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SOURCE Jen-min Jih-pao.

CCP TO INCREASE CONTROL OVER ACADEMY OF SCIENCES OF CHINA

Comment: On 18 July 1952, Ch'en Po-ta, member of the Central Committee, Chinese Communist Party, delivered an address to the Academy of Sciences of China, in which he stated that the CCP would "exercise greater control over the academy's future operations."

Ch'en agreed with (1) the suggestion of Li Ssu-kuang, chairman of the All-China Federation of Scientific Societies, to allow academy leaders to fix research problems for laboratories and (2) the report of Kuo Mo-jo, president of the academy, which recommended the initiation of an ideological reform campaign among scientists.

The full text of the address, published in the 4 September 1952 issue of the Peiping Jen-min Jih-pao, follows.

Several members of the Committee on Study, Academy of Sciences, have asked me to come here to say a few words. Preliminary to writing this address, I sought instruction from President Kuo of the academy and guidance from the vice-presidents on the several problems to be treated. I then consulted with members of the Committee on Study. For any incongruity or error, however, I alone must answer.

I have three points to make in this address. The first concerns the relationship between CCP members working in the Academy of Sciences and nonparty scientists and the relationship between the old and the new scientists. The second concerns the orientation of the operations of the academy. The third is a brief observation on scientists and patriotism.

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A. Relationship Between Communist Party Members in the Academy and Nonparty Scientists; Relationship Between Old and New Scientists

There are some CCP members active in the Academy of Sciences. What should be the nature of their relationship with scientists? Communist Party members in the academy must conduct themselves in an exemplary fashion because our party leads the Central People's Government and commands the infinite respect of all the people. If we are correct in our performance, the operations of the academy will progress. If we are incorrect, these operations will regress. Each party member must be held responsible for the beneficial or detrimental results of the academy's operations.

How can a CCP member help produce beneficial results? Should he abuse party authority, assume a posture of conceit, issue commands, and entertain the belief that all scientists must first consult with him before they proceed to research activity? To permit such conceptions to prevail would be fundamentally erroneous. The central duty of a party member in the Academy of Sciences is to learn humbly from the scientist and to help him along to more fruitful research. Chairman Mao has instructed party members working in all fields of national importance to be humble in disposition and to avoid postures of conceit. This will facilitate the unification of party and nonparty members for beneficial purposes. Obviously, Chairman Mao's instructions have become more relevant for application now that the CCP has assumed national power. These instructions have particular significance for party members working in the academy.

Permit me to quote a passage from Lenin's writings, namely, "Plan for an Integrated Economy." In this article written in 1921, Lenin commented on the relationship between Communist Party members and nonparty scientists as follows: "Someone has long since remarked that the vices of man are generally related to his virtues. Communists in leadership positions have numerous imperfections. Over the past few decades, we have accomplished much. We have agitated for the overthrow of the bourgeoisie and taught ourselves never to trust bourgeois specialists. We have exposed these specialists, assumed their political power, and put down their resistance. The enterprises we have embarked upon have been magnificent -- of historic significance for the world. But if one should boast a little, an eternal truth will have been proven [arrogance leads to mistakes]; that is, a miss is as good as a mile. We have already convinced Russia, taken her from the hands of the exploiters and delivered her up into the hands of the workers. We have already put down the exploiters. The time has come for us to learn how to govern Russia. To this end, we must learn how to direct, with humility and due respectfulness, the practical work in which the scientific and technical experts are now engaged. To this end, we must learn how to analyze, from the realist's and perfectionist's standard of reference, the divers concrete errors committed in the course of our work. We must learn to go ahead unimpeded and correct those errors. We must cast away those postures of conceit so peculiar to the intellectual and the bureaucrat. Let us rather set our minds to the task of mastering the experience gained, nationally and regionally, from concrete activity as well as from the legacy to which science has made us heir."

