings of the editorial committees of *Hinshitsu Kanri* (Statistical Quality Control) and *Genba To QC-magazine*.

For 34 years from 1951, the Professor spent his days in academia, while I spent mine in the corporate world, but in 1980, I was fortunate enough to be hired by Musashi Institute of Technology and was able to work closely with him again. At the time, the Professor was in charge of the whole of the Company-Wide Quality Control subject in the Department of Industrial Engineering and lectured to students from throughout the university. In the graduate school, the Professor used his book *What is Total Quality Control? The Japanese Way*, which one could describe as his life's work; I now teach this subject and still use the same book. Professor Ishikawa's books are wordy, however various facts exist behind each word. This is because there are many places in which a single line is backed up by dozens of pages of information and data. Accordingly, whenever a query arose in discussions with my students, I would always go straight to the Professor to ask for his thoughts. Alas, I shall no longer be able to do so. Having been fortunate enough to benefit from the Professor's guidance almost throughout my 6 years at university, 30 years at NKK, and 8 years at Musashi Institute of Technology, I

ought to know quite a lot of information and the facts behind it. I believe that my duty now is to pass all of this on to the next generation.

There is a group called QCG, which was formed by those involved in the field of QC. It stands for “QC Golf” and is a private contest for academics and business people involved in QC. The group was set up by three people and actually began when I started to teach golf to Professor Ishikawa. Consequently, my membership number is No.1 and Professor Ishikawa’s was No.2. As of 1989, there were 94 members and the Professor attended the 177th QCG on February 25 that year, although he was actually unable to play. He also attended the post-contest party, where he renewed many old friendships.

My overall impression of Professor Ishikawa throughout our long acquaintance is that he was always very energetic. Whenever I accompanied him on trips, during our free time he would either be reading, writing, sleeping, or drinking. He was an incredibly fast reader, and although not skilled in foreign languages, he would always motivate them to listen to him. I was amazed by his tremendous instinct for getting right to the heart of a person’s question. While he was strict towards his junior colleagues, one never felt beleaguered by him and he would always prepare a way out; he had the knack of motivating people, ensuring that they did not become discouraged.

He has left us a great deal of his collected wisdom, and some of these quotes I have experienced for myself at first hand, including “Use a subordinate and you’re half-fledged; use a superior and you’re full-fledged,” “TQC is just the practice of doing the things that you should do as a matter of course,” “Don’t remove the phenomenon; remove the cause. Then remove the root cause,” and “The enemy of new product development is always within the company.”

Without the Professor, I would not be the man I am today.

As well as praying that he will rest in peace, I will do my utmost—unworthy pupil that I am—to continue the Master’s mission. Please watch over me, Professor.

(Professor, Department of Management Engineering,
Musashi Institute of Technology[†])

[†] Musashi Institute of Technology (currently Tokyo City University).

As I Recall Him, with Deep Sorrow

Ms. Toshimi Fujimori

There is a saying in the West: no man is a hero to his valet. They say that even Napoleon was no exception to this, but Professor Ishikawa certainly was. I believe that everyone who came into close contact with him—from secretaries and research assistants upward—felt this way.

I would like to talk about my impressions of Professor Ishikawa just the way I recall him from my time as a research assistant in his office between 1954 and 1976.

1. A bundle of energy

Apparently, the sole condition that the Professor imposed when he was appointed President of Musashi Institute of Technology was that he must attend international conferences on QC, and he certainly did continue to be a globetrotter, attending events in Europe, the USA, the Eastern bloc, and Asia, among others. His schedule frequently required superhuman levels of stamina and it was not unusual for his wife to meet him at Narita off a flight from Europe, for example, just to hand over a change of clothes before he boarded the next flight to China, and so on. I believe that the source of this energy was his passion for QC, but when at the university, he also routinely ate twice as much for lunch as anyone else. He would always have two portions of soba noodles. One might be soba with tempura and the other simply cold soba with dipping sauce.

2. Someone who was happy to entrust work to his subordinates

They say that there are generally two types of manager at companies: those who use their own abilities as the benchmark and ceaselessly scold their subordinates, and those who use their subordinates' own abilities as the benchmark and are happy as long as they meet that standard. The Professor was the latter type, through and through. When he went on business trips overseas, he would sometimes ask me—a mere research assistant—to stand in for him as a substitute lecturer. If someone trusts you to do something, you have to study as hard as you can to live up to that trust. I believe that this is the reason why all of the Professor's subordinates demonstrated such tremendous progress. In my view, everything I have today is thanks to the fact that I was Professor Ishikawa's research assistant.

3. Seminars and get-togethers

During seminars, he would frequently surprise us all by asking an extremely pertinent question when it had looked as though he was asleep. On the other hand, when out drinking with the students at various get-togethers, he would address us in a familiar manner, like an affectionate older brother.

4. Our final parting

On January 5, 1989, I went to visit the Professor at his sickbed and he said to me, “I can hardly believe that I have this illness...” It was the first and last time that I ever heard this ever-cheerful and energetic man complain.

May his soul rest in peace.

(Professor, Faculty of Economics, Nagasaki University)

Lessons Learned from the Professor

Hitoshi Kume

It was in the fall of 1986 when I received instructions from the secretariat of the Faculty of Engineering, the University of Tokyo, to prepare the application of Prof. Ishikawa for decoration. I started the preparation, getting the information from the Secretariat which documents need preparing, and requesting Prof. Ishikawa to make the necessary documents ready. The most important task that I had to do was to prepare the record of his achievements. With cooperation from a large number of people, I made all efforts to carry out the task in the end of the year 1986 and on the New Year's days of 1987.

