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The KJ Method: A Technique for Analyzing Data Derived from Japanese Ethnology [1]

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This essay is a discussion of the KJ method developed by a Japanese ethnologist, Jiro Kawakita. A brief biography of Kawakita and the history of the KJ method is described. The KJ method was developed as a result of having difficulties in interpreting ethnographic data in Nepal. The KJ method builds upon Charles Pierce's notions of abduction and relies upon intuitive non-logical thinking processes. Kawakita's methods were developed and diffused throughout Japanese management and educational circles. Kawakita believes that his methodology has the potential of liberating humanity from the mechanistic philosophy imposed by Western Civilization. The KJ mthod, according to Kawakita has universal applicability and does not only conform to Japanese culture and management decision-making processes which are generally based on the group-orientation model. This simplistic group-orientation model of Japanese society is being criticized by anthropologists such as Harumi Befu. Kawakita argues that human nature is universal, and that the KJ method, as a means of decision-making can be utilized in all societies throughout the world to implement social and economic development.

Key words: KJ method, ethnology; Japan

During the 1970s gallons of ink were spilled in economic, sociological, and business journals regarding innovative Japanese management techniques. For a review of the sociological literature see Lincoln and McBride 1987. Anthropologists such as Thomas Rohlen (1974) have also contributed to this literature on Japanese management, decision-making, and corporate organizational style. Quality-control circles, quality of work-life programs, participative management, and Ouchi's Theory Z management programs have been discussed in academic settings and executive sessions in board rooms within corporate headquarters throughout the world. The decentralization of decision-making and quality control methods "Japanese style" is being implemented experimentally in one form or another in many American corporations. In light of this heightened awareness of Japanese management methods, it ought to be noted that a Japanese anthropologist has had a role in developing some aspects of these so-called Japanese management decision-making methods. His name is Jiro Kawakita.[2]

Jiro Kawakita was born in Mie Prefecture in 1920. He studied geography at Kyoto University and graduated with a B.A. in 1943. He became a professor at the Institute of Geography at Osaka City University (1950-60), and later was Professor of cultural anthropology at the Tokyo Institute of Technology (1960-70). In 1978, he taught at the well-known technical university of Japan, Tsukuba University, and then later at Chuba University in 1985. He holds a doctorate of science and presently is Professor Emeritus of the Tokyo Institute of Technology. During the 1950s and 60s Kawakita directed several different scientific expeditions to Nepal and India sponsored by the Japanese Society of Ethnology. In 1964, he founded the Japan Nepal Society. His primary anthropological research interest is cultural ecology; however, he has published extensively on many other aspects of Himalayan ethnography including social organization and ritual. Over the years Kawakita has directed reconnaissance surveys and technical research and development projects in the Sikha Valley in Nepal.

As a consequence of developing analytical techniques to comprehend Himalayan ethnographic data in the 1950s, Kawakita originated a generalized brainstorming technique or what he terms an "idea-generating" methodology to gather qualitative data. It took him about 15 years to systematize the method and complete the guidelines for the development of a training program to teach this method. This method became known as the KJ Method (Kawakita's initials) and has been widely recognized as a useful, creative, brainstorming technique in Japanese business and administrative circles. As an innovative method of organization development it was regularly taught to business students in many of the leading universities and colleges throughout Japan.

The KJ Method was widely publicized in the media and business magazines, and influenced some senior CEOs and administrators in Japan. Major Japanese corporations began to experiment with the KJ Method as an aspect of Japanese collective decision-making techniques, involving the ringi-seido and nemawashi processes. The ringi-seido process refers to how

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the Japanese build consensus through circulating a petition through various levels of management. Nemawashi (root-binding) is the informal networking which ties the levels of management together for the collective decision-making (Lincoln and McBride 1987).