Lenin's comments were pertinent to the orientation he believed Bolsheviks must adopt toward scientists because the Bolsheviks had become the political leaders of Russia. It is precisely this orientation that our CCP members must adopt. Of course, the objective conditions obtaining in the present stage of our revolution are different from the objective conditions which obtained in the Russian revolution when the bourgeoisie had to be, and was, overthrown. The objective conditions in China's present revolutionary stage are such: we have been victorious over imperialism and its subservient,

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counterrevolutionary Kuomintang regime of feudal landlords and bureaucrat-capitalists, but we are preserving the national bourgeoisie. However, the course Lenin insisted that the Bolsheviks must follow in learning how to govern Russia is the very same course we must now follow in learning how to govern China. For this reason, it is imperative that our CCP members assume an humble attitude in work at the academy, endeavor to learn from the true scientists, and earnestly assist these scientists in more fruitful research. To do otherwise would be a violation of duty.

Permit me to spell out in greater detail the procedure our party members must follow in establishing proper liaison with scientists. Lenin, in the above-mentioned article, said: "It is the duty of Communist Party members in the State Commission for the Electrification of Russia to avoid commandism as much as possible and perhaps even -- more suitably -- to entirely refrain from employing the command method. When dealing with scientists and technicians -- most of them invariably have some of the cosmopolitanism and the habits of the bourgeoisie; this is clarified in the Rules of the Russian Communist Party -- we must assume a uniquely perfectionist and positivist attitude, learn from them, help them broaden their personal perspective, and instruct them to base all points of departure on verified factual data and on the results of scientific research. Always remember that the engineer does not view Communist ideology and its development as the result of the underground propagandists' writings, but rather as experimental results which he, as a researcher, has arrived at in his personal field of scientific endeavor. For example, the agricultural specialist accepts Communist ideology as a consequence of his own psychological processes and the forestry specialist accepts Communist ideology as a consequence of his psychological processes, and so on."

Lenin is saying that the scientist and the engineer must abide by the results which are derivative of their personal scientific specializations and that they must follow individual psychological processes toward the acceptance of Communism. This idea is eminently pertinent to our present operations.

The October Revolution introduced new areas of research for Soviet Scientists and transformed unity of action with the masses into a real possibility. The Communist Party and the people showed the highest respect for their endeavors. Again and again utilitarian targets were set for the scientists. Thus, the scientists closed the psychological gap by following the experimental results of personal research to the acceptance of the basic principles of Communist doctrine. A parallel situation was created in China after the people's revolutionary victory.

Prior to the complete national revolutionary victory, Chairman Mao pointed out that such a victory would have been impossible without the participation of the intelligentsia. Now that we have won, it is imperative that the large-scale national construction be carried out. Accomplishment of this task will require, more than ever, the participation of large groups of the intelligentsia and the scientists. Soon, we shall certainly have many capable scientists. At present, however, it is essential to develop the ability of scientists currently engaged in research. We must aid them in fruitful research, in deepening personal perspective. We must lead them gradually toward Communist ideology. When in contact with nonparty scientists, we party members must remember that among nonparty scientists there are many who have made signal achievements in scientific research and, since the liberation, have begun to touch upon the concrete problems of national construction and have even made unique contributions to this construction. Although these contributions are not monumental, they are a good starting point. They are empirical proof of the dictum that when

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scientists side with the people hidden genius is called into play. In the future, such good, conscientious nonparty scientists can contribute much to the nation.

In the past, various historical factors as well as social environment have prevented them from accepting Marxist-Leninist doctrine. They buried their heads in books and made no inquiries about conditions obtaining in the world outside. Yet they cannot be blamed. In passing judgement on the old scientists, we cannot -- must not -- use as our standard of adjudication the date of their acceptance of Marxism-Leninism. The important thing to observe is whether they, when engaged in scientific research, behave as real searchers for truth. It is very important for CCP members to understand this.

