
ИНФОРМАЦИЯ

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THE ROLE OF GENERATIVE KNOWLEDGE AND KNOWING AGAINST THE FOLLOWING CRISIS AND THE CATAclySM IN THE TWEN- TY FIRST CENTURY*

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Chapter 1. What is Generative Knowledge?

In the analysis of knowledge, it is frequently inquired whether knowledge stems from experience, whether it is established formally, or whether it is admitted that the essence of knowledge belongs to neither of these. Also inquired is whether knowledge is directly intuited or an a priori perception. Further, its relationship with essence, real existence, and truth is also frequently inquired. Need-

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less to say, we are able to propose and discuss various issues related to knowledge, such as its social and historical character, original wisdom (Schelling), tacit knowing (Michael Polanyi), technological knowledge, practical knowledge, school knowledge, etc.

Although knowledge as I perceive it is not unconnected with these issues, I would like to examine knowledge as a human activity, and particularly as an activity of the human brain. In other words, clarification of knowledge, which is dynamic and rich in potentiality, leads us to the most important, fundamental manner of human existence and must be done in close relation to the mechanisms of human neural and physical activity. Let us therefore pursue the essence and function of knowledge in this sense, which is what I have termed Generative Knowledge.

Generally speaking, all of the sense organs are open to the world that they contact at the furthest edge of the physical world. It is from this that a living organism obtains the most fundamental information regarding its survival. As a result, the meeting of sense organs and the world (environment) is a critical and fundamental theme for studies of human knowledge. In particular, cutaneous sensation occupies the most important position of all the sense organs because of its role in life and death and in preserving life. For example, empiricists have discussed the problem of pleasure and unpleasantness. However, they lacked an awareness of the deep significance of cutaneous sensation as part of the base that generates emotions. However, we who live in the present need to grasp the significance of cutaneous sensation when we search for the essence of life or attempt to determine the relationship between the body and the heart. This must never be overlooked.¹

Not only human beings but all living creatures must deal with unpleasantness by making a choice: to flee, to endure, or to fight; to accept, to familiarize, or to change. Human beings are creatures that must grow strongly and stoutly not only physically but also mentally. Accordingly, we must make the appropriate selections to grow. Needless to say, since human beings, as living creatures, always try to move towards their own pleasure, they want to make the appropriate choices regarding unpleasantness. Therefore, when I probe the question of knowledge, identifying the relationship of knowledge to human sensory activity and emotion is the first step to understanding knowledge as a human activity.

Therefore, let us begin with information of the external world captured by the sense datum. When it is knowledge-related information, it is very interesting to observe how such information is incorporated within the human being.

Any kind of information can be taken in through the sense organs. For example, written information can be read by people who are visually handicapped through the use of auditory and tactile senses in the form of voice and Braille. The signals obtained through sense organs enable the brain to determine whether to resist, guard against, reject, or actively receive. No one will touch a tea kettle that is hot enough to burn, but everyone drinks hot coffee. The smell of leaking gas causes us to move quickly to action, while the aroma of herbs makes us feel very calm.

Take this book, «War and Peace». Who was Tolstoy? He was a great writer. Where was he from? When did he live? One of the motives for reading his work is probably to answer such questions. And a person will experience certain feelings just from hearing his name. If he feels nothing at

all, it is because he lacks the knowledge and experience to do so. This familiar case demonstrates that there is a profound connection between knowledge and feeling that deserves deeper study.

What is the destination of information sent as a single signal? It is sent to the brain. What happens to it in the brain? I would like to consider this question in light of linguistic information.

Ferdinand de Saussure proposed that a symbol (sign) consists of a signifiant and a signifie. However, Aurelius Augustinus (Saint Augustine) had already consolidated the semiology of Stoicism a long time ago, and it was inherited by Scholastic philosophers. This theory traditionally inherits the semiology that divides the symbol (signum) into two elements: signans, which is a perception phase, and Signatum, which is an understanding phase.

Roman Jakobson pointed out that any kind of linguistic analysis in particular, any kind of symbol analysis in general, and even the ultimate, complex symbolic unit that is decomposed must be twofold and must include both together. Regarding this point, I will try to reconsider it in relation to the problem of knowledge.

