

Culturology — Study of the Creation of Socialist Spiritual Wealth

Qian Xuesen

Three years ago Wu Jiawei and I wrote an essay on social engineering, in which we discussed the techniques of organizing and administering socialist construction — a systematic project on a national scale.¹ Later, realizing the limits of this article which stressed only the economic aspect, I wrote a second article dealing with the state's function in eight respects: production of material wealth, creation of spiritual wealth, social services, administrative organs of the state, socialist legality, international exchange, national affairs, and the protection and transformation of environments.² Here, I propose to explore deeper the problems relating to the creation of socialist spiritual wealth and suggest a new discipline in social science — culturology which corresponds to economics, the social science engaged in studying the production of material wealth.

I

I believe it necessary first to firmly establish the importance of the creation of socialist spiritual wealth within the whole of socialist construction. For a long time this undertaking has been assigned to the category of education, science and culture under the state's overall financial plans, and investments in this field have usually been regarded as consumptive financial expenditures, as if the money thus spent could never be recovered. Consequently there has been much less motivation for spiritual creation than for material production. To straighten out such a confused conception, it is necessary to begin with Marxist philosophy.

Marxism holds the objective world is primary and the subjective world of man secondary. Man recognizes objective laws through social practice; only with this recognition and mastery of objective laws can man play a dynamic role in transforming the objective world and, at the same time, transform himself. Thus dialectical materialism clarified the dependence of the subject-

tive upon the objective and emphasized the dynamic role of man in the same breath. It is as the subject of knowledge that man grasps the objective laws and transforms the objective world. In fact, these principles are well known to our philosophers who, nevertheless, do not seem to be too deeply concerned with researching the developments and changes undergone by the subject of knowledge in human society, nor the relationship between the subject of knowledge and the historical development of society.

Unquestionably it is the people who make history. However, knowledge of the objective world does not result from mere practice without the experience thus gained being summarized and elevated to the height of theory. Thus the subject of knowledge is man summing up his experiences. While it is true that with ability and without restriction anyone can summarize or reflect on his experiences, the fact remains that not all men are in a position to do so. During the age of the primitive commune, the level of productive forces was so low that there was very little knowledge at that time although all commune members were social equals. When simply to keep warm and have enough food was problematic, man could not afford much time to think. Knowledge of the objective world advanced very slowly. The primitive commune needed hundreds of thousands of years to evolve into slave society where classes emerged and the division of labor between physical and mental work took place. The slaves were merely tools who knew how to speak while their owners, reaping the fruits of their labor, had time for reflection. They were educated and knowledgeable; thus knowledge of the objective world rapidly progressed. During the Spring and Autumn and the Warring States periods when the slave system collapsed in China, education was liberated from the fetters of official school institutes and private schools appeared on the scene. With the line distinguishing the educated from the uneducated moving downward along social strata, a part of the educated and learned members of society became the main force within the subject of knowledge. They constituted the first generation of intellectuals in this country.

During feudal society, the laboring people, who made up part of the subject of knowledge, continued to be burdened with heavy toil. They summed up their intuitive experiences directly from productive labor. The intellectuals became a stratum appended to the latter's service. However, some transcended these limitations and played an active role in the subject of knowledge by making contributions to the development of art and literature, and science and technology. However, owing to the small scale and scope of education, and the bondage inherent in the educational system, knowledge of the objective world continued to be slow-paced, as is testified by the longevity of the Chinese feudal society, which lasted over 2,000 years.

The rise of capitalism accelerated the advance of knowledge. The bourgeoisie, concerned with profits, made quite an effort to spread education and brought into being a large army of intellectuals, thus promoting the develop-

ment of science and technology. Capitalist countries that have entered the stage of monopoly capitalism have generally, along with the developing productive forces and the improving living standards, ended illiteracy and made secondary education universal. College graduates account for about one tenth of their adult population.