Furthermore, the scientists will be guilty of a serious mistake if they shun progress, and, because of their status among the people and respect in the eyes of the party membership, if they assume attitudes of conceit and inertia in thought and action. At an earlier date, Chairman Mao stated that those intellectuals and scientists who seek success in their occupation must work with the people. Otherwise, they will accomplish nothing. One hundred years of experience attests to the fact that our scientists can seek future merit only among the people and in cooperation with the Communist Party. It is imperative that every true scientist understand what I have just said.

Thus the relationship cuts both ways. The party member should cooperate with the scientist and learn from and help him in the solution of research problems. On the other hand, the scientist should directly -- voluntarily -- coordinate personal research with the tasks of the masses and, at present, with national construction.

Of course, this does not mean that a relationship of mutual criticism between the party member in the academy and the nonparty scientist should be inoperative. This type of mutual criticism is very essential. Many scientists cling to antiquated ideas inherited from the old society and cannot make a clean break with the past. For example, some adhere to bourgeois cosmopolitanism as an ideological guide in their research endeavors, retain habits derived from the old society, and lack conviction. Their research is of a piecemeal sort. Is it permissible for a CCP member to criticize these shortcomings? Yes! Criticism in this case is not only permissible, but mandatory. Such criticism should assist the scientist in enlarging his personal perspective and in improving his research.

Is it permissible for a nonparty scientist to criticize party members working in the academy (and party members who are scientific workers and whose currently small numbers are being increased daily) who have committed errors? Yes! This is absolutely permissible and mandatory.

Scientists with party membership status take advantage of their position and deal cavalierly with scientific research and researchers (while neglecting personal studies), insisting, when discussing problems that arise, that they are "100-percent Marxian," they will not gain full recognition in our group. Party scientists who nurture erroneous concepts and who are guilty of malfeasance must be severely criticized by all concerned. A person must not be drawn into the false belief that just because he is a party member or has party seniority he is therefore -- automatically -- "100 percent Marxian" and infallible.

Of course, some criticism can always prove to be erroneous. Thus it is necessary for everyone concerned to talk over recurrent problems. In the masterpiece Problems of Marxism in Linguistic Research / Marxism and Linguistics, Stalin said: "It is universally accepted that without a difference of opinion and a freedom in criticism, it is impossible for science to develop and progress."

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Chairman Mao once said: "Self-satisfaction is the enemy of study." This is a universal truth. Whether one is a veteran member of the Communist Party or a party member with high social status, when self-satisfaction begins to germinate, the mind begins to deteriorate. K'ang Yu-wei -- a bourgeois reformer who instituted the Reform Movement with Emperor Kuang Hsu -- remarked that at the age of 30 his knowledge was complete. K'ang denied himself further advancement for he believed that all true principles in the world had been already comprehended. In the beginning, he was a progressive. The older generation even regarded him as a rebel. But he degenerated from a progressive to a reactionary. Of course, the primary reason for such a degeneration may be found in his class-conditioned thinking. It is equally obvious that inevitably he would have turned reactionary as a result of his self-satisfaction.

The Chinese of old used to say: "Studying is like rowing upstream: not to progress is to retrogress." Everything moves forward. One may be correct today, but something new will appear tomorrow and if this new concept is not grasped and comprehended, one will surely lag behind. And how rapidly our people's tasks move along today! New phenomena appear; those with the slightest tinge of utopianism will be relegated to the past. Thus, who can say when and under what conditions a party member is absolutely "100 percent correct?" Whether one is a member of the Communist Party or not, if he claims to be "100 percent correct," but has not worked with true conviction on a concrete research problem, he can progress only with the assistance of criticism. For a CCP member who errs in this way, criticism should be even more severe.

Thus, party members may criticize nonparty workers, the bourgeois cosmopolitanism they drag along from the old society, and all the old habits and erroneous concepts. The nonparty worker has the right to criticize the mistakes of his counterpart in the Communist Party. In this there is mutual help and progress. The academy will surely show marked improvement when such mutual criticism and self-criticism become operative.