Within the human brain, symbols, words, and language maintain some sort of relationship with human sensibilities and feelings, and those exist together with the images that each person possesses. This image, which I call Sensitive Significativeness, shows that the feeling aspect received with feeling is assigned to the symbol. If these are knowledge with an intelligent nature, the images associated with them are extremely complex, profound, and unique to each person, so that simultaneously it has the

opportunity to be connected with other knowledge elements.

It is conceivable that knowledge materializes as the result of special cerebral functions. When we look at such functions, the knowledge element, delivered as a signal, passes through the tacit nonlinguistic figures that impart Sensitive Significativeness to knowledge and receives determination first at the fundamental level. This is how living creatures process data. Let us advance our understanding a little further. It is conceivable that knowledge exists functionally in the functions of the mind, and that tacit nonlinguistic figures are also a functional existence. Various complex feelings are progressing in these functions, and these feelings lead to experience and knowledge. Moreover, they lead not only to language but also to a wide range of images and memories. For example, memories of musical images, images of paintings, and even memories of scenes require the activity of these tacit nonlinguistic figures and are stored by the activity.

Having confirmed the role of the tacit nonlinguistic figures, I will examine the case of a new knowledge element delivered as a signal. In general, because the new knowledge element is not a violent one that has entered and then collided with an intelligent element without any kind of form or regulation, it needs to have a place (a function) of meeting in order to remove an appropriate existing intelligent element. In this sense, I see a layer (figure), which I call Buoyant, that is in the surface layer of tacit nonlinguistic figures and that mediates the signal. To show its role, I would like to submit a number of rules.

For example, comparing a dog's reaction when called by its name or given a command to that of a human being, the significance and function of language are obviously much more complex in the latter case. However, the role and

function of language differ greatly for each person. In addition to differences caused by job or speciality, I think we need to consider whether or not Buoyant is in an excited state (generation) or has dried up. If the contents of the tacit nonlinguistic figures are youthful, Buoyant is rich and excited, so that an appropriate chain will be guided to it from the tacit nonlinguistic figures. In other words, in the condition in which Buoyant has dried up, Sensitive Significativeness is unable to obtain the strength needed to face other knowledge elements, and the chain is broken, resulting in poor tacit nonlinguistic figures. Let us proceed.

When Sensitive Significativeness is imparted to a language symbol that is received and utilized by a person in both sound and meaning, it takes the form of, and remains as, a co-generative figure, or kaioku. This co-generative figure (kaioku) is transformed into knowledge as Sensitive Significativeness and as an element reflecting the facts. Therefore, when discussing the theory of reflection in terms of the problem of knowledge, we must remember that image-like Sensitive Significativeness and linguistic symbols are combined as knowledge in the state of a co-generative figure (kaioku). We should also note that, according to the findings of contemporary cerebral physiology, Sensitive Significativeness is handled by the right brain and linguistic symbols by the left. This finding provides my argument with scientific and physiological hints and underpinnings.

Knowledge in an excellent co-generative figure (kaioku) state generates or activates and then exists functionally to maintain a complicated network-like chain with many other knowledge elements. This is Generative Knowledge (GK). On the other hand, there exists knowledge that does not develop strong connections with other knowledge elements, or that reacts only to particular things. Such know-

ledge, which is not generating, I refer to as Ungenerative Blocked Knowledge (UBK).

Although human beings do not like Ungenerative Blocked Knowledge, we incorporate it when forced to, or, as in the case of an experiment, when we are given an objective that requires us to incorporate it. When the circumstances are considered, it is impossible to overlook the fact that knowledge has the aspect of being incorporated by external motives. Take the case of a boy who learned the square root of a number to 100 places. If he was forced to do this, and received no compensation for it, this memory would be nothing more than a heavy burden on his brain. On the other hand, if it was remembered voluntarily as a confidence-builder and as a challenge to his memory and attracted the attention of people around him, the remembered information would not become a burden, because pleasant sensations would accompany it. Needless to say, this kind of remembered information has an opportunity to be utilized in a certain mathematical convention or principle. However, its usefulness is limited if the significance of the word «square root» is not grasped. Accordingly, the problem is how we incorporate this word as knowledge. Needless to say, each person understands it in different ways. There are also other subtle differences. For example, does the person in question have an image of the square and understand the meaning of the square root based thereon? Does he have the capacity to process knowledge on the history of ancient mathematics? If the knowledge, because it was taught forcibly, lost its ability to achieve strong bonds with related knowledge elements, knowledge series, and knowledge systems, it remains in the brain as Ungenerative Blocked Knowledge.