In 1969, in the midst of student turmoil and unrest at Japanese universities Kawakita resigned from the Tokyo Institute of Technology and formed a volunteer group to operate a "Free Campus University," Ido Daigaku. The Free Campus University was established and tents served as classrooms and dormitories for two week courses. Anyone over eighteen regardless of sex or nationality was qualified to enter the Free Campus University. This was also an extremely unusual experiment in education within the context of the rigorous, structured, "examination-hell" atmosphere of Japanese education. Students were taught the KJ Method as the core of problem-solving techniques. Students from across Japan were divided into teams of six members each, and six teams comprised one "unit." The Free University was made of three units plus instructors and lecturers.

According to Kawakita the principle motive for establishing the Free Campus University was that he felt an impending crisis in Japanese society (and world civilization) because of the "hardening of the arteries" of organizations into hierarchical inflexible bureaucratic structures (1991:28, interview). The Free Campus University lasted from 1969 to 1977. Students from all over Japan enrolled in these two week "moving seminars" and were introduced to the KJ Method of problem-solving. During their intensive training program, students lived in specially designed tents and did their own cooking. Collective decision-making, and teamwork based upon group harmony, *wa*, was emphasized in applying the KJ Method to tackle different types of research problems; hence, students were organized into small groups or teams in order to foster creativity.

As indicated above, the KJ Method was developed as a result of Kawakita's attempt to analyze ethnographic data. The method was initially applied to organize complex, immeasurable, idiosyncratic, non-repetitive, behavioral, qualitative data collected in the field. In 1951, Kawakita had had some trouble integrating the heterogeneous data that had been collected on note cards in a mountain village in Nara Prefecture in Japan. In his words, "With masses of data spread about on my desk, I had been racking my brains to find some way to integrate them when I suddenly realized that depending on the spatial arrangement of the cards, you can see new meaning in them and find ways to systematize the data. That was the first realization that led to the creation of the KJ Method." (1991:25). Beginning in 1953 Kawakita began to employ his embryonic method in his ethnographic research. Later in the 1960s he led a scientific team to Nepal and India and trained a couple of members of the team in the KJ Method. At this time the method was only partially developed. He emphasized a systematic rigorous data collection procedure. Each scientist made close observations of the economic, social, political, and ritual behavior. Data were recorded in separate journals by each observer. After returning from the field the members who were trained in Kawakita's methodological techniques were to organize their data within broad conceptual categories. These conceptual categories were developed through a team effort induced by reorganizing and synthesizing the basic data. The recorded data were evaluated from differing perspectives before they were catalogued or classified.

In comparison to the typical approach of American or Western ethnographers whose data are randomized and reorganized in a variety of different contexts, Kawakita emphasized selecting specific categories for organization and synthesis. In certain respects this method is similar to the use of randomizing functions in computer simulations.

As Chie Nakane indicates in an essay on Japanese ethnology, most of the early fieldwork of Japanese anthropologists was done in the context of large-scale scientific expeditions outside of Japan (1974:59). Most ethnographic field surveys that have been published were products of teams that included scholars from other disciplines. Kawakita's research and methodological techniques developed within the framework of this kind of group endeavor. Hence, Kawakita's research process involved the participation of a variety of individuals who subjected the data to specialized criteria. The data were collated with reference to the broader conceptual categories which were developed through team effort.

From the experience in Nepal, Kawakita proposed an approach which would facilitate a creative bridging synthesis between ethnographic fieldwork and more structured hypothesis-testing, and laboratory experimental procedures. In 1964 Kawakita discussed his ideas underlying the method with Professor Shunpei Ueyama, a philosopher in Japan, to try to discover how his method conformed to the general rules of logic. Ueyama informed him that his methodology was neither deduction nor induction, but rather abduction, a method suggested before Aristotle, but not developed in a systematic way until the early twentieth century when Charles S. Peirce, the American pragmatist promoted it.

