

## On “Society Thinks, Therefore Society Is”

—Also on logically starting point of social epistemology and social information Science

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**Abstract:** In this paper, we advance and explain a proposition, "society thinks, therefore society is", and believe that the proposition is the logically starting point of the social epistemology and social information science. There is a Hierarchical structure in the world of life. Observing at human individual level: individual thinks with his brain but each of his cells can not think, even a nerve cell; though society consists of individuals, but it can not think because it has not a brain like individual's one. However, from the viewpoint of theoretical informatics, society, person, cell, DNA, and bio-molecule have a common feature, i.e., "input - processing - output" (IPO) of information, then they are all able to think though among them there some difference, i.e., the distinction of the structure and content of their thought. If the Descartes "I think, therefore I am" is the first assumption of individual epistemology in the industrial era, then in the information age, the first assumption of social epistemology and social information science should be "society thinks, therefore society is".

**Keywords:** Thought, subject, epistemology, social information science

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In the opinion of traditional epistemologist, there is not a discipline such as social epistemology. According to cognitive subjects, there are two kinds of cognitions: individual consciousness and social awareness. Traditional epistemology holds that knowledge is self-government, and only individual or the self is able to obtain reliable knowledge. Whether Descartes, Kant, or Husserl, they all deem that the subject who grasp knowledge is only a single self, and the difference among them is the diversity of the way in which they access to knowledge. It was even said that the tradition of whole modern epistemology is a kind of "individual epistemology". Society does not have a "brain", so it can not think, and self-mastery and self-awareness for society can not be achieved [1].

In the light of theoretical informatics and intelligence spectrum in the universe, not only

individual but also any organism can think, i.e., all biological subjects, who transmit DNA and culture, have their thought even there are some differences in the content, language, structure, and function within the procedure of information processing (IPO), and it is these different ways of thinking that comprise a complete chain of evolution.[2] "Individual brain" is a neural network, in which a neural cell (cell brain) can not think in individual level. "Social brain" is an individual network, in which an individual can not think in social level. If the first assumption of individual epistemology is Descartes "I think, therefore I am" in the industrial era, then in the information age, the first assumption of social epistemology and social informatics should be "Society thinks, therefore society is".

## 1. Descartes: "I think, therefore I am"

Descartes, as a great mathematician, proposed the concept of a Cartesian coordinate system, created a study of analytic geometry by means of linking "number" and "shape" through the corresponding between numerical equation and geometric graph, and laid a foundation for the calculus, then he tried to equip philosophy with mathematical precision, to solve the problem of human intellectual certainty, supply philosophy with a new starting point, furthermore rebuild all of philosophy, thus he became the "Father of Modern Philosophy" [3].

Descartes pointed out that it is difficult to answer question with certainty in philosophy and there are numerous conflicts, because it does not have a sound basis. The only way to establish certainty is mathematical deduction. If philosophy is to become a deductive system, like Euclidean geometry, we have to find completely determined and really true premise (axiom), because if the premise of uncertainty in a deductive system is half-right and half-wrong, then its conclusion (theorem) has not much value. Therefore, the scientific ideal, borrowed from mathematics and deduction components of scientific method by Descartes, had led to a question: How can we find an absolutely determined prerequisite for this **deductive system** of philosophy.

If a logical proposition without any doubt can be found, we can interpret this proposition as the premise of the system to use. Note the emphasis here is that the proposition is logically undoubtable, rather than the content of the proposition itself is reasonable. In other words, the Cartesian "doubt" is not to be found in "what is reasonable suspicion" but "what is the logically suspect possibility." For Descartes, he's suspicion has pre-defined: an individual, rather than (say) a researcher community, is a single subject who puts out questions. Therefore, the answer is that definiteness which terminates Descartes doubt is the certainty of individual who is thinking.

**Descartes said** that he can doubt everything, but can not doubt that he was "in doubt", i.e., the fact that he himself is conscious and exists. So, his suspicion confirmed that he exists. He has this idea

expressed as a phrase: "I think, therefore I am" (in Latin: cogito, ergo sum). "I think, therefore I am" confirmed the existence of my own thinking. But what does the "I" mean? Obviously, I am a thinking thing. What is a thinking thing? It is a thing that is in the sense, in the identification, in the suspect, in the understanding, in the affirmative, in the negative, in the will, in the refusal, in the imagination, in the plan, in the evaluation of some things. Because thinking is a process and an activity, any thought can not depart from thinking thing while exist, then there must be a thinking subject, a thinking thing. This "thing" is not physical, but a thinking entity, whose existence does not need any space and not depend on any material things.

