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Human Nature-History-Honesty Norms of Scientific Ethics

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Abstract
The responsibility of science organization is not only expanding the correct knowledge, but also towards the goal that trying to gain greater benefits for human being. So, in different situation, it can constitute the different understanding and evaluation of scientific activities. Scientific ethics norms include human nature, history, honesty, etc., they constitute a tetrahedron. But in the real scientific activities it is not always like that, the tetrahedron changes with the specific conditions.

Key words: Scientific ethics norms; Human nature; History; Honesty

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1. THE PROPOSITION OF SCIENTIFIC ETHICS NORMS

In the past, scientists are considered as people who are always full of unique disposition, erudite and noble morality. They are always "science for science", and satisfy their desire for knowledge. With the division of labor in society, the science also enters into professionalization nowadays. The scientists have already become the normal producers of society from the academic amateurs who seek the truth simply. In this way, as a career formed by the division of labor in society, the science undoubtedly has the social responsibilities that it is unable to shirk. And when the scientists are performing their duties, they will touch the problem of scientific ethics norms.

About the scientific ethics norms, C. Babbage, British professor of mathematics at Cambridge, had pointed out that to modify data is a dishonesty act in scientific research. However, it was not until the 1970s that people paid attention to the scientific ethics norms and began to academic study it systematically. In 1974, The United States congress asked the research institutions which accepted the scientific research fund should establish Research Ethics Committees. And in 1975, an international organization named "The Committee for the Scientific Investigation of Claims of the Paranormal" (CSICOP) was created, and the magazine Skeptical Inquirer was published (Liu, 2001). Germany, England and other countries, as well as The World's Scientific League International Scientific Organization, established various institutions of "scientific moral", made moral standards of the common scientific behaviors, supervised and investigated the research misconducts, educated the scientists about the scientific researches' moral and social responsibilities in recent ten years.

In china, the problem of scientific ethics has arisen recognition in recent ten years. The scientific community also began to appeal to "defend the dignity of science". The Chinese government has issued a series of documents to pay attention to and regulate the scientists' responsibilities, such as Some Opinions on Strengthening the Popularization of Science and Technology. Zou Chenglu and other academicians have published the papers Discuss the Problem of Scientific Morality and Discuss the Problem of Scientific Morality at A Second Time together; And Chinese Academy of Sciences and Chinese Academy of Engineering have formulated The Self-discipline Criterion of Scientific

Morality for Academicians of The Chinese Academy of Sciences and Behavior Criterion for Academicians in The Election of The Chinese Academy of Sciences. Under the current background of science and technology, all in all, establishing the basic ethics norms of scientific research, as well as educating Scientific Ethics Norms to the scientists and the undergraduates who would be engaged in scientific career about the scientific studies, is an important problem should be proposed in this time.

The scientific ethics norms including two means: the first one is the performance of the interest subjects' division relationship; the second one is the production of social division by history developed. Firstly, from the aspect of the interest subjects' division relationship, the scientific ethics norms can be among the interest subjects who are in mutual competition, and has the appeal power of "symbiosis" to balance the contradiction among the interest subjects, and to become one of the mechanism to coordinate mutually the relationship of the interest subjects who compete with each other. Lenin pointed out, "human's aims are engendered by the objective world, and the objective world is the presupposition" (Lenin, 1959). It is same for scientific activities. Generally speaking, scientific activities include projects selection, instrument operation, and experimental observation, etc.. From the historical development of social division, as Robert Hanbury Brown said: "The features of scientific community have changed; the scientific community became larger, more 'industrialization', more 'collectivization', involved in more political elements" (Brown, 1998). Then the scientific ethics norms have become a tension or contract to balance the strength between social groups and interest groups, the groups and the whole society, etc. Its purpose is to establish a kind of widespread mutual trust and professional moral on the basis of the universal truth, credit and responsibility. Based on this, when people are engaged in scientific activities, their choices about research direction, research purposes, organization, application, etc. would be always restricted by various social and occupational factors. In a word, this paper tries to put forward the 3H pattern of scientific ethics norms.

2. HUMAN NATURE

In modern society, the aim of science "is not only to expand the authentic and correct knowledge, the more important goal is to seek more benefits for human beings and our environment, and the former can't be contrary to the demand of the latter. So, "the responsibility in scientific research becomes a main aspect of roundly ethical inspection to science" (Chen, 2003). In nineteen thirties, American historians of science Sutton put forward the task of "humanization of science": "Any prescription that doesn't include humanization of science will not have any effect. …science must be humanized; it means that it can't be allowed it to rampage. …If science is considered by people only from the utilitarianism of technology, it is almost no any value in culture" (George, 1989). Sutton, from a deep understanding and investigation of science, had an insight into that though science is our "main center of spirit" and "main center of culture", it may also lead to the neglection and unconcerned of human nature. He said, "technical minds" and "technology addiction" of science and technology expert may make their spirit insensitive and ignorance to such a degree, so that they have completely excluded human nature, their mind have no consciousness to human nature.