In contrast to the traditional division of inference into simply deduction and induction, Peirce insisted on a tripartite division—deduction, abduction, and induction. By deduction, Peirce meant what is traditionally meant; its subject matter includes mathematics and logic. Peirce limited induction to the process of confirming a hypothesis through observation of the particular instances deduced from the hypothesis. Peirce identified the process of *the formation of the hypothesis* as an independent form of reasoning, and this, he called *abduction*. Abduction involves a *meta-scientific* form of reasoning to be used to sort out chaotic, erroneous, ideas and confusions. It enables the scientist to select a hypothesis for confirmation or falsification.[3]

In 1964 Kawakita published *Partyship (Pati gaku)*,which described an early form of the KJ Method and gained considerable recognition in the Japanese business community as well as the public sector. After becoming more familiar with the process of abduction, Kawakita developed the W-shaped problem-solving model, upon which the contemporary KJ Method is based. In 1967 he published *Hassoho* [Abduction], which represented the initial general explanation of the KJ Method in a book form. He also completed an outline of a training system for the method, which culminated in another book published in 1970, *Zoku Hassoho* [Abduction: Part II]. During this period of time the KJ method was spreading quickly throughout Japan, first among management consultants, and later among middle-level business executives in large companies and the top echelon of small and medium-sized companies. According to Kawakita, though the method spread from the middle outward to the top and the bottom it spread through the lower ranks more quickly and steadily than the

upper ranks (1991:27, interview). Afterwards students became familiar with the method and it was incorporated into the Japanese higher education system. By 1978 it had diffused into every sector of Japanese business, research, and education except politics.

Since 1970 Kawakita has taught the KJ Method at his own research institute, the Kawakita Research Institute (KRI), located in Meguro, Tokyo and in the occasional sessions of the Informal Free Campus University. He has personally trained some 1,500 participants in the Free Campus University, and over 3,000 at the KRI. Another 3,000 were trained under the sponsorship of the Free Campus University and through Kawakita's visits to various agencies and institutions. Trainees have come from public organizations including the central, prefectural, and local governments; public corporations such as the national railways and electric power companies, and NHK (Japan Broadcasting corporation); private corporations from all sectors of business; health organizations; labor unions; educational organizations from primary through higher education; research institutes and laboratories; voluntary organizations involved in cultural and religious affairs or youth groups; and many individuals including a growing number of housewives and students. Kawakita has indicated that perhaps as many as ten million people have applied the method as least once (1991:31).

A Society of the KJ Method made up of business managers, psychologists, agronomists, government officials, consultants, engineers, geologists, teachers, and various researchers was established in 1977. The members will celebrate their twentieth annual anniversary in 1997. The members have annual meetings with presentations and subsequent publications of papers that consider the use of the KJ Method.

The KJ Method

The KJ method includes four aspects: 1) a problem-solving model (the W model); 2) qualitative data formulation and analysis tools (the KJ method, etc.); 3) a new type of field research concept and method; 4) teamwork concepts for creativity. The KJ methodology is used as a supplement to a more generalized model of problem-solving referred to as the "W-shaped Problem-Solving Model" developed by Kawakita.

The W-shaped problem-solving model attempts to synthesize the experiential with the cognitive level of thought. It is Kawakita's contention that all problem-solving involves both experiential and cognitive levels. The W-shaped problem-solving formula allows one to proceed from awareness of a general problem through the collection of data, identifying a specific problem, evaluation, proposing solutions, procedures for action, verification, falsification, and obtaining conclusive findings. This model is used along with the KJ Method as a basic scientific technique.

The "W-Shaped Problem-Solving Model," (see Figure 1), outlines the basic steps of scientific research. As is illustrated by Kawakita in Figure 1, there are two parallel levels of problem solving. One level, called the "level of thought," refers to mental or cognitive activities, and the other level, called the "level of experience," refers to events or concrete actions. Thinking and sensing are involved at different stages in the process of scientific research. Problem solving advances along the heavy line (1991:8).

