



# Several Problems Concerning Scientific and Technical Work (Outline Report — the First Draft for Discussion, August [17], 1975 — Excerpts)

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## SEVERAL PROBLEMS CONCERNING SCIENTIFIC AND TECHNICAL WORK\*

(Outline Report – the First Draft for Discussion,  
August [17], 1975 – Excerpts)

We have been at the Academy of Sciences for nearly one month, and have actually worked for about twenty days. [We] have reviewed some important historical documents, held discussion meetings with some comrades inside and outside the Academy, and made some investigations. Now we'd like to present some of our rough and brief views regarding the following six problems:

- (1) The Problem of Fully Affirming the Accomplishment on the Scientific and Technical Front (omitted)
- (2) The Problem of the Organization and Leadership of Scientific and Technical Work (omitted)
- (3) The Problem of Striving to Understand Thoroughly the Specific Line the Chairman Put Forth for the Scientific and Technical Front

The Chairman charted for our Party the basic line for the entire transitional period and the general line of socialist construction; at the same time he also laid down specific lines for various fronts. We have only just touched the specific line for the scientific and technical front; our understanding of it is shallow; much less have we understood it or understood it thoroughly. After preliminary

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\*"Kuan-yü k'o-chi kung-tso ti chi-ko wen-t'i," in Ch'i Hsin, Ssu-jen-pang shih-chien t'an-so [Exploration on the Case of the "Gang of Four"] (Hong Kong: The Seventies Magazine, 1977), 187-194. This Hong Kong source gives the date of the document as August 11. However, Chinese sources available to date indicate a different date, August 17. If the meeting was indeed started on July 17 and lasted for a month, as reported, then the date August 17 should be more credible. See, for example, K'ang Li and Yen Feng, "The Circumstances Surrounding the Appearance of the 'Outline Summary Report,'" Hsüeh-hsi yü p'i-p'an [Study and Criticism], No. 4 (April 14, 1976), 20-27. Translated in SPRCM, No. 870 (May 10, 1976), 16-28. — Ed., CLG.

study and investigation, we feel that at present there are several problems which need to be made clear.

First is the problem of the relationship between politics and vocational work.

In [the course of] grasping scientific and technical work, we must put politics in command of vocational work, grasping the revolution to promote scientific research. "The line is the key link; once it is grasped, everything falls in place." Forgetting the Party's general line, one will lose one's bearings. It is not enough to have the general line, it is necessary also, under the guidance of the general line, to implement correctly the Party's specific lines and a series of policies for the scientific and technical front. Only when the understanding about policies is unified can there be unified action.

At the present stage, it is necessary to implement resolutely the three directives of studying theories to oppose and prevent revisionism, [promoting] stability and unity, and pushing the national economy forward. These three directives cannot be separated. Without opposing and preventing revisionism, vocational work will go astray. Void of a situation of stability and unity, production and science and technology can never make progress. If production and science and technology do not move forward, the material foundation would be unreliable, and the proletarian dictatorship could not be consolidated.

Comrades working in the scientific and technical departments must be able to exercise not only strong political leadership but also concrete and effective vocational leadership. It is difficult for cadres of the Party and government to understand many professional affairs and techniques; however, it is also wrong not to study professional affairs and scientific technology a bit, or to show no concern for vocational work. They should endeavor to move ahead in the direction of being red and expert.

Second, the problem regarding the relationship between the struggle for production and scientific experiment.

Science originates from production, it also guides production and promotes production. How is production to be developed with greater, faster, better and more economical results? The decisive factor is people, first relying on people's high political consciousness and revolutionary enthusiasm, second relying on people's mastering of advanced science and technology. Science and technology are also productive forces. Scientific research must go in advance [of production] and push production to move forward. The fact that

the petroleum industry is moving ahead by leaps and bounds fully illustrates this point.

The Chairman and the Center put forward the grand goal of developing [national economy] in two stages. If we could not make a big leap in science and technology, it would be difficult to realize them. Without modern science and technology, it is impossible to achieve the modernization of industry, agriculture, and national defense.

Some comrades hold that doing scientific research is like "distant water cannot quench immediate thirst." In fact, making scientific research walk in the front is exactly to avoid "digging a well when one is thirsty." Some comrades are apprehensive about new technology being immature and not standardized, which might cause delays in production. True, [this] lesson was learned in the past. However, the conclusion which should be drawn from this lesson is not to refrain from undertaking new technology but to pay even greater attention to and strengthen scientific research. Maturity always comes from immaturity, and standardization comes from the lack of it. The condition for the transformation is our stubborn effort to carry on scientific experimentation. When grasping production, it is necessary to grasp scientific research and new technology. Not only should there be the requirement of output targets, but also there should be the requirement of technological and economic targets.