An explanation is needed: the proposition, "I think therefore I am", can not be understood as a conclusion derived from an established premise, that is to say, where "therefore" does not mean a logical inference from "I think" (as the premise) to "I am" (conclusion). An insight in "I think, therefore I am" is the implication: as a skeptic, I think, at same time I exist. Taking a thinking individual as the starting point of epistemology is a feature of many philosophy in early modern times, including rationalism and empiricism [4]. But the starting point is based on a determined pre-hypothesis: "individual, rather than a researcher community, is the single thinking subject who proposes questions." If subverting the fifth postulate of Euclidean geometry caused a non-Euclidean geometry, a complete new knowledge system, then the subversion of the pre-hypothesis, "individual thinking", will set up a new theoretical system.

Now, we have seen: if subverting the pre-hypothesis, "individual is the subject of thinking", then not only individual, but also group, organization, society can think. In fact, after Descartes, Hegel oriented to history and Pierce were interested in a community of researchers and the advances of scientific knowledge. By Lukacs, Marx's philosophy can be summed up in "ontology of social existence". He had clearly put forward that the "**social awareness**" is the communication device for relationship and that a formed society comes from the role of awareness, not the role of substance. Therefore, he stressed that like the formation of a person, in the

creation of society, awareness is not an accompanying phenomenon which is isolated above it or floating away from it (subsidiary phenomenon, or secondary characteristics, etc.), but a creative factor which is actively involved in from the beginning. [5]

In the research on social epistemology and social informatics, we gradually realized: in the ontological sense, clarification and strengthen of the concepts of "social thinking" and "a thinking society" is timely and necessary. "Social thinks, therefore society is" should become the first hypothesis of social epistemology and social informatics in the information age. As noted above, in a deductive system, where if the premise is uncertainty, half-right and half-wrong, then the conclusion (theorem) is not much valuable. In Descartes deductive system, affirming "I think" and "I am" is right; but his asserting, that thinking thing can not be researcher community, is wrong because in effect he rejected a fact, a thinking society exists. His conclusion is a great landmark; but it is incomparable with the height reached by social epistemology and social informatics.

## 2. "Society Thinks, Therefore Society Is" in the Information Age

### 2.1. "Think": a textual criticism

According to Chinese-English bilingual "Modern Chinese Dictionary" (2002), "think" means conceive, consider, and deliberate. It said that think is "a deeper, thoughtful activities"; and is the process of analyzing, synthesizing, judging, reasoning and understanding based on the appearance and concept. Thinking is the particular kind of human spirit activity and is generated from social practice."

*Webster's New English Dictionary* (Third College Edition) in USA explains: **vt. 1** to form or have in the mind; conceive [*thinking* good thoughts]. That means as a transitive verb, the first meaning of "think" is: to create or get in the mind; for example, "come up with a good idea." Think and conceive (concepts, ideas, plans, etc.) are synonymous. *Collins English Dictionary* (21<sup>st</sup> Century Edition) in United Kingdom (2000) explains: **vb** to consider, judge, or believe: he thinks my ideas

impractical. *Canada Penguin English Dictionary* (2004) explains: **verb 1** to use mental powers; to produce or work on ideas in the mind.

Under the guidance of the concept of individual epistemology, the thinking is only a personally spiritual activity, not be explained as social thinking. In the sense of "knowledge" corresponding to "behaviour", the human activities of mind and body are interrelated and mutually conditioned. Man's thought is always related with the "purpose" and "intention"; it is to be selective: what is thought about, and what is not. Thus, the first task of thinking is "objective setting." Objective setting can point to objects or persons, the latter is to influence the purpose setting of others. By the influence of others' objective setting, we may coordinate the man's relationships, build social connections between people, actually set up human communities, and form a thinking society.

### 2.2. I think and a neuron thinks

From the biological point of view, the organ to achieve the function of "I think" is human brain. It is the most important part of the nervous system for regulating body functions. The basic unit of nervous system is neurons (nerve cells), and each nerve cell is a separate entity. Brain is composed of about 14 billion brain cells, whose weight is about 1400g, the cortical thickness is about 2-3 mm, the total area is about 2200 square centimeters. Although it only **accounts for** 2% of body weight, but its oxygen consumption reached 25% of body's, its blood flow accounts for 15% of cardiac output, the blood flowed cerebrum in a day is 2000 liters.