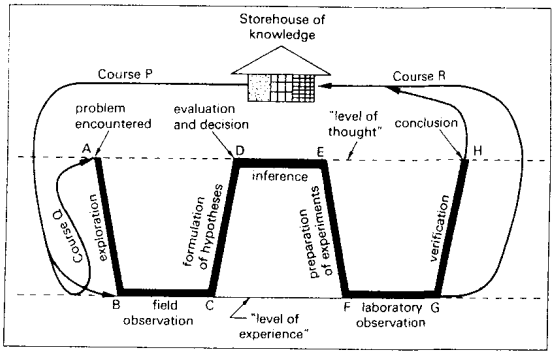

Figure 1. Outline of Basic Steps in Problem Solving

In Kawakita's formulation A-D-E-H represents the 'armchair sciences,' E-F-G-H represents the 'laboratory sciences,' while A-B-C-D represents the 'field sciences.'

As scientists encounters a problem at point A on the mentalistic level, they explore the conditions surrounding the problem between points A and B, then they collect all relevant data between points B and C. With this data they develop hypotheses between points C and D. Returning to the level of thought at point D, they evaluate their hypotheses and decide which one to adopt, or abandon the problem solving. If they decide to continue the process between points D and E they used deductive methods to infer and revise the adopted hypothesis for solutions to the problem. Then they devise experiments for testing and evaluating the hypothesis between points E and F, and observe the experiments between F and G and after viewing the results either verify or falsify the hypothesis between points F and H. If they falsify the hypothesis, they go back to point A and start the problem solving again.

As Kawakita emphasizes, Western science provided many methodologies such as inference, experimental design, and hypothesis testing for performing the basic steps from points D to H, but there is little systematic methodology for illuminating the steps from A to D, in particular the step from points C to D. The KJ method was developed to bridge the gap between unstructured field observations, induction, hypothesis adoption, and experimental laboratory methods.

> The KJ method serves to unite two general approaches to problem-solving: the laboratory method that starts from definitions of hypotheses and tests them under controlled laboratory conditions, and field method of making observations in an unstructured environment and generating hypotheses based on them. (Kawakita 1977: 95).

The actual application of the KJ method involves four essential steps 1) label making, 2) label grouping, 3) chart-making, 4) written or verbal explanation.

In the first step, the label making step, information based upon observations relevant to the problem is written on note cards or specially designed self-adhesive labels. Each label or note card contains only one thought or concept related to the problem. The next step involves randomizing the concepts or thoughts by shuffling the cards or labels and then grouping the labels into "teams." Kawakita emphasizes a non-linear-non-logical method in this phase of the method. Preconceived

biases must not motivate one's choices, but "feelings" should dominate logic in grouping these labels together in teams. When reading the labels and repeating this process over and over again gradually teams of labels will be formed. Intuitions will guide this process. At times the participants will find labels that do not seem to belong with other teams. These labels are referred to as "lone wolves." However, often these lone wolf labels will fit in with a team of labels to form a *team of teams* at a higher level in the process of grouping labels (1991:10).

The next step in grouping labels involves assigning titles for all the teams of labels and spreading the labels out in their various teams and reading them. Identifying titles or more generalized concepts are subsequently used to order the data into larger groups or "families." Arranging the teams into larger families and placing titles on the new families and clipping them together helps classify the data. This intuitive process may be repeated as many times as necessary to reduce the labels to less than ten families.