The historical facts listed above show that while the de facto inequality between men as the subject of knowledge, which appeared with class society, has been gradually weakening along with the development of productive forces and the progress of social system, it has hardly passed away in capitalist society. This is because of the restrictions put on people by the class relationships of that society. On the other hand, it also has to do with the fact that modern science and technology and art and literature have all become systems of knowledge so highly developed that any endeavor for further development in the creation of a new spiritual wealth for man necessarily requires a comparatively high level of knowledge, for which a secondary education is inadequate and even university-level studies may not suffice. The practical contradiction between whether to go to college or to go to work, which exists in capitalist society, cannot but restrict the chance for the laboring people to become the actual subject of knowledge. These are fundamental problems and cannot be resolved under the capitalist social order.

Under the socialist system things differ completely. Socialism has for its final goal communism in which everybody is liberated to the utmost and will become in fact, as well as in name, the subject of knowledge. To strive for this goal during the historical stage of socialism is our principle. Along with this, socialist democracy sincerely intends the people to be the real masters of the country and thus the state wants to cultivate their ability to rule. All this explains why our national policy explicitly provides for the establishment of a highly developed socialist spiritual and material civilization. We aim at a citizenry highly accomplished in science and technology, art and literature, and Marxist philosophy. All of these must be popularized as rapidly as the development of production allows. Naturally owing to errors, we have gone in roundabout ways and suffered setbacks. This is, however, not an inherent consequence of the socialist order but, on the contrary, incompatible with its essence. A new discipline to study the creation of socialist spiritual wealth should be established to explore how the masses of the people can speedily become the subjects of knowledge, so as to avoid acting blindly, raise self-consciousness and realize the people's maximum potential as the subject of knowledge.

II

We contend that the ability to sum up experience in the process of social practice requires a comparatively high level of knowledge and culture. This

sets a most important prerequisite for the subject of knowledge and calls for deeper analysis.

Ever since humanity acquired spoken and written language, it has long been the case that the fruits of knowledge of the objective world are not private possessions but are shared with others and passed on to posterity. This becomes public wealth in knowledge and culture, or the spiritual wealth mentioned above. This public wealth is necessarily influenced by the subjective ideology of its creators. Feudal lords have their viewpoints and modes of analysis, as do capitalists. In other words, all have their limitations, which of course vary in form and degree in the different spheres of the recognition and understanding of society and the natural world. But, when taken as a whole, it is impossible to deny the impact of man's subjective ideology and class perspective on spiritual wealth. In this country, spiritual wealth must promote socialist construction and profit socialist civilization, hence the qualifier "socialist."

Socialist spiritual wealth is not the creation of any single person, but the achievement of humanity through thousands of years of labor. Today, a man must first possess culture and knowledge to be able to add even the tiniest bit to this wealth. This means that the subject of knowledge today must be acquainted not only with the objective world but also from the beginning with the spiritual wealth. In other words there are three reciprocal aspects in the process of man's knowledge of the objective world: man — the subject of knowledge; the objective world — the object of knowledge; spiritual wealth — the means of knowledge created by mankind. Here it should be made clear that the objective world is material and primary; man's consciousness, which knows, is spiritual and secondary because it is the product of the brain. Spiritual wealth is man's creation and reflects man's knowledge of the objective world, and of course is also secondary. This thesis represents a development on classical Marxist philosophy. To the objective world and man as the subject of knowledge, it adds spiritual wealth, a third category differing from the first two. However, the fundamental principle of Marxist philosophy remains; matter is primary and consciousness secondary.

Sir Karl Popper, the English philosopher, has a similar theory, the so-called theory of three worlds, which terms the objective world "world 1," man's subjective world "world 2" and science, technology, art and literature "world 3." Some comrades in our country have expressed agreement with Popper's theory,³ while others have thought otherwise.⁴ As I see it, what he has said is quite appropriate to the discussion of the importance of the spiritual wealth. For example, should all the material wealth be destroyed by a world war, so long as "world 3" survived, man — "world 2" — could reconstruct the modern world in several decades or a century. But if "world 3" were completely annihilated, the humanity's experience of the past hundred thou-

sand or even million years would have to be repeated. On the other hand, Popper has also made some very erroneous assertions with regard to "world 3," such as its having a "reality" (independence) and "autonomy," etc., which shows he has in fact maintained his explicit dualism and anti-Marxism.