In the process of preparing the record of his achievements, I was amazed and impressed anew by the significance of his achievements. I was very impressed that he, one of the great leaders, who devoted themselves to the reconstruction of Japan after World War II, was just here.

Prof. Ishikawa did not often discuss a word itself. In other words, he did not frequently discuss what is TQC or what is quality control. He practiced what an enterprise needed, what Japan needed, and furthermore what the world needed. He showed us that quality control should give priority to practice not over theory.

It was in 1959 when I first took his lesson. After that, I thought I didn't get any detailed instructions from him like I should do this or I should do that. I am probably insensitive that he did give me instructions, but perhaps I was too naive to notice. But I think that preparing the record of his achievements for decoration told me his guidance clearly, what is quality control or what should I do. I was lucky to have him as my supervisor and truly appreciate a fateful encounter with him.

The development of quality control in Japan owes quite a lot to his firm belief in quality control, and his strong, indomitable and disliking to lose spiritual strength to

promote it. We need to sincerely learn these from him, but his excellent personality sometimes appeared as obstinacy and stubbornness in everyday life outside of the study, causing problems for others. I think I will tell you an episode in which I was also involved.

When I was a graduate school student, members of the Ishikawa Laboratory used to go on a hiking trip every autumn. One year, we planned to climb Mt. Takamatsuyama on the Miura Peninsula, with Mr. Takamatsu, who currently works for Showa Denko K.K., serving as the organizer. On such an occasion, Prof. Ishikawa was always nicely and appropriately dressed with a backpack and mountaineering boots. But on this particular day, he was in bad shape. He had extremely drunk the previous day. After climbing uphill for about an hour, he got out of breath, gradually fell behind and became the last in the group. I was thinking that we would take a brief rest at the next viewpoint, but suddenly, he ordered us to stop. He would never say: "I am tired. Let's take a short break." Instead, he said, "I am going to eat a mandarin orange. So, just wait here for a while," and sat down by the roadside. He took the fruit out of his backpack and took his time eating it. For the next 30 minutes, we students kept standing on the mountain trail, waiting for him to finish.

Prof. Ishikawa was a heavy drinker of *Sake*. Some even called him a "*shusen* (literally, *Sake*-loving mountain hermit)." After he retired from the University of Tokyo, he fell sick and was hospitalized in the University of Tokyo Hospital. Mr. Kawai, then chairman of Komatsu Ltd. was worried about his health and told his fellows to find ways to prevent Prof. Ishikawa from drinking. I totally agreed with what he said and established the "Group for the Reduction of Prof. Ishikawa's *Sake* Quantity," which was totally failed. I asked a certain senior of our group to be a chairman of the group, but he himself was a heavy drinker. This was my mistake. However it would never have worked if I had selected the right person.

A little over a year before his death, he had bowel surgery in St. Luke's International Hospital. But his recovery from the surgery was not smooth. I am afraid that he suffered from a pain a lot, but he never complained. He was in a poor condition especially after his receipt of the decoration, and everyone thought that it would be impossible to hold a party to celebrate his decoration. Mrs. Ishikawa also thought it would be better not to hold the party, and so we suggested a cancellation to him, but he would not hear of it. He only kept saying to go ahead with the plan following the schedule. We asked him to stay in the hospital until the day of the party to get fully rested and recover physically. He listened me this time. The party was a big success thanks to the cooperation from many, and was over without any problem, Prof. Ishikawa

gave the speech from the stage. Although he must have been very sick, as if he were a great actor, even no signs of sickness. Based on his many years of experience in giving lectures, Prof. Ishikawa gave an impressive speech, concluding it by throwing cold water on the Ministry of International Trade and Industry (current Ministry of Economy, Trade and Industry) and the Ministry of Education, Science and Culture (current Ministry of Education, Culture, Sports, Science and Technology), which was just like him.

(Professor, Department of Reaction Chemistry,
Faculty of Engineering, the University of Tokyo)

Professor Took Care of an Unpromising Student

Noriaki Kano

I was amongst the students under Prof. Ishikawa's supervision for seven and a half years, from the time I was a senior of the undergraduate course until I finished the Doctorate course. Such a long studentship was due to my being a so-called "unpromising" student. During those days, I was much obliged to him. One of the most difficult things for a professor is how well he/she vitalizes the unpromising students and makes them understand their unknown capabilities to gain self-confidence. On this point, Prof. Ishikawa had much patience and listened to his students carefully. He always encouraged us by picking up some good points he found out when we were faced with difficulties. When we reported to him triumphantly, he always pointed out our weakness in logical thinking, investigation, and our limitation in the application of a certain method. Even when we reached interesting results, he never praised us in a straightforward way. Instead, he took those opportunities to utilize the results in some way; he advised editors of a magazine to ask us for our contribution; he recommended us to be a member of a certain research group related to the results; he introduced us to a company where our studies could be applied.

In addition to my school days, I was also much obliged to him for the kind advice he gave me outside the university, at drinking sessions after meetings or on business trips. He was a so-called Mr. Preacher. In fact, he loved to preach to us while drinking whiskey and we felt something was missing when he did not preach. Drinking with him was kind of synonymous with "being preached by him." One of the most impressive sermons for me went as follows:

It was mid-night at the inn of Kagoshima in 1972, when I attended the audit of a factory with him. I was scolded by him for misleading a company at Tokyo, where I was

involved as a counselor for two years under his supervision. I made an excuse to him, “I did the best I could.” Then I was scolded much more by him; “I never said ‘do your best’, but ‘do it well’.” I was so shocked by this, because I had been told until that day to focus on process rather than the results and success would follow. It took me a long time to understand what he really wanted to teach me. He metaphorically pointed out my mistake in “process control for the sake of process control” rather than “process control for the sake of good effect.”