Here I would like to discuss an importance of the question

determining whether knowledge becomes Generative Knowledge or Ungerative Blocked Knowledge, namely, whether opportunities arise in the form of doubts or questions and are utilized.

A doubt or question shakes the tacit nonlinguistic figures, enhances Buoyant sufficiently, and tries to grasp the knowledge element or what it represents. Viewed from a different perspective, a person possessing Buoyant that has been activated with vital tacit nonlinguistic figures doubts and questions to obtain the satisfaction of his Sensitive Significativeness. In the process, the co-generative figure (kaioku) responds, and the activated thought activity is developed. Sometimes questions must be provided externally, as from a textbook. However, if they do not respond with something deep inside a person, they can elicit nothing more than a search for an answer.

Doubts and questions are not merely approaches to single intelligent elements. To welcome new knowledge, Generative Knowledge uses doubts and questions to differentiate and determinate the category which the knowledge element should belong to. At the same time, it leads other, already obtained, knowledge towards that knowledge elements in a logically composed form. In this way, doubts and questions accomplish a critical role by giving real vitality and rich content to knowledge. Hence it is clear that «infusional education» is an act that is not respectful of the intelligent autonomy of the human being, and it is also clear that this kind of education serves to take away the intelligent autonomy of young people.

A brain that has become hard with Ungerative Blocked Knowledge finds it hard to conduct intelligent activation, and therefore is not good at doubting and questioning.

When this condition becomes severe, the brain is no longer capable of receiving Generative Knowledge. It becomes able to accept only Ungenerative Blocked Knowledge, and eventually it tries to avoid knowledge itself. A person who stops reading books or thinking after leaving school is a victim of Ungenerative Blocked Knowledge to a greater or lesser extent.

It can be expected, therefore, that Generative Knowledge becomes basis for extending the creative possibility of human beings and enabling them to know widely and deeply. When it is used socially, I think that Ungenerative Blocked Knowledge is very dangerous because it creates a very narrow region in the function of one's brain. To consider this problem, we need to probe the essence of intelligent activities.

Chapter 2. Essence of Intelligent Activity

Weltanschauung (world view) and philosophic nature of knowledge, Command state of knowledge, apparatus knowledge, human wisdom, false generative knowledge, true generative knowledge, and other problems.

In a book in 1966 («Introduction to Marxist Gnosiology»), P. V. Kopnin pointed out that knowledge is mediated by human experience. He wrote that all knowledge is a unification of direct and mediated knowledge. He went on to say that sense and perception become knowledge only after taking the form of the judgment of the elemental cell of knowledge.

I would like to discuss the latter issue at a different opportunity. A problem drawn from the former is that when mediated knowledge is established as a concept with one enti-

ty, its content may take the form of the definition, but it never ends there. Why? The reason is that knowledge is not a single, complete entity formed by clear boundary lines; instead, it is a possibility voice (even in the presence of social constraints) and something that is established by a variety of connections with other knowledge and logical forms along a central axis. Consequently, it has the power within itself to create new knowledge and to become a motive. Thus it can be described by the term possibility voice. Knowledge itself is the possibility voice, and therefore an image-like exertion is born within the individual, and this demands a rich Sensitive Significativeness. Accordingly, we cannot deny that Ungerative Blocked Knowledge has the nature of anti-knowledge.

Ferdinand de Saussure held that a language symbol is the arbitrary thing that connects a concept and audio pictures. Thus, as a linguistic symbol level problem, I believe that Signifie, which has a concept or translatable content, can be derived and evidenced not only at the individual level but also by socio-historical, empirical, or scientific content. It is easy to imagine this becoming a more complex type of knowledge problem once we reach the level of language and thinking. The first thing to be considered when pursuing this issue is the fact that human beings are well-known as social animals. Therefore, we must consider that human relationships, which form the substrate of social relations and which are the most realistic foundation of life, are manifested in mutual communicational activity. There has already been much discussion and research on this issue. Therefore, I will limit my discussion to the following aspect, as a problem of knowledge.