Beside the above-mentioned, we should point out another feature of the activity of creating modern spiritual wealth: it is socialized. This is true of work in science and technology, and of art and literature. The creation of spiritual wealth may be regarded as an undertaking or industry. In the past, I once called it "quaternary industry" just like some of my comrades.⁵ The term followed foreign usage, where agriculture (including mining in the US) is called "primary industry," manufacturing "secondary industry," and services "tertiary industry." "Quaternary industry" comes after these. However, I feel now that the term lacks clarity; it would be better in this country to use the expression "the industry of creating socialist spiritual wealth." This is another point I should like to elucidate.

III

The items to be included in the industry of creating socialist spiritual wealth, as I see it, are: studies of natural science and technology and of social science and technology,⁶ works of art and literature, every kind of education, book, periodical and newspaper editing and publication, physical training, information and data collection, cinema, broadcasting, and libraries, museums, and exhibitions, etc. Naturally these enterprises are connected in many ways with other socialist enterprises and definite distinctions should be made between them through discussion and study. For example, the designing and trial-production of industrial goods do not fall into the category of the creation of spiritual wealth, but rather should be assigned to the field of industry since they are more closely associated. Another example is the policy-research in Party and state organizations. This should not be considered as part of the enterprise for creating spiritual wealth as it is of more concern to these organizations.

Now let us turn to the theme of this article and in our study of the creation of socialist spiritual wealth, let us begin with the most concrete efforts. First of all, since the creation of spiritual wealth is an enterprise that is socialized, there must be a theory, or technique for its organization and administration; this is systems engineering,⁷ which uses modern scientific technique for organization and administration. Different branches of departments in organization and administration call for different fields of systems engineering. I have researched systems engineering in science and technology research work⁸ which is called research systems engineering. Closely related to

it are measurement and standards systems engineering.⁹ For the enterprises of education and personnel training, I have considered educational¹⁰ and personnel¹¹ systems engineering. Art and literature, and telecommunications of course also have extremely important organizational work, for which the State Council has set up the Ministries of Culture and of Broadcasting and Television. These ministries are quite capable of using the scientific method, or artistic systems engineering, to organize and administer their work. Similarly, other sectors engaged in the creation of socialist spiritual wealth also can utilize modern techniques of organization and administration and should have their own systems engineering.

Therefore the scientific technique for organizing and administering the enterprise of creating socialist spiritual wealth and the types of systems engineering pertaining to each of the various departments thus engaged are the primary topic of study. There has been quite a lot of discussion of this in the fields of education and science and technology, but art and literature remains a weak link. Our experiences over many years await summarization into a field of systems engineering. In setting up systems engineering in any sphere, it is necessary to refer to the general theory and methodology of systems engineering, such as operations research and computer technology¹² and, sometimes, to cybernetics and information theory. These are common bases for the organizational and administrative techniques of the various fields in the creation of socialist spiritual wealth.

Apart from these common bases, there are also the corresponding theoretical sciences dealing specifically with the different fields of systems engineering. These represent a higher layer in the science of the creation of socialist spiritual wealth, and a more theoretical stage than organizational and administrative techniques. In the field of education, pedagogy or the science of education was established quite early and has a history of at least several centuries, though naturally it is still developing. Some have advocated a new term and suggested "educational cybernetics,"¹³ but whether the suggestion is reasonable remains to be seen.

For science and technology, the corresponding theoretical discipline is the philosophy of science, which, having begun in the thirties, is only about fifty years old. Because it is comparatively new, views vary as to its contents as can be seen in the works of different scholars and schools.¹⁴ But generally it is considered to be the study of works in the field of science and technology as an aspect of human society. I have further subdivided the philosophy of science into three branches,¹⁵ dealing with, respectively, the system of science and technology,¹⁶ the capacity of modern science and technology and the relationship between social progress and technology. Such a classification is, of course, not necessarily comprehensive. It occurs to me at present that a problem frequently encountered in our work is that when a particular scientific-

technological effort has reached a certain stage and the first glimmerings of its effect begin to be seen, an evaluation of the social function of its final results should be made. Such an evaluation is difficult to make but quite important to planning in the allocation of manpower and material. This could become another branch of the field and deal with quantifying science.