In the operations of the academy, we must study not only the relationship between CCP members and nonparty scientists, but also the liaison existing between the old and the new scientists, that is, old and young in years. Some old scientists despise the new scientists and some of the new ones despise the old. Why is this true? The old and new scientists have, without exception, virtues as well as shortcomings; but each side appraises the other's weaknesses in the light of respective personal virtues. Thus, mutual disrespect prevails.

We all recognize that the old scientist has his peculiar virtues, of which experience is most important. He is more knowledgeable. Yet, there are several shortcomings and imperfections. On the assumption that he has read more books and consequently has become more prescient than his younger counterpart, the old scientist "follows tradition and withdraws from the dusty world." Self-satisfaction develops and personal conclusions appear inviolable.

I have studied in traditional schools where the ideology of the old teacher is different from that of the young pupil. If one did not listen to and obey the teacher, the latter would strike him across the face. The teacher believed that there were no true principles other than those which had already been revealed. He would become angry if a young man stepped beyond what was formerly youth's prescribed station.

These teachers did not recognize their profound personal ignorance. Similarly, many old scientists have been unable to comprehend immediately new

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principles. By "many" I of course do not mean all of the old scientists. Yet some of the young scientists react to and accept new phenomena more rapidly. Old scientists retain antiquated, bourgeois concepts and codes of behavior, such as individualism, sectarianism, and personal ambition. These are certainly serious weaknesses. On the other hand, the outstanding virtues of the young scientists are to be seen in their immediate reaction to new phenomena and in their active progressiveness. There are no traces of self-satisfaction with what has been mastered and new techniques are accepted because the traditional influence has been negligible.

Of course, there are young scientists who are very egotistic -- self-satisfied with their own minor achievements. Yet the central defect lies in the young scientist's inexperience. His scientific foundation has no depth. He might transpose the old scientist's defects to the position of personal merit and consequently stumble about with little care for details.

If the old and new scientists could understand the nature of their respective counterpart's imperfections and virtues, there would be a mutual criticism of imperfections and a mutual acquisition of virtues. Thus the old scientist would learn how to be young and the young scientist would acquire experience and depth of understanding. The old scientist should love and protect his young counterpart. The young scientist should respect, honor, and, more important, attempt to recognize the virtues of his old counterpart -- acquire knowledge from him and ask for instruction.

B. Orientation of Operations of the Academy

There is an easy solution to the problem of directing the operations of the Academy of Sciences. The academy's benevolent research should serve the immediate needs of the people and assist in the completion of the nation's present central task of construction. It is imperative that scientists remain realistic -- very realistic. To be in touch with reality is to be truly in touch with the broadest cross section of the people. Clearly, our science can advance rapidly only with the welfare of the people as its fundamental orientation and the realistic liaison with the masses as its fundamental goal.

In the past, our nation has produced a few genuine natural scientists. Although they were realistic and diligent in scientific research, they failed to produce a single monumental contribution. Our nation has yet to bring forth, in this modern era, a natural scientist of top rank and international fame or make a contribution to natural science that is especially creative and significant for the entire world.

Is this true because we are peculiarly incapable? Of course this cannot be the conclusion. The conclusion is that under the counterrevolutionary regime -- the imperialist regime -- China's industry could not develop and consequently the needs of our people were met unsatisfactorily. The few persons who studied science were unappreciated; unfinished research was invariably abandoned. Other persons confined themselves to their private quarters and worked alone. Could science possibly have developed in such times? Could we have made great contributions?

We cannot fully blame the old scientists for this because it was a situation which had been wrought by social and historical factors. Today, China has undergone a complete revolutionary transformation and industrialization is about to begin. How is this industrialization to come about? It is as necessary to have dynamic scientists as it is to have a dynamic people. The sacred trust of the scientists is to assist, with conviction, in the industrialization of the nation. In this task, every road naturally passes through the domain of science; and every such road leads science into unobstructed future development.