The third step, chart making, involves devising a spatial patterning of the "families" into a consistent unifying chart. The chart is a sketch of appropriate configurations which reflect certain patterns found within the original labels. The chart will have arrows to indicate cause and effect relations, or order of occurrence, interdependence, connection, or contradictions. Finally, the chart must be explained, verbally and in writing. The explanation must attempt to integrate the data while simultaneously distinguishing interpretations from descriptions. Explanation is the fourth step in the KJ Method, and it attempts to reduce the complexity of observable data to a manageable form. In this step, one will often develop new ideas about the problem. Kawakita emphasizes that the explanation ought to be smooth and concise in order for it to be effective. The explanation must express in detail the interrelationships of elements that are configured in the chart. Each interrelationship must be examined and defined logically and precisely (1991:12).[4]

Obviously Kawakita's KJ Method is more experiential and intuitive than theoretical in character. Formal criteria are not given for making certain kinds of deductions. Yet the KJ Method has proved valuable within Japanese education, business, industry, and in many R & D programs. As Kawakita states, "...the practice of the KJ Method has given a great number of people a new lease on life and rejuvenescence of their energies, generating at the same time true personal contact and creative consensus among people who practiced the method together" (1977:97). He emphasizes that the KJ Method enables people to free themselves from a priori assumptions, preconceived notions, rigid formalisms and dogmas, or unrealistic hopes or utopianism. Kawakita claims that the KJ Method assures scientific treatment of qualitative data, resulting in realistic, objective conclusions (1991:15). He believes that his method has the potentiality of liberating people to develop their full humanity as whole persons (1991:16).

Kawakita also states that the ultimate source of the world crisis today is caused by Western civilization and its dominant world view. He argues that the dominant Western world view includes a mechanistic philosophy that treats the world essentially as an assemblage of parts that can be manipulated by individuals (1991:19). Although Kawakita agrees that there is no set of values that can replace this model, he claims that methodologies such as the KJ Method can help transform and modify these values and the implicit mechanistic world view. In his view since the KJ Method has universal applicability it is capable of providing a breakthrough in the contemporary crisis in world civilization.

One of the questions frequently raised about the KJ Method is its universal applicability. As in the other Japanese approaches to problem-solving, *ringi-seido*, *nemawashi*, Q.C. circles, etc., the KJ Method emphasizes a group or team focus rather than an individualistic focus in reaching solutions. In this sense, many Westerners might draw the conclusion that the KJ Method appears to be embedded within the cultural context of Japanese life. The Japanese emphasis upon *wa* (group harmony) and group dynamics would appear to create ideal conditions for the utilization of Kawakita's methods. Therefore, some may believe that the applicability of the KJ method may not be easily transferred outside of the Japanese context.

According to the mainstream group model of Japanese society, Japanese institutions including corporations emphasize traditional values such as group harmony, or *wa*, and collectivistic tendencies rather than individual performance (Ouchi 1981). For example, as is usually emphasized in the mainstream model, rather than hiring managers based on their individual performance indicated by grades in college, Japanese corporations recruit their managers as groups from different universities. These firms are more interested in how groups and teams of managers will work together than they are in each person's individual effort or performance. Managers are hired, trained, and promoted as groups within the corporation, based on their ability to cooperate in teams. In contrast to Western societies, the mainstream model suggests that the Japanese corporations stress mutual dependence and teamwork instead of individualism and independence.

According to mainstream theorists in order to reinforce collectivistic tendencies, the large Japanese corporations offer lifetime employment and an overall concern for their employees' general welfare. Employees are rarely fired or laid off. The corporations provide recreational facilities, parties, child care and other family-related services, and other benefits to enhance corporate loyalty. Corporate decision making is also based on collective principles. Typically, in the *ringi-seido* decision-making methods, several younger managers are responsible for talking to 60 or 70 people who will be affected by a decision. Proposals for a new plan or policy are discussed and then redrafted until a consensus is achieved. A decision requiring one or two phone calls to a division manager in an U.S. company may take 2 or 3 weeks in a Japanese corporation. Once a decision is reached, however, everyone involved becomes committed to the plan.