I focus on the point that knowledge and the thought activity that uses it can develop social ties, and that its significance is demonstrated by real activity that deepens recognition of self and the external world. Namely, the significance of human beings saving and using knowledge is that, as they acquire the knowledge that is related to nature and environment and society and human beings, they also gain the ability to understand the various relationships and associations that hold between these entities. If this were not true, human beings could not have developed to *Homo sapiens* from the anthropoid. In the fundamental sense of human beings becoming human beings, all of us have the energy to contribute to our survival and growth. In other words, we have a strong preference to collaborate with other human beings, societies, jobs, thoughts, environment, and nature. Accordingly, awareness of this contribution is very important, and raising or developing this preference is an important purpose of developing our life as human beings. Needless to say, knowledge and thought activities are sometimes utilized to reject items that are not suited to the self.

In this regard, we must examine the meaning and the way of knowledge in the following manner. With what does my knowledge tie? What part of me is it enriching? Is it something human? Does it contribute broadly human happiness? When we forget to ask these questions, knowledge stops bearing culture, and we have lost the nature of genus existence. It stops being human wisdom. In certain cases, it may become a weakness that can be used for extremely one-sided, dangerous trends.

In response to these questions, we must call into question not the apparatus knowledge that was incorporated into the function of the apparatus but the human knowledge which

we have incorporated into our own functions. These must not be confused.

Let us now proceed. I think that human wisdom involves a level of knowledge that plays the role of supporting knowledge and intelligent activity, controlling them and applying them. I also think that it materializes through deep contact with the desire for human survival. Both cases must be combined. I would like to call that state of wisdom the Command State, and feel there is a need for us to reach a more fundamental understanding of knowledge. My understanding of the Command State of wisdom is based on my belief that human survival cannot be accomplished alone but can be achieved only through the power of love and warmth while incorporating various other dynamic opportunities. The process is accomplished by instinct. The desire to survive found in the higher animals is tied firmly to the parent-child bond from the beginning. Thrown out on their own, without the protection of parents, higher animals are unable to grow up. If their mental relationships with other people are weak, human beings will be unable to foster human feelings, even if they are given food and shelter. What is frightening is that humans can sometimes cease to be human beings. It is only humans who are able to become like demons or lower animals. Therefore, we must consider the Command State of wisdom. The field of ethics has long searched for the way of the Command State. I would like to view it as a theory of knowledge, within the human recognition structure.

We can deepen the nature of the origin of knowledge in the following manner. Firstly, in the above sense, human knowledge has enough structure and function to be tried in a wide view of the world to move inevitably towards the happiness of human beings and human kind. Let us call

this Weltanschauung (world view) nature of knowledge. In this aspect of its nature, it includes the understanding of and motive for the happiness of human beings and human kind. Secondly, knowledge has a tendency to create a foundation and move towards the basis of wisdom. Let us call this the philosophic nature of knowledge. The logical and scientific aspects are understood as the key pillars bearing this nature. The Command State of knowledge is the place where these key matters are received as fundamental demands. Accordingly, we must raise and utilize this structure and function. If the Command State starts to give extremely biased commands, we must question that person knowledge formation and the relation between with his formation as a human being. The knowledge that functions only on such a biased foundation bears an intelligence handicap that can be termed false wisdom. It is knowledge that cannot be permitted even if it is generative. In Ungenerative Blocked Knowledge as well, the seedlings of development have been shut out. We must watch out for a certain kind of Ungenerative Blocked Knowledge (false Ungenerative Blocked Knowledge) that has transformed into an abnormality that responds obediently to a kind of anti-human appeal. We must all avoid falling into this type of knowledge.

We have shown clearly that Generative Knowledge must be true Generative Knowledge, which performs an extremely productive activity with its Weltanschauung (world view) and philosophic natures. Namely, we must watch out for not only Ungenerative Blocked Knowledge but also false Generative Knowledge. I will discuss the problem of false Generative Knowledge later.