Thinking is separated from our daily behavior, and has its own special rules. It is not only the acts under the auspices of man's **survival consciousness**, but also the act of emergence, development, and end under the command of subject's thinking **awareness**. Thinking is the common manifestations of **survival consciousness** and thinking **awareness**. Think is the implementation of thinking order, the realization of the thinking intention, is the implementation of thinking program, is the natural display of **survival**

**consciousness** and **thinking awareness** in real life.

"I think" is subordinated to and serve the "I need" in the background of social work, practice, and value creation. From the point of view of theoretical informatics, the subject who thinks is the information subsystem of "whole me", but the subject in my need include my overall physical subsystem and information subsystem. The needs and interests of the overall or the local, is usually the same, but sometimes they contradict each other, as the situation among nation, collective, and individual. Sometimes we stress the overall interests and needs, but give up the local interests and needs. In this sense, even if we think that each neuron can think, then neuron thinking and brain thinking are not the same.

Except mature red blood cells, each cell has a nucleus, which is the center of regulating cell function. A nerve cell normally contains three parts: cell body, dendrite, and axon. It is an excitable cell, whose basic characteristics is: when being stimulated, it produces nerve impulses transmitted along the axon. Among nerve cells, they contact with each other through synaptic. The length of the nerve cells of giraffe can reach more than 3 meters. Transmission speed of nerve impulse of brain's nerve cells is over 400 km per hour. Sometimes, several synapses function on the above of a neuron, in which some caused by depolarization and some cause hyperpolarization. Finally, whether the axon of neuron can form a impulse released, it depends on the sum of all the results. For the motor of a typical neuron, it is readily apparent to be divided into three components: (1) calculation, that is to integrate the results of all the synapses; (2) communication, that is to conduct rapidly the signal issued by the impulse; (3) control, that is to cause an action potential by the nerve impulses from the nerve endings in the muscle membrane; when the action potential spread into the muscle fibers, it causes muscle contraction. Here, there is a clear process: formation of a directive, transference of the order, and the execution. The "thinking" in neuronal level is the starting point of the entire procedure.

According to Cartesian dualism of mind and body, the mind, in accordance with a thinking pattern, is thinking; but the body, with the extensive characteristics of physics, is certainly not thinking. If we treat with the mind as a system, then its thinking is the emergence of the whole spiritual characteristics, and any local part of the system does not have features of the whole. In the level of individual decision-making, social awareness, and social information processing, man's single cells in living organisms, as well as nerve cells, are not thinking. If we take the individual cells as the object of study, it has very complex information phenomenon, with different characteristics of the information input - processing - output process. So, "I think" and "cell thinks" are established, the only difference is that they occur at different levels.

### **2.3. I think and society thinks**

According to Descartes, I exist and think. In the previous section, we learn from the perspective of theoretical informatics: the essence of human thinking is an information processing; in the lower level of life evolution, a cell can think, and function of neurons is information processing. According to this idea, it is easy to guess: society thinks also, but it takes different form and content from cell and individual [6].

A single human being exists always as a member of a family, group, organization, and society. In the procedure of pursuit of the development and adaptation to the environment, the society, organizations, groups, and families must coordinate their own to deal with competition and challenges. Without such information processing and innovative ability, race himself must be eliminated by the nature and environment. Like DNA takes the biological individual as a means of delivery, the social culture takes human individual as the tool of inheritance and development. Our individual life course is short, but in the relay of DNA and culture, a race is constantly improving itself to optimize conditions for survival. In other words, since human society is developing, it is not only thinking, but the creation of its thinking is remarkable.

We can study both the structure and function of social thinking. From a structural point of view, as the cell network realizes the thinking of individual, the network of people constitutes the social thinking. First of all, the network of a man is stable and fixed by the links of cell material, maintained by the laws of physics and biology, and thus become a prerequisite for information contact. However, in the social network, information contact plays a decisive role, i.e., people's interests and needs determine the relationship between them, and determine whether they need a substance connection between them or not. From the functional point of view, just like other animal species, we need to be survival and developing, human society, as a whole, in order to adapt to the environment and respond to disasters, must have the knowledge and wisdom for solving local and global problems and crises faced. In 2009, United Nations organized a global cooperation to address the financial crisis and influenza A H1B1, which is a very typical example.

In above section, we explore thinking from person to cell. As a similar situation with it, once a concept of social thinking formed, when we look at individual thinking again, it becomes a "cell-thinking" of the whole society. A person, once he comes from his mother's womb to the world, can not talk and read, but through educations in his family, school, and society, he is constantly being "socialized", as a member sharing social culture. Then he is possible to think along with the way allowed and promoted by society. If he is anti-humanity and anti-society, he is not qualified as a member of society, he should be removed, then there is no possibility to continue his thinking. The best human thinkers and great masters of culture and science passed away one by one, our society does not stop thinking, but accelerates the pace of progress.

Of course, perhaps there is another level of evolutionary ladder of life in the universe, which is the progress from a global village to the "cosmic village". Earth human beings are exploring other possible planets similar to Earth, where the conditions of life exist and there may be the same intelligence as the Earth human life. When the Earth society combines with planet X, Y, etc. to pass on and

promote each other, the Earth society thinking may become another look.