I had the good luck to travel with him on business trips to several countries such as Germany, Italy, Iran, Korea, Malaysia, Netherlands, Sweden, Taiwan, and U.K. Even as a compliment, no one could praise his English lectures for their fluency. His weak point seemed especially to be in comprehending English. During the question and answer sessions, Prof. Ishikawa seemed not to comprehend what a person was asking but he estimated the question based on the words sampled that he could pick up. Since he was a leading authority on “sampling,” he seemed also to know how to apply “sampling” to comprehension. However, he was able to adapt so well that he grasped the meaning of the question and was able to answer it perfectly after exchanging a short conversation with the questioner. His lecture took the approach of touching the audience’s heart rather than their heads by presenting many practical cases with plain explanations. This fascinated them and with his personality he was able to bring them along at his own pace. A good example is from his lecture for the Iranian top management. “I do not know how to make a production manager have a good understanding of the process concept,” was one of the questions from a vice president. He answered, “You have the power to appoint and dismiss him. If so, you can fire him if he has no ears to listen to you. Of course, we cannot do so in Japan. However you can do it because you are in Iran, can’t you?” The participants gave him loud applause.

I was so surprised to see a pile of newspaper clippings when I started dismantling his den of his house at the request of Mrs. Keiko Ishikawa after his death. Most of the clippings were concerning overseas affairs and were orderly arranged country by country. Every one of his generation may have faced the challenge of collecting cuttings of news and articles of newspapers that could be of use later when needed. Let’s think of the process for preparing and arranging the useful cuttings from the newspapers briefly:

1. mark the article, in which you are interested, with the date, the press, and classification category.
2. cut it out
3. keep it by classified category
4. make reference to it when needed

The above complicated process makes him/her give up collecting. It was well known that Prof. Ishikawa read through every nook and corner of the newspapers, from the cover to the last page. However, how many of us know that he made such a collection of the cuttings after his reading. I was frequently impressed by his broad knowledge, including his knowledge of political and economic affairs. In the countries we visited together, even when it was his first trip to the country. He might have developed the information through these cuttings.

Every January, he used to invite his students to his home for New Year home party, where he and his family heartily welcomed us. Once, after learning Prof. Ishikawa got married to Mrs. Keiko Ishikawa by arrangement, we asked the impolite question how many girls he interviewed for marriage before encountering her. He answered that her picture was the 52nd at his popularity with girls. Then I asked Mrs. Ishikawa a rude question: "Would you like to say anything about this?" She answered calmly that she didn't care at all, because his picture came to her after the 52nd. I thought that he lorded over his wife. However, Mrs. Ishikawa was probably a step ahead of him.

Among the several remembrances I have one thing to regret. I forcefully opposed him when we had the campus strife at the University of Tokyo at the end of 1970s. At that time, most of the professors were probably preparing to flee, but Prof. Ishikawa insisted on giving his opinion without any apology during the meetings with the students. The students appealed to Prof. Ishikawa's opinion by beating the desk, however Prof. Ishikawa ignored them and kept his speech. I have worse to tell. I frequently challenged him even at his seminar. I was in my third year of the doctoral course and was the most senior student in his seminar. In general, senior student calms down his juniors, but I acted as their instrument. He may have thought of me as a hopeless and outrageous student. But he never made sarcastic remarks or scolded me for the incidents afterwards.

Now I, a university professor, sometimes imagine what I would do if my graduate students, especially the students in the doctoral course did what I did in my school days. I am sure I would not be able to deal with them as well as Prof. Ishikawa did. When I look back upon my immature days, I wish I could sink through the floor. It was most generous of him to accept me without any criticism.

I cannot imagine how I might be without Prof. Ishikawa. I owe it to Prof. Ishikawa that I am now here.

(Professor, School of Engineering, Science University of Tokyo[†])

[†] Science University of Tokyo which was renamed and is today called Tokyo University of Science.

3.3 A Round-Table Talk “Memories of Prof. Ishikawa”

Attendee (Alphabetical Order):

Akao, Yoji Professor, Department of Management Science,

Faculty of Engineering, Tamagawa University

Ikezawa, Tatsuo Professor, Department of Management of Engineering,

School of Science and Engineering, Waseda University

Imaizumi, Masumasa Professor, Department of Management Engineering,

Musashi Institute of Technology

Ohba, Koichi Professor, Department of Management Science,

School of Engineering, Science University of Tokyo

Sugimoto, Tatsuo Board Member and Executive Advisor,

Former President, Daiwa Seiko

Ms. Mitsuaki, Haruko Managing Director, JUSE Press, Ltd.

Moderator:

Kume, Hitoshi Professor, Department of Reaction Chemistry,

Faculty of Engineering, the University of Tokyo

The Encounter with Dr. Ishikawa: Professor with “*Beranmee*” tone

KUME To begin with, I would like each of you to explain when you first met Dr. Ishikawa.

SUGIMOTO I was motivated to step on the journey of Quality Control, by listening to a lecture on Quality Control for communication device manufacturers, from the Allied Occupation forces, probably in 1947 or 1948, when I was in the Komukai Plant, Communication Device Division, Toshiba Corp. Since that time, we tried to apply Quality Control practically, into our operation, by holding study meetings on QC, among young engineers in the plant, as well as networking meetings on QC, with people in the other plants.