It seems that the theoretical discipline for the organization and administration of work in art and literature until now has not yet been considered. Recently I proposed its establishment of a field dealing with the sociology and structure of literature and art,¹⁷ a discipline which would include the study of the social effect of these creative works and the study of their structure. These are but tentative suggestions offered with a view to invite discussion and research on art and literature as an aspect of man's activities in society.

Beside education, science and art and literature, journalism, physical culture, and informatics should also be studied in relation to the enterprise of creating socialist spiritual wealth. But here I will not go into detail.

IV

A question may be raised about what has been mentioned above: why is it that pedagogy was the first of these sciences to be set up and has a history of several hundred years while the philosophy of science was set up so much later and the sociology and structure of art and literature has not been established at all yet? From the perspective of historical materialism, the reasons are quite clear. From early on education has been regarded by the state and the ruling classes as an enterprise closely related with the training of successors and so deserving of their full attention. Hence even in those early ages no effort was spared in its study. What then about science and technology? The bourgeoisie of Western Europe appeared on the stage of history in the sixteenth century, yet they did not take over state power until the eighteenth century. It is true that they set great store by science and technology from the beginning because of their need to develop production. But the bourgeois state only began to involve itself with developing science and its all-round intervention dates from the period around World War II. As a result, the philosophy of science, which takes science and technology as an aspect of social activities, emerged as late as the 1930s. Since even up to the present the bourgeois states do not regard art and literature to be of national significance, it has never occurred to any of them to establish a science to study problems in these fields. This historical analysis suggests how the general situation in China differs completely from that in capitalist countries. As has been mentioned in the first part of this article, the establishment of highly developed socialist

spiritual and material civilization is our strategic goal. We fully appreciate the fundamental importance of the creation of socialist spiritual wealth. The party and state have both made great efforts to develop science and technology, art and literature, education, etc., so we must concern ourselves with all the disciplines related to the creation of socialist spiritual wealth. These, in my opinion, cannot be studied one by one in isolated manner but should rather be tackled in a comprehensive, all-round fashion. Hence my suggestion of "culturology," the fundamental theory for the creation of socialist spiritual wealth.

Culturology does not replace pedagogy, the philosophy of science, the sociology and structure of art and literature, journalism, or the study of any other specific subjects; it is a total synthesis of all these studies, each of which should be explored step by step. I believe that even now we could put forward a few topics that have already appeared in the realities of our daily life.

The party provides leadership for all work in this country. It follows that the first issue to be explored in culturology is how to strengthen and improve this leadership in the creation of socialist spiritual wealth. The key here seems to lie in a full awareness of the inner laws governing the creation of spiritual wealth while persisting in the principle of service to socialist construction (for art and literature, it is service to the people and socialism). Objective laws cannot be offended with impunity.

Another culturological problem related to this is the structure by which the state provides leadership for the enterprise. Since the present structure is problematic in quite a few respects, it is hoped that reforms could be instituted at an early date.

The socialist revolution is one that aims at eliminating class exploitation and private ownership and at a gradual advance towards communism. Being in the process of revolutionary transition, it finds itself between on the one hand the remnants of old ideology and on the other hand the corrupting bourgeois ideology whose impacts are felt in our contacts with the many capitalist countries in the world. Under these concrete conditions, another task is posed to culturology: how to promote the ideological and political consciousness within our ranks and enhance the communist spirit. Recently the Chinese Association of Science and Technology approved and transmitted to its members and branches throughout the country the "Moral Codes in Science for Science and Technology Workers in the Capital" (*Shoudu Keji Gongzuozhe Kexue Daode Guifan*) initiated by science and technology workers in Beijing, and a "Pledge of Artists and Writers" (*Wenyi Gongzuozhe Gongyue*) has also been adopted at the second meeting of the Fourth National Committee of the Chinese Writers' and Artists' Federation. These are very important.

In distribution of social wealth we are for the principle of to each according to his work, according to the value he has created. In the activity of creating socialist spiritual wealth the value that a person has created constitutes

the basis for deciding his share in distribution. It is a task for culturology to put forward a theory on the social value of spiritual wealth and a just system of distribution. It is true that there have been quite a number of concrete proposals on the subject. However, it seems a theory is still wanting.