Third, the relationship between professional ranks and the mass movements.

We develop science and technology by relying on two forces, one is the professional ranks and the other is the ranks of the masses. [We] must walk on two legs and give play to two initiatives.

Focusing on the professional ranks and ignoring the ranks of the masses, launching no mass movements of scientific experiment, cultivating intellectual aristocrats, having no respect for and even suppressing the creative spirit of the masses, these are methods of capitalism and revisionism.

If there are no professional ranks, the initiative of the masses can hardly last long, and it will be difficult to raise the [level of] mass movements in scientific experimentation.

The correct policy is to integrate professional ranks with mass movements. The professional ranks must learn from the worker-peasant masses and learn from the practice of production. This integration does not mean to lower the role of professional ranks but to give better play to the backbone role of professional ranks

in the mass movements of scientific experimentation. It is necessary to popularize scientific knowledge among the masses, and to disseminate the fruits of scientific research in production. It is necessary to raise to a scientific, theoretical level the experiences of the masses in their practice of production and scientific experimentation, so that science can move ahead and then go back to be popularized among the masses. Our country still faces many important scientific and technological problems, and we need to concentrate a number of professional units to tackle them.

At present, both the professional ranks and the mass ranks should develop and should be elevated. In some places, many professional scientific research institutes have been dissolved, scientific and technical personnel have long been sent down to do labor or to work at production posts in the capacity of [workers]. There are also many professional organs which have not replenished their working force with new strength over many years; the average age [of their personnel] is approaching forty. This situation must be quickly rectified. From the present moment, it is urgent to reinforce and strengthen the professional ranks by recruiting in a planned manner a part of the people from among graduates of physics and engineering universities who have been sent down to do labor for many years, and from among activists who have emerged from the mass movements of scientific experiment and possess certain scientific and cultural knowledge. It is also necessary to build step by step a number of new professional institutes of scientific research.

Scientific research is also a kind of social practice which cannot be replaced by the struggle for production. In many cases, scientific research work must be brought to the site of production for experimentation and research. But it is necessary to pay attention to integrating closely this kind of experimentation and study with the experimentation and study in laboratories. There is also a lot of work for which experiments and study cannot be performed at the site of production but must be conducted in a laboratory. In no way can the research work at laboratories be negated and abandoned. We must not demand without discrimination that all scientific research work be performed in the three-way combination "with factories and rural areas as its base." It is improper to raise generally such a slogan as "run scientific research with an open-door policy."

Some scientific research [projects] need to be done through extensive cooperation, some are to be undertaken by small collec-

tives, and some merely involve arduous studies on the part of individuals. To term projects undertaken by a few people as "small production" is incorrect and also harmful to [our effort of] mobilizing people's enthusiasm for socialism.

Fourth, the relationship between relying on our own efforts and learning from the strong points of foreign countries.

Practice has proved that, guided by the Party, the Chinese people who have mastered their own destiny can rely entirely on their own strength, independently and with the initiative kept in their own hands, to undertake industry, agriculture, technological revolution, scientific experiment, and all other enterprises. Our basic emphasis is placed on regeneration through our own efforts.

Speaking of self-reliance, it cannot be interpreted as following a "close-door" [policy] or adopting an antiforeign [attitude].

The Chairman once said: "We openly put forward the slogan of learning from foreign countries, to learn from foreign countries all their advanced and fine things and, moreover, to go on learning forever."

Lenin had learned Marxism and led the October Revolution in Russia. Chairman Mao had learned the general experience of the October Revolution and, integrating it with the reality of China, led the Chinese revolution to victory. Learning is for creation. Whoever is good at learning can continuously make progress and catch up with and surpass others. This is true in the learning of social sciences and is likewise true of natural sciences.

In comparison, no small gap lies between the level of our country's science and technology and the advanced level of the world. "Everything foreign is good" is [an idea] which is wrong. However, lacking the courage to recommend the strong points of foreign countries or to look squarely at the gap is also incorrect. To acknowledge the gap is for the purpose of tightening our efforts and eliminating the gap.

In undertaking scientific and technical work, it is necessary to make careful investigation and study of the trends of scientific and technological development internationally, and to collect, study, and analyze scientific and technical documents and data of foreign countries, and energetically strengthen the work of [gathering] scientific and technical information. Only thus will it be possible for us to have a clear picture of where others and ourselves stand so that we can move forward on the basis of what others have already achieved, avoid the detours others have taken, and catch up with them.

In order to race against time and strive for speed, it is imperative for us to import some advanced techniques and advanced equipment from foreign countries. This importation is for the purpose of drawing from their experience, and promoting our own creations but not for replacing our own creations.