After a while, I was concerned about keeping the activities in too narrow a range and wanted to network with other industries. Then I participated in the QC Seminar at Kobiki-cho, conducted by the Japanese Standards Association, around 1955, if I remember it correctly. In the evening session, I still remember the sound

of a sneeze from the surroundings. It turned out to be Dr. Ishikawa, who was there as one of the lecturers.

At that time, lectures on Quality Control were ever-improving, resulting in flexible contents, where the half-dry textbook was used. I remember that Dr. Ishikawa made a lecture, not only based on theories, but also on actual production. As his lecture was made in “*Beranmee*” tone, which was rough, working-class language, I had an impression of a scary professor, at first sight.

On the other hand, I asked a lot of questions to him as I not only studied Quality Control in one way, but also experienced trying to apply it to actual production. Due to this interaction, I was invited to become an editorial committee member for *Hinshitsu Kanri* (Statistical Quality Control) magazine, when JUSE was located at Osaka Shosen Building, and was instructed to write a number of articles. I learned tremendously from it.

Don't make excuses. Think how you can make it.

MITSUAKI I joined JUSE in July, 1950, as an editorial member for *Hinshitsu Kanri* (Statistical Quality Control) magazine. As *Hinshitsu Kanri* (Statistical Quality Control) magazine was first published in March, 1950, the 5th issue was supposed to be already published in July. But only the 1st and 2nd issues had been published, and the 3rd issue was on the way. Dr. Ishikawa served as the vice-chair at that time and Mr. Masao Goto, currently a member of the House of Representatives, was serving as the chair. As time went by, the active leadership of Dr. Ishikawa became outstanding.

Quality Control was in an era of exploring its way, around in 1950. Even if I said something which just hit upon on my mind, Dr. Ishikawa adopted my idea, if it was considered good for the future of Japan and mankind. If I dared to say, “Don't adapt my idea easily. I am doing by myself and I can't make it alone,” Dr. Ishikawa hammered lessons into my head by saying, “Don't make excuses. Think how you can make it.” I learned that I could not make any excuse to Dr. Ishikawa. My most impressive memory of Dr. Ishikawa was that I was taught, a few months after I had joined, to struggle, struggle and struggle with my all strength, in order to satisfy him.

In return, I was ever so happy to be able to accompany Dr. Ishikawa to various places for work, although I was a woman, and had no subordinate. Owing to him, I had a chance to meet a variety of people, and visit a number of plants. I think I was

immensely lucky.

Lecture with a jumper and rain boots on

OHBA It was at the Chemical Society of Japan when I first met Dr. Ishikawa. I heard that he made a report on forming briquette coal, but no impression was left from that time. Then, Dr. Ishikawa took the lead to deliver a lecture on Quality Control at the Chemical Society of Japan. I still keep the textbook used, and Dr. Ishikawa came up for the lecture. He left extremely strong impressions on me.

MITSUAKI What year was that?

OHBA It should be around 1951 or 1952 as it was the beginning of the Chemical Society of Japan. The venue, I remember, was at an art institute in Ueno. He wore a jumper and rain boots at that time. Later, I was surprised to hear that he had been an engineering officer of the Japanese Navy. Besides, what he said was bitter and peppery. Generally Professors give a speech politely in front of the audience at academic society seminars even they are usually blunt to teach on campus. Far from being polite, he said at seminars. “Do it without any excuse!” “Do it this way!” “Do this exercise!” or “Read this!” etc. I felt his strictness. This was how I met him.

Speaking about severity, I had little experience to be praised by Dr. Ishikawa. Soon after the two-lecturer system was introduced, I was partnered with Dr. Ishikawa. There was very good material, in print, the “Mathematical model on Design of Experiments.” It was a mimeographed leaflet with a lot of errors and I read the proof thoroughly and corrected it the night before the lecture. It was the only time Dr. Ishikawa complimented me, and I was always lectured at the rest.

He was in bad mood when I did not reply in a quantitative way. If I said it would be almost likely a success, he asked how much almost was. I must have said 75% or something. I was hardened.

Meaning of “Get married when you are busy”

IKEZAWA I also had an opportunity to listen to his lecture at the Chemical Society of Japan in 1952 or 1953. I have little memory of it. From 1950 to 1952, I learned from Dr. Heihachi Sakamoto, who was a professor at Kobe University, and also lectured at Waseda University, as a visiting professor. My graduation thesis was also guided by Dr. Sakamoto, in 1951.

Mathematics was the field of Dr. Sakamoto's expertise, and he suggested that I learn the approach from an excellent professor, Dr. Ishikawa. I became a secretarial assistant for the 9th QC Basic Course. After the seminar program each day, the famous Ishikawa School and Sampling Research Group took place routinely. It was the start of everything when I participated in them.

I thought someone mentioned about the following story earlier. There were two famous phrases of Dr. Ishikawa, which were "Get married when you are busy" and "How can you practice QC if you can't drink 'Sake'?" I continued to observe these two things. I got married at the age of 35. At the time I almost gave up a marriage because of my hair was getting to be bald since I was 25 years old.

I was engaged to my wife in August, before the wedding ceremony in October. It was when the counseling service for the sales department at Komatsu Limited has just begun. It was during the summer holidays, and I took planes 18 times a month, traveling from Hokkaido in the north to Kyushu in the south. I could have a date only at Haneda airport and travel to work soon. As Dr. Ishikawa advised, the quick date brought me very good luck. She were getting to learn my work was busy since we got engaged. That's why she didn't run away even I didn't go home. (Laugh) I well understood what Dr. Ishikawa said, after I got married.