Related to this is the protection against any theft or vandalism of spiritual wealth, no matter whether it belongs to the country, a collective or an individual. The issue is complicated by international contacts and is a topic in culturology to be studied jointly with the science of law.

The creation of spiritual wealth is in essence a socialized enterprise, and exchange and contact within the collective and between different disciplines is extremely important. Yet in many cases our workers are separated from each other in small groups. An example can be found in universities where teachers and researchers stay in their own fields, and even those who teach basic courses and those who teach specialized courses do not switch jobs. Another example is the isolation of art and literary workers from scientists and technicians, each having little to do with the other profession. In order to overcome this abnormal state of affairs and to make the enterprise of creating spiritual wealth flourish, culturology must study the theories of multi-discipline "hybridization" and even "distant hybridization."

Marxism holds that the people, and the people alone, are the motive force of history. And so mutual help and close cooperation between specialists and the masses, and between workers engaged in creating spiritual wealth and those in other work are of great importance. Scientists and technicians must take seriously the experiences accumulated by workers and peasants, in which there may well be sprouts of the new. And so culturology must study the theory of relying on the masses.

Today, professional personnel engaged in the creation of spiritual wealth, including workers, are in total only something more than 10 million, or about two percent of our adult population, a very small percentage indeed. In accordance with constitutional stipulations regarding national construction, this percentage will surely grow along with the development of the social forces of production. People engaged in the creation of socialist spiritual wealth will eventually occupy more than half of our working population when we have built up a high-level material and spiritual socialist civilization. The task is historical and formidable. Therefore, just as we study economics and its various branches, we must establish and study culturology including the sociology and structure of art and literature, and probe deeply pedagogy, the philosophy of science, journalism, the science of physical culture, and informatics. We must develop the techniques of organization and administration in the various fields of the enterprise of creating spiritual wealth — the various fields of systems engineering, including those for art and literature and scientific research. The prospects are encouraging.

NOTES

1. Qian Xuesen and Wu Jiawei: "Social Engineering, the Technique for the Organization and Administration of Socialist Construction," *Jingji Guanli (Economic Administration)*, No. 2, 1982, p. 5.
2. Qian Xuesen: "Structural System of the State's Functions in China: More on Social Engineering," unpublished.
3. Huang Shunji, Liu Dachun and Li Hui: "Basic Problems in Philosophy and Popper's 'Three Worlds'," *Zhexue Yanjiu (Philosophical Studies)*, No. 11, 1981, p. 29.
4. Ren Ying: "On Basic Problems in Philosophy and Popper's 'Three Worlds'," *Zhexue Yanjiu*, No. 3, 1982, p. 23.
5. Qian Xuesen: "On the Significance of Science and Culture and the Development of the 'Quaternary Industry'," *Renmin Ribao (People's Daily)*, June 17, 1981, p. 3.
6. Qian Xuesen: "From Social Science to Social Technology," *Wenhui Bao (Wenhui Daily)*, September 29, 1980, p. 3.
7. Qian Xuesen, Xu Guozhi and Wang Shouyun: "The Technique of Organization and Administration — Systems Engineering," *Wenhui Bao*, September 27, 1978, pp. 1, 4.
8. Qian Xuesen: "Organization and Administration of Scientific and Technological Research and Systems Engineering in Scientific Research," *Xitong Gongcheng yu Kexue Guanli (Systems Engineering and Scientific Administration)*, No. 1, 1980, p. 1.
9. Qian Xuesen: "Energetically Develop Systems Engineering, Rapidly Establish the System of the Science of Systematization," *Guangming Ribao (Guangming Daily)*, November 10, 1979, p. 2.
10. *Ibid.*
11. Qian Xuesen: "Socialist Systems Engineering in the Training and Employment of Personnel," *Hongqi (Red Flag)*, No. 2, 1982, p. 19.
12. See Note 9.
13. The "Second Symposium on Educational Cybernetics in China" was held in Heihe City, Heilongjiang Province in July 1981. Views were presented during the discussions with regard to three aspects of the theory of educational cybernetics: first, control of educational process; second, the process of education itself; third, the conduct of teaching and learning.
14. Lei Ming: "Brief Glimpse at the Present Stage of the Study of the Philosophy of Science," *Xinhua Yuebao (New China Monthly)* (abstracts), No. 12, 1981, p. 206.
15. Qian Xuesen: "On the Establishment and Development of a Marxist Philosophy of Sciences," *Keyan Guanli*, No. 1, 1980, p. 1.
16. Qian Xuesen: "Structure of Modern Science — More on the Study of the System of Science and Technology," *Zhexue Yanjiu*, No. 3, 1981, p. 19.
17. Qian Xuesen: "My Views on the Sociology and Structure of Art and Literature," *Yishu Shijie (The World of Art)*, No. 5, 1982, p. 1.