The famous historians of science Brown Janowski advanced the view that "the value of science is the value of human". He thinks that scientists themselves formed a society, maintained by a moral force. The main performance of this way is: They don't publish crazy views on politics, don't cheat, don't lobby with any costs; they don't resort to prejudice, also resort to authority, and they often confess their ignorance; their argument is moderate, and don't make the object, racial, political or age of debate involved…These humanized virtues of science generated in scientific practice, because they are the indispensable conditions of scientific practice. So the society of scientists must be a democratic society, and the value of science is the value of humanity.

In *the normative structure of science* (1942), American Scientific sociologist Robert Merton thought that, the spirit and temperament of science is an emotional comprehensive which constraints the value and standard of science. In Merton's view, the spirit and temperament of science contains five traditional standards: Communalism, which means science belongs to common knowledge category, all people can select it and use it; universalism, which means on the evaluation of scientific behavior and results, we should not be considered such as racial, ethnic, national, religious, gender, class, age and other individual characteristics, and should evaluate from the value standard of science itself; disinterestedness, which means demanded people who engaged in scientific activities, should do research based on the "for aim of science",it means that researching science for science, eliminating the honor, the position, the popularity and self-interest; originality, which means scientific activities is the exploration and discovery to unknown world, we are opposed to bend to the authority or doctrine blindly when people engaged in scientific activities; organized skepticism, which means demanded people who engaged in scientific activities, shall be with the help of the standard of experience and logic, carefully investigating and identifying the existing scientific theory, scientists should have highly prudent and critical attitude. In the process of scientific practice, the connotation of hommization of science has been enriched and expanded, it is reflected not only in subject of scientific activity; in the pursuit of truth of science; but also shown in the

subject of scientific activity concerned whether scientific results are applicated rationally or not; in addition, the sense of responsibility and mission of the system of person –society–nature also included in it.

3. HISTORIES

Undoubtedly, it is necessary to researching scientific ethical norms, however, we should not only study on how scientists should do, but also study on actually how to do. The regulation which is associated with each nature of science is relative, and it is changing with science activity developing. Therefore, we cannot stay in static analysis of logic and mechanical "accumulation observation", we should look the scientific activity as an open system, considering the influence of society, culture and other factors fully, investigating the scientists' activities specifically. "Internalism which deny social factors and externalism which deny social internal factors are all one-sided" (Hong, 2005). In a very long time, science is considered to be the "value-neutral", value is excluded; when people scan science from a new perspective, value is into the scientific field of vision naturally. Kuhn emphasized the importance of value rationality, and he thus realized a change from a single scientific rationality to value rationality of diversity. He denied the certainty of scientific rationality and logical method, using the value factors containing belief pursuit, value choice, world view, etc. Feyerabend advocated researching the scientific activities through single case studies, including the historic literature research and practical survey work (Feyerabend, 1992). Moreover, we should transfer the concern of science from method to practice.

Scientific values are abstracted from every kind of ethical value relations in scientific activities. These values relationship which generated from scientific activities generally includes: relation of science and human, relation of science and society, relation of science and nature, relation of science and human–society–nature system. The scientific values is the specific of various of ethical values in scientific activities, it is that people should have the awareness of mission, responsibility and position shown in the scientific activities as the main of behavior to promote the development of society and nature and the all-round development of human.

Scientific value, include both material values of science (tangible values) and the spiritual value of science (intangible values). Material values of science are visible, obvious, direct and huge; it is not too much no matter how to measure. But, it does not mean that we can simply equate science to technology as one of the essential factors of productivity. This indifference and ignorance of the spiritual value of science, is very likely to induce extreme thoughts, such as utilitarianism, materialism, anti-scientism, pragmatism, etc., and it provides soil and nutrients for development and expansion of these thoughts. Undoubtedly, the ignorance of the scientific values of the spirit is actually not allowed.

4. HONESTY

Honesty is "a persistent spirit of seeking truth, being realistic and seeking genuine knowledge. Human being should be good at distinguishing error and false, and brave in eliminating the false and retaining the true no matter to others, to themselves, to things in the process of understanding all objective existence"(Wang, & Yu, 2001). It is also a spirit of critical and doubt at the same time. As the subjects of scientific activities are in an endless course of exerting their finite ability to explore and recognize the infinite existence, and scientific knowledge walks from "relative truth" to "absolute truth" continuously, so the sincerity and truthfulness of the scientific activity only tends to be more vivid, that is "human being can advance the ability of recognizing nature to a higher stage only in the process of obtaining, correcting truth and pursuing more perfect truth" (Fei, 2004). Therefore, honesty is the abstractness of common recognition and pursuit to objective truth by the scientific activity subject. Moreover, the honest spirit of science activity subject has been gradually penetrating in culture system of whole society, and promoting the creativity of social activities reaching a kind of free state, which producing a significant and profound influence on social practice.