The second point is about the Dr. Ishikawa's phrase, "How can you practice QC if you can't drink 'Sake'?" Although most professors at QC drink alcohol, I did not drink, until I was 30 years old, as I am originally Christian. Because I received guidance from Dr. Ishikawa, after I started QC, I started to drink every day and shrive myself for being a fake Christian. (Laugh)

As I recall, I was quite rude to Dr. Ishikawa. Even I was called to be a part of the counseling team at the company where Dr. Ishikawa gave the counseling. I easily quit counseling the company if I did not feel like it. It often happened to me, but Dr. Ishikawa never scolded me on this. Even many people said that Dr. Ishikawa liked to sermonize, as his personality, I was pleased to find that he did not get angry in such a case.

Chasing each other on the way to the lecture

AKAO I also attended the lecture at the Chemical Society of Japan in 1951 or 1952. I was almost late to the lecture, walking from Ueno station to there. I found a person with a heavy bag, chasing with me back and forth on the way. I thought he would also go to the lecture to study, but he turned out to be a lecturer. (Laugh) It was the

same heavy bag. Of course, Dr. Ishikawa did not recognize it, but it was my first encounter with him. Then, I participated in the 7th QC Basic Course. In fact, Dr. Ohba should have participated, but he couldn't. So I participated there instead of him and I shaped my destiny. If not, my life would have been different now.

I joined at the same time as Dr. Hideo Yoshikawa, and we were instructed to confirm the accuracy of all calculations of "*The Control Chart Method*," a thick mimeographed textbook. We worked together to calculate, but the results did not match. We worked separately, then again. I don't remember how many times we met Dr. Ishikawa for this purpose.

KUME I was surprised to receive "*The Control Chart Method*," wondering if this type of book was published in Japan. When was it published?

AKAO It was around 1954, wasn't it? At that time, Dr. Ishikawa took note of his thoughts and findings precisely, everywhere he went. The book was merely an enumeration of them. That is why there seemed to be no connection from one sentence to the next. It was not sent from the U.S.A., the book was compiled out of his experience. It was the ultimate treasure for me to have worked with the book. I have no idea how much I learned from it. After this assignment, I joined the sampling research group, and the control chart research group, followed by giving lectures from the following year. Sampling took time for me to digest, but the professor purposely appointed me to lecture on it. I had no other way but to study hard. He had foresight. When he found certain thing needed improvement, he let me do, in order to study hard. Thanks for it, sampling became my strength.

Selecting a professor no one would go to, for graduation work

KUME In my case, there was no one among my fellow students, who would choose Dr. Ishikawa, as a supervisor for graduation work. There were 15 fellow students including myself, who majored in Chemical engineering. But, there was no one. At that time, Dr. Ishikawa was assistant professor, under the great Dr. Shingo Ando, managing together in the laboratory. Dr. Ando told me that Dr. Ishikawa's work would become necessary from then. Besides, it was not good there was no one under Dr. Ishikawa's supervision, so I decided to do my graduation work under Dr. Ishikawa. I never thought that Quality Control would develop to this level. At least, I knew nothing at that time. All I knew was that there was a professor called Dr. Ishikawa, but I chose him as the supervisor for my graduation work, and that was

how I got to know him.

MITSUAKI What year did it happen?

KUME It was in 1959. Ms. Fujimori was his assistant at that time, but she was away because of her poor health. No one was there and Dr. Ishikawa only showed up on Mondays and Thursdays. I felt lonely and was at a loss about what to do for study. I experienced hardships from this aspect. There were those around me who said that Quality Control was a subject for workers in the plant, not for University graduate engineers. I felt helpless, and thought I had made the wrong choice for my life, only one time.

My graduation work took place in the manufacturing plant of automobile glasses. I participated in the QC Basic Course, as well. It was just immediate after the current JUSE building was opened. I remember it was during the 17th Basic Course, in which I certainly listened to the lecture by Dr. Ohba and Dr. Akao.

Work voraciously; full of drive

KUME Dr. Ishikawa generally started as the vice-chair for everything. It was true for the Basic Course, where Dr. Mizuno was the chair, and also for the Deming Prize Committee. Mr. Goto was the editorial chair for magazines, wasn't he?

MITSUAKI It was just for two years in the beginning. After that, Dr. Ishikawa became the chair. When I joined, Mr. Goto was the chair, and I only had an impression of him. As time went by, I was given a real workout by Dr. Ishikawa.

In those days, a plant visit was included in the courses, such as DOE and BC. I took advantage of joining the visit to gather information for articles. I put a report about one plant visit, in *Hinshitsu Kanri* (Statistical Quality Control). As Dr. Ishikawa was often present at plant visits, I learned how to gather information from him.

Additionally, when Dr. Ishikawa went to interview, he instructed me to accompany him. Interviews with the Top management, around that period, were mostly conducted by Dr. Ishikawa, as the editorial chair, from the standpoint of responsibility.

AKAO When did he become the editorial chair?

KUME In 1952, when he was 37 years old. In short, before 40.

MITSUAKI Dr. Ishikawa was not nervous even in front of those who were great so much.

KUME Dr. Ishikawa might think his father was the greatest. I have an impression that

his performance as the vice-chair was excellent, and naturally, he became the chair.

MITSUAKI Dr. Ishikawa was never absent from the editorial committee meetings, while he was the chair. He decided the date of the meeting according to his own convenience, but he respected priorities, even something significant came up later.

AKAO All in all, “Quality Control” was his first priority, wasn’t it.

MITSUAKI Even though he was absolutely busy, he observed the deadlines for articles.

AKAO I wonder when he found the time to write. He drank almost every day.