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If our scientists look but do not see, listen but do not hear the rumbling of the revolutionary transformation of society and the great forthcoming task of industrialization; if they conceive of science as a "lone fragrance appreciated only by the self" and consider that after all it is best to lock oneself up in a tiny room and work in solitude, they will have cut themselves off from essential reality and will degenerate into the state of anarchy. A scientist who lacks concern for the nation's welfare and the people's standard of living cannot possibly make outstanding discoveries in science. The great scientists Pavlov and Michurin were extremely patriotic and ever conscious of the nation's welfare and the people's standard of living. Thus their monumental discoveries were not the end products of historical chance.

When Chairman Mao commented on the need for working with the people, he naturally emphasized coordinated research for the people's welfare. At present, large-scale economic construction is vital for national welfare. The following tasks are also important: the strengthening of the nation's defenses and the pursuit of peace, the continuous elevation of the material and cultural standards of the people, and the transformation of our country from the New Democracy stage to the socialist and, eventually, Communist era. If our scientists hope to raise the general level of China's science and propel this science up to the level of world science, they must come to grips with reality and coordinate research in the service of the people. Orientation toward the people and coordinate of research are thus the fundamental goals of the Academy of Sciences. There can be no other orientation.

The orientation is clear. I want to explain, more fully, however, a few relevant problems.

First, I oppose the presentation of a biased formulation of the problem of relating theory to practice. One might ask: "Is it not sufficient to practice without theory?" The answer is no! We should not! As long as theory must be related to practice, there remain two sides to the problem. If there were only one side, the problem of finding a relationship would be nonexistent. What I mean to say is that the two must not be isolated but related. It is incorrect to speak of theory without practice or practice without theory. Stalin said: "Theory without practice, is empty theory. Practice without theory, is blind practice." Chairman Mao often quotes this remark to refute the extremist tendencies: the favoring of theory over practice and the favoring of practice over theory.

The integration of theory with practice is demanded by the Marxist-Leninist doctrine in every scientific endeavor. Stalin said: "Theory is the total experience of the international labor movement." His reference is specifically to the theory of social revolution.

I am an outsider looking at the natural sciences, but I believe that theory in natural science is, similarly, the total experience of practice. It is impossible to produce theory without total practical experience in the field of kinematics.

According to the explanation offered in Marxist-Leninist doctrine, theory must postulate the laws of the motion of matter and must clearly state the numerous, differing relationships which obtain in the various classifications of matter. This explanation is true for research procedure in the natural sciences. What kind of theory is that which cannot clearly describe the essential nature of matter and the relationships between various classifications of matter? How will the laws of motion and the interrelationships of various classifications of matter be postulated if concrete, objective matter is not carefully studied and voluminous reference materials avoided?

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Chairman Mao clearly explains these problems in his works, "On Practice" and "On Contradiction." Chairman Mao has always emphasized, especially in his article entitled "On the Reform of Our Study," that we must support coherent and thorough analyses with sufficient documentation. Viewed in this light, theory must be the analysis and description of the internal and external relationships obtaining in a given quantum of matter and must be supported by a full documentation from factual data. As such, theory cannot be solely dependent upon superficial facts and special examples because these do not constitute bases for a valid theory. One cannot induce a theory from disconnected and irrelevant facts.

It follows, therefore, that the integration of theory with practice does not presuppose the integration of a special aspect of practice with theory; rather, it presupposes the integration of all the various aspects of practice connected with a particular theory.

Of course, a specialized science examines quantum of particular kinds of matter. Yet the internal and external relationships obtaining in a given quantum of matter are multiple and to draw arbitrary conclusions from only one relationship would be incorrect. Instead, by observation and experiment, we must understand the nature of matter from a total, but composite, perspective. Thus in relating theory to practice, we must view theory in its multiple relationships to practice. We must always keep in mind the instructions of Chairman Mao to avoid superficiality.