Specific to scientific research, honesty is that scientists should insist on being honest in all stages of research process, for example, data collection and record, analysis and interpretation, storage and sharing, results evaluation and public etc.. To be honest should eliminate the dishonesty of scientific research, the first is that understanding what are the dishonesties in scientific research, how they happen and it will produce what kind of harm. Generally, most dishonesties of scientific research are made in the process of data generation and analysis. Dishonest can be divided into data fabricating, data tampering and data modifying. Fabricating is means to create something out of nothing; tampering is meaning modifying original data or experimental results getting from the process of experiment and observation (Lu, & Xiao, 2002). "Baltimore scam" involves fabricating and tampering with the results of experiment.

In addition, the dishonesty of scientific research also includes data modifying. Data modifying is point to that scientists in order to make their results look better than the actual or be more conducive to support their hypothesis, delete or cut the original data, and thus the data or result can't be reported truly and objectively (Hong, 2005). The problems of data modifying often appears in the use of statistical methods especially. The main forms of data modifying are cover data, clipping data and manipulating data, if the result of scientist can't support his hypothesis, but he didn't truthfully report the results, this behavior

belongs to cover data. If the scientist make the result looks better than the actual through deleting parts of the outrageous data, this behavior belongs to clipping data. If the scientist design a experiment that may get a supportive results or avoid experiment which may cause harmful results, in order to eliminate the doubt of counterparts to the results, this behavior belongs to manipulating data (Wang, & Yu, 2001). Then, how we distinguish whether the statement of the data is honest, whether the statement conformed to the ethics of science or not? To answer this question, we need to appeal the motivation and intention of scientists. If the scientists' purpose of choice data is to cheat people, the behavior is immoral and dishonest; if the purpose of clipping data is in order to express the result more clearly, the behavior is ethical and true. Of course, it is not an easy thing to judging the scientist's motivation is whether honesty or not. And the record of the experiment is often done in private, and there is no supervisor usually, so the scientific ethics often realized through self-regulation.

CONCLUSION

In summary, the responsibility of organizational system of science is not only expanding the correct knowledge, but also the goal that towards trying to gain greater benefits for human being society and the environment. So, in different situation, people can constitute the different understanding and evaluation of scientific activities (shown in Figure 1).

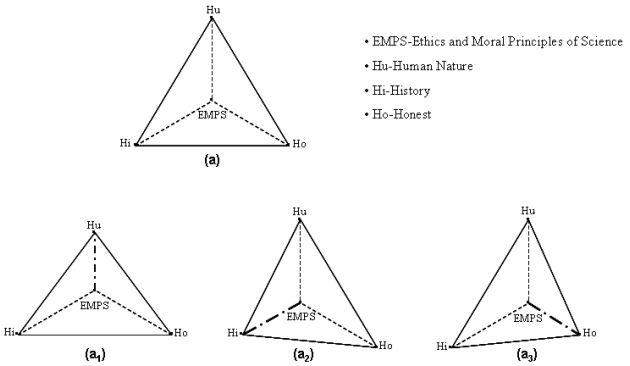

Figure1
The 3H Pattern of Scientific Ethics Norms

Figure 1-a states that scientific ethics norms includes human nature, history, honest, etc., they constitute a tetrahedron. But in the real scientific activities it is not always like that, the tetrahedron changes into figure 1-a1, a2, a3…with the specific conditions. For example, in the famous Sokal event, Sokal combined the intentionally fabricated fallacy, abuse of language and various groundless conclusions in the article and published them, then he disclosed the prank, saying that the article he published "has obviously nonsense in words". In this event, Sokal's behavior obviously belongs to the condition of figure 1-a3 (Ho is weaker than Hu, Hi), but we cannot deny the rationality of Sokal's behavior and positive meaning of Sokal event. There is no doubt that, the purpose of Sokal prank to make the public pay attention to the decline phenomenon of rigorous standard in academia, because of this, he disclosed the scam. In the Steven Weinberg's opinion, "Sokal prank is the most effective way to prevent casually speculating the conclusion of culture, philosophy or political in the development of physics and mathematics". This analysis method of science ethics is similar to four temperament types of people putting forward in the psychology, which are include choleric quality, sanguine quality, phlegmatic quality, melancholic quality. Everyone's temperament is a hybrid made by formatting the four temperaments according to the different proportion coordination. In the research of scientific ethics norms, using this method, also reflect the nature needs of socialization of scientific practice activities, at the same time reflect unity within scientific activities and ethical practice.

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