MITSUAKI When he traveled on the train, he started to write after muttering, “I had a good sleep” after a nap of 10 or 20 minutes.

AKAO That is why the professor always had a lot of things in his bag. Come to think of it, he wrote something when he had time to spare.

OHBA Even when a company explained using some documents during the counseling, Dr. Ishikawa started to work on the side if he figured out its content. When I looked into what he was writing, it was something completely different from the discussion. And yet, he understood what was discussed at that moment. This manure is a qualification to be a professor, and he was excellent.

KUME He kept going it for a long time, tirelessly, without getting tired. I felt sorry to the professor and, I wondered how long he could keep going without getting tired.

AKAO He put his life on it.

KUME He served as the chair for QC conferences and the Quality Month Committee for a long time. As he was the chair from 1951 until he passed away, it amounted to over 30 years. He was more like a facilitator, which was really an awful task.

OHBA He told me, “Work voraciously,” “It is necessary to be hungry,” and “Don’t be plain.” In other words, what he wanted to say was “Persistently stick to it.” He often used the word, insatiableness.

KUME To me, he said “drive” or “vigor”. From the beginning, I am not full of vigor, or a person full of drive. He tactically used different words, by looking at a person.

MITSUAKI It was often the case that Dr. Ishikawa changed what was decided at the committee meeting. After we repeated the discussion again and again, and I worked hard to follow it up, as a secretariat, he suddenly told me to quit on the way. I got really angry, and told him that it was your direction the other day. Then he replied with the proverb, “A wise man changes his mind.” He brought out such quotes, at his convenience.

KUME He told us to have an ear to listen. But, he hardly listened to. (Laugh)

OHBA Speaking of which, he told me to become an indispensable person, and also, to

be an unnecessary person.

AKAO He also said, using a subordinate was just half a man, and using a superior made a whole man.

World famous practitioner

KUME I think the approach and philosophy towards Quality Control has significantly changed since Dr. Ishikawa started Quality Control. What do you think about that? For example, when did people begin to say “Quality Control is a revolution of philosophy for management”?

IKEZAWA Dr. Ishikawa wrote about a revolution of philosophy, and the improvement of the company constitution, in the forward of his book, *The Introduction to Quality Control* published in 1954. At that time, we called it QC without T of TQC. It was written in a way, “What is new Quality Control?” In his last publication, *What is Total Quality Control? The Japanese Way*, the word, Quality Revolution was used.

KUME I wonder if he thought of this idea from the beginning.

AKAO He started to say that when a new control, based on facts, was introduced from a conventional idea. During the course of bringing up QC Circle later, the idea became hardened.

KUME I think QC Circle was one of them. Speaking about TQC, Quality Control had been playing a more significant role in management. The professor was convinced that new management would come into existence from that point. That is why I think the professor used the expression as a revolution of philosophy in management, more frequently.

AKAO Professor Ishikawa was always a little ahead of the time. That is to say, SQC and TQC were formed, roughly, from 1960 to 1965, but he actively spoke about QC, engaged in by everyone, at an earlier stage. In addition, he was already active in education and training for foremen, before QC Circle was established. Professor Ishikawa was certainly a step ahead. He was really great. All that he tried started to bear fruit later on.

OHBA Professor Ishikawa repeatedly spoke about corresponding to liberalization, when he worked on the textbook, *The Control Chart Method*. He emphasized the application of Quality Control, in order to cope well with liberalization. He already had an idea about the revolution of philosophy in management, by that time.

IKEZAWA In the first chapter of his book, *What is Total Quality Control? The*

Japanese Way, Professor Ishikawa wrote about his wish, in which a part of his idea had surely changed from the past. At the beginning of his earlier book, the “*Introduction to Quality Control*”, he wrote about his wish, which was to see the Japanese economy become well-established through QC and TQC and through Japan’s ability to export good and inexpensive products world-wide. It will then follow that the Japanese economy will be placed on a firmer foundation, Japan’s industrial technology will become well-established, and Japan will be in a position to engage in the export of technology on a continuous basis. What changed was that Professor Ishikawa started to mention, very strongly, that his wish was to improve the life of Japanese nation, and, if possible, life of people all over the world, and to enhance peace.

MITSUAKI Professor Ishikawa said, “On behalf of Japanese people” in the beginning, but “On behalf of the peace and prosperity for all human beings” later.

IKEZAWA Earlier we discussed “vigor” and “insatiableness”, I think this lofty ideal had great influence. Partly because of his holding a lofty ideal, I think Professor Ishikawa was able to think, not only about Japan, but also the world, and translate this into action. I feel “vigor” and “insatiableness” came from there. The reason why I mentioned the difference is that someone said that Dr. Ishikawa did not include this lofty ideal in his book, the *Introduction to Quality Control*. A revised edition was published later, in which you could find “in hopes for the happiness of all the people of the world.” The professor properly corrected, what he wanted to revised. He was really delicate from this aspect.

OHBA I think Professor Ishikawa was a practitioner, or even an incarnation of pragmatism. Dr. Juran praised Professor Ishikawa as a world famous practitioner in his paper. I think it exactly fit Professor Ishikawa. Not a world famous academician, but practitioner.

I had one thing which I got bitingly upset about, by being scolded by Professor Ishikawa. I tried to rebut later, but was beaten back. Both Dr. Nishibori and I were speakers at the Quality Control Symposium at Oiso, where Dr. Nishibori made a speech on management by trust, and I reported on QC Circle activities.

I concluded my speech by reporting that QC Circle activity was an activity for motivation, and sociologists and psychologists needed to be actively involved.