— Translated by Feng Shize

ABOUT THE AUTHORS

Yang Zhiguang (杨志广) works at the Literature Department of *Social Sciences in China*. (p. 16)

Qian Xuesen (钱学森), born in 1911, is a well-known scientist and deputy director of the Scientific and Technological Council under the State Commission for National Defence and Technological Industries. (p. 17)

Xia Yulong (夏禹龙), born in 1928, is deputy director of the Institute of Philosophy of Science in Shanghai. (p. 27)

Liu Ji (刘吉), born in 1935, is deputy director of the Institute of the Philosophy of Science in Shanghai. (p. 27)

Feng Zhijun (冯之浚), born in 1937, is associate professor at Shanghai Railway College. (p. 27)

Zhang Nianchun (张念椿), born in 1937, is deputy director of the Office of Philosophy of Science of Shanghai Railway College. (p. 27)

Lin Zili (林子力), born in 1925, is an economic theoretician. (p. 53)

Song Linfei (宋林飞), born in 1948, teaches in the Philosophy Department at Nanjing University. (p. 105)

Li Zongyi (李宗一), born in 1934, is an associate research fellow in the Institute of Modern Chinese History of the Chinese Academy of Social Sciences. His publications include *A Biography of Yuan Shikai* and he has contributed to the *History of the Republic of China*, edited by Li Xin. (p. 127)

Chen Yan (陈炎), is an associate professor of Oriental Languages at Beijing University and member of the Chinese Society for Historians of China's Foreign Relations. (p. 155)

IN THIS ISSUE

SYMPOSIUM ON SHI NAIAN, AUTHOR OF *SHUI HU ZHUAN*, by Yang Zhiguang, discusses problems concerning artifacts and materials related to Shi Naian at the symposium held in Beijing from August 21 to 23, 1982. A number of scholars evaluated the historical documents discovered recently in Jiangsu Province. The majority of participants at the meeting affirmed the authenticity of some of the materials, and noted that these had advanced research related to Shi Naian. It was also pointed out that there are still questionable points in the various documents, that no necessary connection between the newly discovered materials and Shi Naian, author of *Shui Hu Zhuan*, has yet been discovered, and that it is too early to conclude that Shi Yanduan is Shi Naian. (p. 8)

CULTUROLOGY — A STUDY OF THE CREATION OF SOCIALIST SPIRITUAL WEALTH was written by Qian Xuesen who in recent years has advocated the development of modern organizational and administrative theories bearing on all relevant social enterprises. Qian urges that such development be based on a broad perspective and with a view towards increasing and improving party leadership in these various social enterprises. In this article he explores the question of the enterprise of the production of spiritual wealth. He points out that a new social science should be created to correspond to economics, which studies the production of material wealth. This new science, dubbed "culturology," would study the creation of spiritual wealth. To this end he demonstrates the importance of the enterprise of creating socialist spiritual wealth within the entire process of socialist construction and sets forth the reasons why China must explicitly provide for the establishment of a high-level socialist spiritual culture while it is establishing a high-level socialist material culture. He points out that culturology would be a science synthetic in nature, and the specialized basic theory of organizing and administering the creation of socialist spiritual wealth could utilize the general theory and methods of systems engineering, adapted to suit each individual field. He also raises a number of problems awaiting study in this enterprise and sketches a rough outline for the development of "culturology." (p. 17)

ON SCIENTIFIC DECISION-MAKING, by Xia Yulong, Liu Ji, Feng Zhijun and Zhang Nianchun, holds that decision-making is the basic function of a