



Extended Abstract

The Chinese Way of Information Research Is Opening Up

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The 3 advantages of Shannon's theory are: (1) by excluding semiotic information to avoid the information complexity; (2) by limiting pragmatic information to remove the information complexity in the sense of axiology; (3) by quantitatively describing syntactic information based on statistics to provide quantitative method for communication technology. Meanwhile, however, which leads to 3 disadvantages should be conquered for the future of information science. The thesis from Wiener that Information is Information, not material and not energy which gives a breakthrough, that is, to abandon Mechanical Materialism and establish Dialectical Materialism for information times.

Wu Kun's theory gives rise to the ontological question, on the one hand, given a challenge for classical description on being in Dialectical Materialism, on the other hand, insisted on the basic position of Dialectical Materialism which pointed out the objective world composes with material and information, the material is the first existence, the information is the second existence. Based on the ontological core, he build up his philosophy system as the response for information times. The finding of information also give a chance to Idealism which can be looked up in Wheeler's information theory. What he mentioned about information can be treat as variant from the Absolute Spirit in Hegel's thought. What the Wheeler's theory advocated is Information monism and can be titled as informationism which is the reflection of Idealism in information times.

The core of dialectics is the law of the unity of opposites, Marx conquered Hegel's Idealism by denied absolute spirit and built up Dialectics based on Materialism. However, he left another logic loophole, that is before the appearance of human spirit, material has no opposite side, and object is not following the law of the unity of opposites. It illustrates that the law of the unity of opposites is not a general rule, but a local one after spirit appearance. The finding about information and Wiener's thesis represent that the original being in object world is the unity of opposites and therefore composed double meta-contradiction in universe, everything is generated from it. How do material and

information keep the relation of unity of opposites before appearance of human spirit is the urgent and important question for materialistic dialectics.

Information science faces a huge opportunity. On the one hand, the world view based on above reveal a unity of opposites relationship between material and information, that will effect and leads to a theory development of information science. On the other hand, as the improvement of engineering, information science need to creat Necessity and Possibility by obtaining instruction from technology science and supporting experience to it. Such as dig bata which let us know that Shannon's theory still follows Reductionism and belongs to microeconomics study for information phenomenon, lacking of the whole inspection about information in super system. To satisfy the actual requirement from complexity super system, we need to conquer Reductionism in information study.

Information study gives an effect on the whole development of science, not just limited in information science. It even gives a historical effect on the process of science system evolution, that is, turn simplify science to complexity science. Redefine the concept of Two dimensional science from Klir, we can affirm that the evolution of transform of system of science must be from one dimension to two. The simplify science is one dimension science which just focuses on matter and motion as well as energy transfer. Besides, the complexity science is two dimension science which proposals to take the combination of material and information into consideration.

In China, information research starts from 1960, it began with introduction and study on Shannon's theory for the requests from development of communication technology. In 1980, depends on support by Qian Xuesen, this area welcome a climax. Generally speaking, the research by Zhong Yixin, Wu Kun and Yan Xueshan represent the academic level in modern China in this area. There are still a part of researchers raised various information topic and theory which represents the foreground of Chinese way of research. In order to smooth this way, the researcher need to explore a suitable way by knowing the situation in modern China, pointing at the modernization and leading by question. Chinese culture full of information cognition, the traditional Medical Science, Agriculture, Architecture and Military Science all contain the information way of thinking. Inherited and Carried forward are necessary for the development of information science.

References and Notes

1. Wiener, N. *Cybernetics, Or Control And Communication in the Animal And the Machine* (In Chinese, Translated by Jiren Hao); Science Press: Beijing, China, 1962.
2. Wiener, N. *The Human Use of Human Beings: Cybernetics And Society* (In Chinese, Translated by Bu Chen); The Commercial Press: Beijing, China, 1989.
3. Wheeler, J. A. *At Home in the Universe* (In Chinese, Translated by Song Tian & Meifang N.); Beijing Institute of Technology Press: Beijing, China, 2006.
4. Mayer-Shonberger, V.; Cukier, K. *Big Data, A Revolution, That Will Transform How We Live, Work, And Think* (In Chinese, Translated by Yangyan. S. & Tao Z.); Zhejiang People's Publishing House: Hangzhou, China, 2013.
5. Marx K.; Engels, F. *Selected Works of Karl Marx And Friedrich Engels* (Vol. 3); People's Publishing House: Beijing China, 1995.
6. Lenin V. *Selected Works of Lenin* (Vol. 2); People's Publishing House: Beijing China, 1972.

7. Kun W. Basic Problems of Philosophy And Essential Turning of Philosophy. Hebei Journal, 2011, 4.
8. Dongsheng M. On Wheeler's Information Viewpoint, Journal of HUST 2008, 2.
9. Runsheng C. Entropy. Encyclopedia Knowledge 1982, 10.
10. Zhigong L. On the Two Attitudes of Information Research. Digest: Nature Science Abroad 1974, 2.
11. Shen L. The Debates about Concept of Information in Soviet Philosophy Circle. Social Science Abroad 1980, 7.
12. Huaizhen Z. Philosophical Analysis to Information Method, Philosophical Researches 1980, 9.
13. Huanjie Z. Information And Reflection, Philosophical Researches 1980, 12.
14. Dongsheng M. Restricted View on Complexity; Intellectual Property Publishing House: Beijing, China, 2014.
15. Chendong L. Understanding Red Mansions; China Archive Publishing House: Beijing, China, 2006.