During the speech at the dinner on that day, Professor Ishikawa scolded me by saying, “what Mr. Ohba spoke was wrong” and I tried to rebut. Then, he told me what was created by psychologists and sociologists. They just organize the things, what being done by human beings for the settlement. I mistook to understand what

Professor Ishikawa said meant psychologists and sociologists might treat workers on the actual work place as experimental animals, so it was wrong to involve them. I came back immediately after being beaten by Prof. Ishikawa.

I think Dr. Juran's words, "World Famous Practitioner" were not negative at all, rather highly respectable, because Dr. Juran, knew Professor Ishikawa very well.

KUME I introduced the word that Dr. Ohba just mentioned, during my speech, at the end of Dr. Ishikawa's conferral party, but I do not like debating on words. I do not like what TQC is, for example. Do it before you say, or actions speak out than words. I think Professor Ishikawa was a person who demonstrated through his action, for real.

Respect to Humanity Based on the Theory That Man Is, by Nature, Good

KUME In the beginning Professor Ishikawa told me that he thought, the introduction of QC Circle activity, was possible only in the countries using Kanji, such as Japan, China, Taiwan, and Korea. I still regret deeply why I had not asked him the reason of his thought.

SUGIMOTO At an early stage Professor Ishikawa had an idea that QC Circle activities would become popular in the countries, using Kanji or in those of Confucianism, but not in other countries. In later years, he said QC Circle would certainly become practiced in the countries of Caucasians as well, because human think the same thing.

I think it was because Professor Ishikawa's thought gradually expanded to the area of human love. However, I personally think that it is quite difficult for QC Circle to extend the boundary to the world of Caucasians, since the social system, as well as ways of thinking, are different from Asians.

MITSUAKI While countries in the Western Europe are based on the concept of individualism, countries using Kanji and those of Confucianism, have a philosophy to support the center, e.g. the family, the load, etc. QC Circle is the activity, requiring mutual cooperation in the same workplace. Everyone has to work together, without exception. The professor thought it was this Confucian spirit, in which everyone worked for one thing, all together.

IKEZAWA In Professor Ishikawa's book, the word, Confucianism was not used clearly, although to people using Kanji, it was suggested. I think Japanese people

were simply told to be aware of the idea of so-called, Confucianism.

KUME I also assume that it was probably like that.

IKEZAWA The theory that Man is, by nature, good, often appeared in his books. Christianity is based on the theory that Man is, by nature, good. Professor also stated that he was thoroughly based on the theory that Man is, by nature, good. I think the fundamentals of QC Circle lay exactly on the same theory; the philosophy of thinking with a respect to humanity. There was a spirit of respect to humanity at the bottom of Professor Ishikawa's heart and he upheld the spirit.

OHBA Dr. Ishikawa's word which remained in my ear, was "Respect for humanity is one thing; respect for people is another." He repeatedly said so.

KUME What does it mean?

OHBA If you would like to show a respect for a man, it is simply good to compliment him. When it comes to a respect for humanity, it is not always good to compliment. For example, if you show respect for a man, you should give him a 20-minute break. Prof. Ishikawa thought that 15-minute break is good enough for a person respected for his autonomy. We should respect humanity even we get into some difficulties. Professor said it was the worst to respect for only a man.

IKEZAWA When I looked at the professor working on QC Circle, he treated people in the same manner, regardless of whether they were the President or a single worker, which came from his idea. At the evening gathering, Professor Ishikawa swiftly entered the circle and drank with foremen and members.

OHBA Professor behaved not proudly. Maybe it came from how he was well brought up.

KUME I think he was a natural leader, after all. It is true that a leader can go in there, and do it himself.

AKAO The professor was not a mere leader, but a leader with a sense of mission. It was his absolute confidence with a sense of responsibility that Japan's QC depended on him. I think that was why he deliberately thought, from various aspects, to finally come up with the idea for everything.

Great Organizer

IKEZAWA One of the best characteristics of Dr. Ishikawa was, that he was an excellent organizer. Starting with Quality Month, the structure of QC Circle regional chapters was remarkable. Presumably, he, of course, listened to opinions from many people. He organized things from one to the next.

MITSUAKI The professor gave a few clues. When a QC Circle song was created, I was at a loss where to request assistance. Then, Dr. Ishikawa advised me to have a talk with NHK, whose representative was present at the Quality Month Committee meeting. When it came to making the organization of QC Circle, he gave me quite a good hint to research the Japanese Army or Soka Gakkai, which have relevant structures.

KUME I think sampling in his earlier days was a very big achievement, of which success factor depended on systemizing collaborative experiments themselves, after all. He organized the establishment of the Sampling Research Group, in which he included Nippon Steel, NKK Corp., etc., not only carrying out experiments in the University laboratory diligently. He involved all dominant companies to carry out collaborative experiments, at once.

IMAIZUMI This was probably the first QC counseling by groups. Dr. Eizaburo Nishibori, Dr. Shigeru Mizuno, Dr. Kaoru Ishikawa, Dr. Ikuro Kusaba and I went to visit the Muroran Works of Fuji Iron & Steel Co., Ltd. for about one week. According to the direction of Dr. Ishikawa, I carried out a random sampling of coke and strength tests (Drum test) for the first time. I remember we had argument over the results, which were quite different from everyday data. These sort of issues were discussed at the Sampling Research Group of JUSE, and at ISO even now.

OHBA I feel it really understandable that it was sampling, speaking of Dr. Ishikawa. I heard that Dr. Akao, earlier had a thing about sampling, but Dr. Akao well understood the theory. No one would become confident in sampling, unless it was based on the experimental fact of the thing in each theory. Dr. Ishikawa did it with actual data, using his organizing power. He was the organizer.