The most important problem is the formation of the Command State that guides all wisdom. The Command State is

formed centering around everyone education since birth, and it makes the importance of education paramount. If education becomes something that is forced, in the form of diagrams, memorization, subjects, or tests, only a few people would seek out the rich world of knowledge. For most people, it would be very difficult to create the Command State through the pursuit of knowledge. Thereupon, I would like to discuss the important role of education in light of an experience that everyone has had.

Small children often create difficulty for their parents by repeatedly asking «Why?». The question «Why?» provides perfect evidence for the fact that they belong to the genus of humans. The brain questioning Why? is what becomes the source of true Generative Knowledge. Therefore I think that it is an extremely important intelligent stage. It is not ordinary, but is connected with the vitality of life. I think that it is the most important element in Command State formation. In other words, it should occupy the first rank in human education.

What is next most important? It is that knowledge is deeply indebted to the long history of human beings and to the history and tradition of each race. Certainly, the policy of injecting, or infusing, knowledge brings about undesirable results. However, nor is entrusting education to the learners themselves recommendable, because they will be unable to absorb the intelligent activity that has been gained over our long history. Knowledge needs to satisfy the form and condition, as science, for example. It requires logic, and each stage must be considered, including methodology. But are these appropriate? Are the voluntary thoughts and doubts of the learners capitalized on and developed? The problem straddles both issues.

Regarding the latter, I think that it is important to give learners the latitude and opportunity to think and question for themselves. In short, the forceful use of diagrams, memorization, subjects, tests, and so on only causes students to behave unnaturally and does not provide them with latitude or opportunity. As numerous examples have shown, such policies do not draw out each individual true capabilities and potentials but instead crush them.

Knowledge must be utilized with the *Weltanschauung* (world view) and philosophic natures as a foundation in the form of Generative Knowledge that was co-generatively figured together with the formation of the Command State. I believe that we must work towards the liberation and development of the human race and live our lives based on an understanding of these problems.

¹ In the main discourse, I am unable to examine in detail the significance of cutaneous sensation with respect to the essence of body, heart, and life. However, the next concrete fact may be to give the basic recognition that cannot be overlooked when considering future human relations and remedying the pathology of modern man. First of all, we are very sensitive to air. Especially, our reaction to odors and temperature have an impact on our survival and are therefore sense actions of the first degree. This sense expands to beyond the perception of air and space, and the judgement function develops in a complex way. However, it does not limit itself to the judgement function, but has developed to give the feeling of pleasure and unpleasantness to the brain and to the whole body as an internal perception.

Generally, living creatures have an instinct of realizing and securing the basis of their own survival by contact with their parents or with similar creatures. For human beings, this results in the creation of a unique mental world and provides the foundation for psychological growth. Several years ago I cared for a fourteen-year-old girl whose

mother committed suicide over her daughter. The girl suffered from eating disorders, with anorexia giving way to bulimia. When she began to behave violently and fainted, my daughter (who was the same age as the girl) and I rubbed her arms and hands for about an hour. Her physical perceptions provided her with psychic peace of mind because our deed was one of affection showing very natural and basic consideration and empathy. When she awoke, the girl looked at us with a very calm facial expression. In my opinion, it was because she had been unable to expect the same kind of act from her parents. They tried to create a template for her to adapt to school life and wanted her to have a good reputation in the neighborhood. She was a sensitive girl, and various unhappy circumstances at home, school and in her social life overlapped and cause her to become psychologically unstable.

In addition, she had also suffered other, even worse, circumstances. In her case, the results of psychiatric testing and counseling were terrible. After being treated by a psychotherapist, she was hospitalized forcibly. Life in the hospital was extremely disappointing and discouraging to her, when it was most important in terms of human contact. In particular, she thought ill of the parents who had permitted hospitalization. While doctors in the hospital studied her mind, they did not touch her heart, and effectively chopped it up. In such cases, it must be understood that science cannot produce satisfactory results unless it treats the human being with great care and affection. This example showed clearly that cutaneous sensation forms a foundation affection. The field of dermatology is concerned with the various skin troubles that are manifestations of psychic stress. We must not let people fall into not just cutaneous ailments but also ailments of the soul.