We must repeatedly emphasize the principle that one cannot omit practice and discuss theory in a vacuum. Similarly, we cannot omit the rich and varied experience of practice and work from a prejudiced schema. To isolate an object, rejecting and denying the relevance of the milieu in which it is found, and to conduct experimental research from a prejudiced schema in the solitude of one's private laboratory is to estrange oneself from the totality of the real world. For example, I have been informed of a certain scientist who neglected the relevance of soils in the solution of problems dealing with land fertilization. To solve a practical problem in such a manner is, I fear, inappropriate. Although the object of research is a concrete relationship -- a definite, practical relationship -- if one isolates this object of study from the total milieu, an accurate theory cannot be proposed. For, since theory is the postulation of the laws of the motion of matter, matter and environment in which it is found must be interrelated.

With regard to the question of relating theory to reality, some persons may ask: "Certain theories of the natural sciences have no direct bearing on current production. The relationship is indirect. Should such theories be retained?" Yes, of course! Current production has no immediate relevance to astronomical and mathematical research, and vice versa.

Yet these two sciences explain different phenomena, and these explanations aid in the development of research techniques and widen the horizon of other scientific disciplines. In this way, research in astronomy and mathematics can be of some use in the development of industry and agriculture. A similar relationship exists between research in other fields of natural science and current tasks. Thus, some theories are immediately relevant to current production but are only indirectly relevant to concrete application. These theories may even be totally inapplicable to current production, although the possibility exists that they will be applicable to future production.

Let us recognize that at present certain scientific endeavors are just in the early developmental stage; for us to demand immediate universal application to current production to enable the living standard of the people

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to rise would be unreal. Actually, the conscious integration of scientific research with the needs of the people is progressing from a small-scale to a large-scale operation. In scientific research, we must maintain attitudes of respectfulness and willingness to assist. The utmost folly -- the abandonment of research -- would be the immediate result of our failure to assist directly in all scientific endeavors.

Someone has raised the question of the applicability of the various disciplines of the social sciences, for example, historical and archaeological research, to current production problems. I believe that research in these disciplines has no immediate applicability to current production. Yet such research brings to many persons an understanding of historical events and to science a broader perspective. Thus we should give it our support.

Second, our scientific perspective must be extended so that we do not become automatically limited to irrelevant scientific research. I have heard of some scientists who want to "pursue extraneous subjects to transcendental levels," to "discover something wonderful." We must not coerce them or force them to discontinue such projects. We must not wave a menacing, cautionary finger and say: "You must not pursue this matter further!" We must persuade. If they continue to reject majority opinion, permit them to work on these projects. When they have missed the mark and met with failure, they will come to acknowledge that the majority opinion was correct and will change over, voluntarily, to work for the goals we have set.

I must repeat that it is mandatory for scientific research to contribute to national construction. Thus the research problems which occupy the scientist's time should be primarily oriented toward procuring the things universally demanded by the people. Research problems should be significant for the entire nation. In a word, research should have a definite aim. Major problems should be solved. We must not search for the "twigs and branches" only. We must not study for the sake of study.

Marxists have always criticized the opportunist Bernstein, a leader of the Social Democratic Party of Germany. Lenin said that "his name will live in infamy" because he maligned Marxism. Bernstein said: "The movement is everything; the aim is nothing." Marx said that we must embark upon the great proletarian revolutionary movement, overthrow the bourgeoisie, enforce the dictatorship of the proletariat, and establish socialism and Communism. But Bernstein, in his blasphemous manner, said that that movement was completely aimless. In research, we Marxists must have a clear and definite goal before us. Our work will prove to be quite useless without a goal. We must study for the sake of the people and in order to solve the major problems existing in the sciences.

Someone might say: "I am interested in this particular project." The Marxist must reply that individual interests, aims, and benefits will not be obliterated. All we require is that individual aims coalesce with the larger aim of meeting the people's needs. We have here a specific standard with which to measure the importance and relevance of individual interests, aims, and benefits. In other words, these individual indulgences must be directed toward elevating the people's welfare. It is erroneous to divorce these individual indulgences from those of the people.