#### **2.4. Comparison of the two thinking leap: from cell to individual and then to society**

Under the guidance of world outlook and methodology of theoretical informatics, taking "I think, therefore I am" as a starting point, we tend to recognize and understand the cell thinking and social thinking. These three forms of thinking emerged in different levels of the evolution ladder of life. By comparison, we can see: there is a big step from cell thinking to individual thinking while the progressive step from individual thinking to social thinking is much smaller. In other words, in a certain sense, the "distance" between social thinking and Individual thinking is much shorter than the span between individual thinking and cell thinking. Be clear about this idea, for our understanding of social thinking, is very useful.

**First of all**, let's compare the quantity of their basic units. According to the point of view of system theory, if the elements of a system are more, the relationship among them is more complex, then the whole system has higher complexity, and is more difficult to coordinate and control. The element of human body is cel, but the element of society is individual. All cells in a person's body totally is about 40 - 60 billion, the population in the current global village is 6.3 hundred million. The number of a single human's cells is nearly a million times larger than the number of people in human society. Clearly, the coordination and control of thinking of cell society is more difficult than that of thinking of human society.

Secondly, let's compare the proportion of space size. In the early 60's of 20th century, scientists calculated the diameter of the Earth's poles: 12 713 884 meters by means of satellite and computer. In 1976, the International Federation of Astronomers announced that the figure of the equator; according to this figure, the polar diameter should be 12 713 510 meters. In order to calculate simply, we assume that the polar diameter of the Earth is 13 million meters, and two people are standing in the Antarctic and the Arctic to communicate with each other. If

we assume that individual's height is 2 meters, then the straight line distance between the Earth's poles is 6.5 million times higher than a person. The smallest cell known now is mycoplasma; whose diameter is only about 0.1 microns, seeing it only by electronic magnifying glass. In order to calculate conveniently, we still assume that individual height is 2 meters, then the distance from person's head to his feet is 20 million times higher than the diameter of the smallest cell. Thus, the ratio individual and cell size is three times bigger than the ratio of the Earth and individual dimensions.

Third, let's compare the numbers of the turn of the new and old members, i.e., from their birth to the death. In a human body, there are 100 million cells died per minute. Some white blood cells in human blood can only live a few hours. The life span of intestinal cell is 3 days, liver cell's life is 500 days, while the brain's nerve cells and bone marrow in the life is several decades, almost equal with the span of human life. The number of deaths per year in the world population is less than 100 million. The death rate of members in cell society is much higher than mortality rate in human society.

### 3. Conclusion

To sum up, the progress from "I think, therefore I am" to "Society thinks, therefore society is" is the advance from cell society thinking to human society thinking, and also is a upgrade of recognitive subject from industrial society to information society. Social epistemology is bound to determine society as recognitive subject. Here we focus on the discussion of social thinking and existence, but we are not involved in the structure, content, mechanisms, etc. of social thinking because these are the problems after the establishment of the prerequisite for social thinking.

Professor Kang Ouyang is an earlier researcher on social epistemology. In his opinion, there are three senses of social epistemology in general. The first is the "social knowledge" or "social awareness", which holds that human recognition is the

understanding oriented to specific objects, by means of particular social tools in specific social conditions; it stresses the social nature of knowledge, including recognitive forms, means, and contents. The second is specifically recognition of society, as a subject, which is different from individual awareness and stresses the levels of subjects. The third is the recognition towards society, based on this, the knowledge about how people learn of society is social epistemology [7]. If the first and third kinds of social epistemology have been explored more in the past, then in the future the second social epistemology will rise to prominence rapidly.

In recent years, the scholars in Japan, Russia, United States, and China has started the research on social informatics. In October 2009, with the convening of "First International Workshop Social Information and System Science" at Huazhong University of Science and Technology (HUST), a tide of international study on "social thinking" will appear. In the formation of Social Information Science Institute at HUST and the Seminar, Professor Kang Ouyang pointed out: "In a certain sense, social recognition is the procedure of collection, identification, processing, and dissemination of social information. The task of social epistemology is to reveal the complexity of social information and help people to handle the social information better. Specific object and focus of social epistemology and social Informatics are different, but their goal is the same, even to say, the two studies are two different aspects of one problem. Their researches can be complement each other." [8]

We believe that with the establishment and affirmation of the proposition, "Society thinks, therefore society is", the study on social epistemology and social informatics will get their logically starting point and their first hypothesis. The deeper research on "social thinking" will mark the development and leap of subject of social awareness itself.

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