It is necessary to improve and strengthen scientific and technically oriented activities with foreign countries, to conduct friendly activities among international scientific circles, and also to strive to utilize various opportunities to obtain more things of academic value. Conduct few or conduct no general activities [such as] sight-seeing. We should follow "the doctrine of bringing it over" as Mr. Lu Hsün said, and bring over the advanced scientific technology of foreign countries for our own use.

In order to learn more effectively the strong points of foreign countries and to expand the ranks which are able to conduct activities with foreign countries, we must encourage young scientific and technical personnel to make efforts to master one or two foreign languages.

Fifth, the problem of the relationship between theoretical research in applied sciences.

Our Party has all along paid serious attention to theoretical research in the natural sciences. The Chairman and leading cadres at the Center have issued many instructions. We want neither empty theory nor blind practice.

We have quite a few productive techniques which are not up to the requirements. One of the important reasons is the lack of theoretical study and fundamental work.

At present, our [endeavors in] science and technology are still more imitative than creative. We must catch up with and surpass the world's advanced level, achieve [the objective of] "being able to produce what other countries cannot." We must develop our own creation and also intensify theoretical research.

We have a wealth of experience in industrial and agricultural production and among the masses. In addition, our country has a rich scientific legacy which needs to be summed up and elevated. We must crystallize specific experiences into general laws and theories so that they can be used to guide practice on an even wider scale.

There is still another kind of theoretical research, the application of which is, for the time being, in no way to be realized, but which has important significance to the knowledge of nature and to the development of science. Some [research] plays an important

role in international political struggle and in the two-road struggle in philosophy; this [role] should not be ignored.

Therefore, while doing a good job of research in applied science on a large scale, it is necessary to pay serious attention to and intensify the work of theoretical research at the same time. Don't equate theoretical research with the "three departures." Don't regard research in applied science alone as the need of the state; theoretical research is also a need of the state. Many theoretical studies often yield no results in a short period of time and are thus liable to being attacked. It is all the more necessary for leadership at all levels to attach importance to them and to support and make proper practical arrangements for them.

Conditions differ in different departments, and different emphases are needed. Departments of production should lay stress on solving scientific and technical problems which surface in the course of production, and should also pay attention to theoretical research. Research institutes of the Academy of Sciences and part of the institutes of higher education have the capacity and also the responsibility for undertaking more theoretical studies. We need to have unified planning and arrangement in this regard.

Sixth, the problem of implementing the policy of "let a hundred flowers bloom and a hundred schools of thought contend."

At present, it is necessary energetically to intensify academic activities on the scientific and technical front, widely unfold academic exchange, and encourage the academic contending and discussing of different opinions. The situation in which academic atmosphere is weak and academic problems are handled arbitrarily by administrative means should be changed.

When different views arise in scientific and technical work, it is necessary to distinguish the nature of the problems and to draw a clear line of distinction. Some of the problems fall into the category of political line, some problems fall into that of world outlook, and quite a few problems are related to different academic viewpoints and specific working methods. We must not only see their correlative conjunctions but also the distinctions between the main issues and the secondary ones. We should distinguish between their natures and should not mix them up.

The contention of different views on academic questions of natural sciences is a good thing, not a bad thing. Such kinds of [questions of] right and wrong should be settled through the means of academic discussion and through scientific practice. We cannot use administrative orders to impose hasty conclusions, supporting



one faction and suppressing another. Even less can we determine an academic right or wrong by the criterion of whether it is the majority or the minority, the young or the old, or the question of one's political expression. Don't describe all the academic viewpoints of the scientists in capitalist countries and revisionist countries as those of the bourgeoisie and revisionists, and don't reject them at random.

It is necessary to advocate the study of the Chairman's philosophical thought and the study of natural dialectics. We must be good at correctly analyzing and criticizing the influence of idealist and metaphysical trends of thinking in natural sciences and, under the guidance of dialectical materialism, must create our own school of learning and support and foster newborn things in scientific research. It is necessary to run Chung-kuo k'e-hsüeh [Chinese Sciences] as a publication for the study of important topics in natural sciences by applying natural dialectics. Various academic publications should be improved in terms of quality so that they will truly become the battlefield for launching academic discussion and academic exchange and will fully reflect the features of our academic work and the academic level of our country.

- (4) The Problem Regarding the Policy Concerning Intellectuals on the Scientific and Technical Front (omitted)
- (5) The Problem Concerning the Initial Conceptions of the Outline of the Ten-Year Plan for Science and Technology (omitted)
- (6) The Problem of Readjusting the Academy Proper and Units under Its Direct Jurisdiction (omitted)