AKAO Quality month activities were proposed by Dr. Ishikawa. QC Circle that he raised, extended their boundaries extensively, even overseas. He was not just the organizer in Japan; he organized overseas involvement in the same manner.

IKEZAWA Dr. Ishikawa also worked hard for the QC Circle Cruising seminars.

MITSUAKI Dr. Ishikawa was on board every time, as the principal of the seminar between Hong Kong, or Taiwan and Japan.

SUGIMOTO I spent two weeks on the ship with Dr. Ishikawa, who was the principal, and I was appointed as the captain for the 1st QC Circle Cruising seminar. I well understood Dr. Ishikawa's thoughts and behavior as we shared time, from morning till night. In a nutshell, he was a great organizer who was not picky about small details, but looked at the big picture to take action.

IMAIZUMI So far, I have travelled overseas 69 times, out of which I accompanied

Dr. Ishikawa, some 29 times. I learned a lot from him, indeed, in various study teams, at QC Circle Cruising seminars, at International conferences and at annual assemblies related to QC and ISO, etc. Dr. Ishikawa took a number of pictures, which were always appreciated by people from overseas, since he frequently sent photos to them.

Sense speaks; what is XX

KUME There are a number of books that Dr. Ishikawa wrote, and which I think they are hardly logical and not in order, they were abundant.

OHBA Dr. Ishikawa was bare-knuckled on one side. It is difficult to read his book in an organized manner, although each item is a good point. He also liked to use, “what is XX,” often. That is probably why Quality Control people like to lecture “what is XX, like?” “What is Process capability investigation?” for example. The most outstanding and simple points were that Dr. Ishikawa made a definition of “Quality Assurance,” which was to assure XX in the end. (Laugh) That is no longer the definition. But it exactly describes “What is XX?” “What is XX” is not a definition, but nothing is more useful.

IKEZAWA Talking about his book, Ms. Mitsuaki told me that, after she corrected the manuscript of *What is Total Quality Control? The Japanese Way* as it did not make sense, Dr. Ishikawa put it back again, later.

MITSUAKI In addition to having no relation between the former sentence and the latter, strange additions, like proverbs, suddenly came in. I told Dr. Ishikawa to remove them as there seemed no relation. Then, he replied, “It was significant, and be sure to place it in there”. There are a few places like this, in the book, *What is Total Quality Control? The Japanese Way*. Readers feel a sense of discomfort, since there is absolutely no relation between the former and the latter.

OHBA Whether it brought discomfort or not, it means you have no sense if you don’t understand, using the words of Dr. Ishikawa.

IKEZAWA Dr. Ishikawa frequently used the word “sense”, which was easy to use, and I believe Dr. Ishikawa thought that he had sense, by himself. (Laugh) To be honest, the word “intuition” might fit better, but Dr. Ishikawa often spoke with his intuition, or sense. And his intuition was amazing and so good.

SUGIMOTO Dr. Ishikawa often told me, “If you see product specifications, don’t think they are absolute; if you see raw material specifications, don’t think they are absolute; if you see tolerance, don’t think it is absolute; if you see a drawing, don’t

think it is absolute.”

If an inexperienced worker accepted these words seriously, he cannot work at all. Even now I think it was a way of thinking, for people who already reached the standard of an expert, like Dr. Ishikawa.

Professor Ishikawa and a drink

KUME Finally, it would not become his commemoration, unless we talk about his story of drinks.

OHBA When we had a counseling session, we were hardly pleased with it once in a while. Dr. Ishikawa was good at coping with the situation like this evening. He told me, “Let’s get out of here.” Then we said we would like to be excused for today. We went to Japanese pinball. Before entering, Dr. Ishikawa told me to meet at the hotel again at XX o’clock, in order not to drag down each other.

When I came back to the hotel at the appointed time, Dr. Ishikawa was already prepared to take a bath. I told him I came back. Then, he asked whether I made some profit or not. He kept saying, “It was good” and “Order some ice.” Regardless of favorable or unfavorable outcomes, he withdrew prettily and promptly. I tried hard to emulate his behavior like that.

KUME It was because he was well brought in a good family, after all. In return, he got absolutely plastered among us, when we stayed up till morning for drinking.

OHBA When we held the management engineering festival, at Science University of Tokyo, Dr. Ishikawa had already moved to Musashi Institute of Technology. But we decided to invite Dr. Ishikawa for the lecture. He enjoyed the moment with students over drinks and Inari-sushi. Sometime later, when students started to leave the venue, Dr. Ishikawa stopped them by saying “Wait. I was still talking. Plenty of whisky and water were still there. There was some Inari-sushi, too. What was over?” After a while, students asked to be excused, again. Dr. Ishikawa scolded them, and told them to put it all back in the bottle, in order not to waste it. (Laugh)

KUME It is said that drinkers are miser. The reason behind this is why they prefer using money for drinking, not for elsewhere. Dr. Ishikawa put some leftover in the glass, back in the bottle, even if it was others, and went to other places to drink. He was really miser when it came to drinking. It means Dr. Ishikawa was a real drinker.

AKAO At that point, Dr. Ishikawa was second to none.

KUME Thank you everyone, for joining today to speak about who Dr. Ishikawa was, from your memories of him. I think unknown sides of Dr. Ishikawa were also

revealed.

Although it was a big loss, not only for Japan, but also for the world, that the great father of QC passed away, we have a duty and responsibility to take over, maintain and develop his numerous achievements. In closing, I wish everyone success in this regard, and declare a close of today's round-table talk.

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