Within the classic formulation of this mainstream group model of Japanese society, anthropologist Chie Nakane believes that this collective orientation results from the hierarchical nature of Japanese social organization (1970). Nakane views Japanese society as consisting of hierarchically organized groups with paternalistic leaders at the top who serve group needs. She believes that the psychological process supporting this group orientation is *amae*, an emotional dependence that develops between a child and his or her mother. Through enculturation, *amae* becomes the basis of a mutual dependence that develops between superiors and subordinates throughout society. This dependence is reinforced by provisions given by the superior to the of loyalty of the subordinate to the superior.

In her classic study of Japan Ruth Benedict (1946) had explored similar themes.

More recently, scholars such as anthropologist Harumi Befu has questioned this mainstream group model of Japanese society (1980). To some extent, this group model of Japanese society tends to be a reification of cultural processes, and could be considered a form of Orientalism. Befu criticizes the group model of Japanese society for its tendency to overlook social conflict, individual competition, self-interest, and exploitation within Japan. As to the purported internal harmony of Japanese groups and society, Befu believes that many proponents of the group model have lost sight of many aspects of Japanese society. Moreover, Befu believes that many of these theorists have failed to distinguish between the real and ideal norms of Japanese society. Although a president of a corporation may refer to his or her company as a harmonious, happy family at an induction ceremony for new recruits, he or she acts differently at a collective bargaining session in dealing with union demands.

Befu emphasizes that not only Western scholars but the Japanese themselves have accepted this group-model concept as an integral aspect of their cultural identity. He argues that the group model is not really a social model for Japanese society as much as a cultural model or belief system. He suggests that the group model as a social model is too simplistic to explain comprehensively a complex, postindustrial society such as Japan. Befu does not reject the group model entirely. Rather, he contends that the group model as well as a model based on individualism can be applied to both Japanese and Western institutions and bureaucracies. To that extent, Befu suggests that Japanese corporations and social life may not be as unique as either the Japanese or Westerners think they are.

Kawakita appears to be in agreement with these new criticisms of the unique collectivistic tendencies in Japanese society. He contends that his KJ Method can facilitate group solidarity, and it can operate outside of the context of a *wa*-oriented society. Kawakita has used the KJ Method effectively in development projects in Nepal, which ultimately led to his receiving the Ramon Magsaysay Award in 1984 in recognition of his contributions. He continues to use the KJ Method to promote both socioeconomic development and the preservation of the environment in Nepal. Numerous countries such as Jordan, Malaysia, India, and Mexico have utilized the KJ Method in various development projects. More recently the KJ Method has been identified as an integral part of the revolution taking place in many American management circles to provide for Total Quality Management (TQM) (Shiba, Graham, Walden 1993). Kawakita contends that despite cultural diversity around the world human nature is essentially the same, and consequently the KJ Method is universally applicable. He believes that this method and the practices associated with it will be necessary to meet the changing demands of the modern world.

NOTES

[1] I would like to thank Harumi Befu and David Plath for constructive comments on an early draft of this article.

[2] I became aware of Kawakita's work in 1980 while working as a part-time instructor/consultant with an American multinational corporation, Procter and Gamble, which was involved in training Japanese managers for a subsidiary in Japan. When the Japanese managers realized that I was an anthropologist they proceeded to tell me about Kawakita's contributions. I corresponded with Kawakita during the 1980s about his methods. In 1994 I stopped in Japan on my way to Southeast Asia for research and I interviewed Kawakita to find out more about his methods.

[3] Although Peirce treated abduction as a form of inference and maintained that it is regulated and structured by rules which could be treated by critical logic in a manner analogous to deduction and induction, he never claimed mathematical, deductive certainty for abduction nor did he ever manage to identify rules or principles of abduction. Western philosophers have not made much progress toward completing such a formal treatment of abduction.

[4] Kawakita has developed a more involved KJ Method called the "Cumulative KJ Method" for solving highly complex and difficult problems. The basic approach is similar to the KJ Method but involves assembling all observations, interviews, documents relevant to the problem, and utilizing steps to clarify the focus of the problem (1991:13-14).

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