Some assiduous scientists are engaged in research -- research very often without results -- which is oriented solely toward personal interests. A person engaged in the study of history who directs his attention to the verification of clan genealogies is, we admit, studying a material thing and a concrete phenomenon. Yet he could study for a long time. Would it do any good or serve a useful purpose? It would be useful for the clan and useless for the nation's people. Therefore, one might as well avoid research because aimless, indiscriminate research wastes energy.

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Permit me to say, as a corollary, that while some objects at first glance appear insignificant and consequently gain only minimal recognition, the perceptive scientist may discover, after adequate research, that these objects explain certain important problems or lead to important discoveries. We must not ridicule the scientist who is engaged in such a study. We must not stand in his way. We must rather respect his intelligence because we cannot know a priori that his research will not end in a monumental contribution. We ask only that the scientist be able to explain the plans and the aim of his research projects.

Third, in the preface to the French translation of *Das Kapital*, Marx said: "There is no smooth and easy road in the sciences. Only those who do not fear danger and hardship can hope to reach the summit." In historical research, Marx was a man of outstanding genius. In scientific work, however, he had to labor strenuously. If one does not labor strenuously and far into the night while conducting research, his contribution will be insignificant. Marx was like this. Engels was like this. Lenin and Stalin were like this. In China, Chairman Mao is like this.

Everyone should emulate Marx. I think our scientists would do well to understand a little about Marx's research procedures. Everyone must look for these study materials in the work *Reminiscences of Marx* by Lafargo and Lipkins. From this book we come to understand the truth of the principle that genius is nothing more than diligent study. Genius does not come from heaven, but from earth. How does one become a genius? One becomes a genius by planting himself on the firm ground of reality. Airplanes fly into the heavens, but they always rise first from the ground. There is no air base in the heavens! We have many persons in China who were precocious and not too bad in their youth. Yet the results they have achieved are still insignificant. Looked at from the individual's viewpoint, and disregarding his social position and environment, such persons have equated genius with flights into space. They have yet to discover a base on the firm ground. When they fall, they are dashed to bits -- flesh and bone. The old Chinese proverb puts it thus: "Wisdom in youth does not necessarily lead to wisdom in maturity." Why is it that one may be wise when young and unwise when old? It is because when wisdom becomes manifest, the individual relies solely upon this wisdom and shuns strenuous labor. But at this stage, his wisdom becomes warped. For this reason, it is imperative to cultivate an attitude of total simplicity and humility and integrate such with aggressiveness. Chairman Mao demands this of us.

This simplicity, humility, and aggressiveness, this strenuous labor which subsides only when the goal is reached cannot be separated from the need for constant self-criticism. An intellectual who does not perpetually review his personal shortcomings and correct his personal errors is not a simple and humble intellectual. He will achieve little in the field of science. Consider Marx as a case in point. Engels said: "Marx believed that even his best was not good enough for the working class. He insisted that if one did not offer his best for the cause of the worker, it would really be a sin!"

In the *Reminiscences of Marx*, the authors write: "He (Marx) not only refused to accept facts as a matter of trust, but also in treating any problem he refused to participate in a discussion of it prior to making a thorough study of it. He was always unwilling to release a work for publication until he had revised it several times and was fully satisfied with it. He would never dangle half-baked ideas before the public eye. To let someone glance at a draft manuscript which had not been personally proofread would cause him the utmost consternation."

It is clear that Marx has mastered the synthesis of positive realism with self-criticism. At present, the center of our attention is in cultivating this

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Marxist attitude in our academy. We must recognize that in scientific research the slightest miscalculation inevitably results in large errors. Our scientific workers should proceed only after their feet have been solidly planted in firm ground. They must advance through the avenue of tireless competition. We must not be fearful of correcting personal errors and must, on the one hand, openly accept the criticism of others, and, on the other, subject ourselves, with like zeal, to constant self-criticism.

Fourth, the scientists of the academy should regard scientific research as a task held in common by the people and the scientists. It is essential to establish a basis of mutual assistance in our research and, gradually, a method of group study. For one to work alone and not help others is an impermissible procedure. The practice of allowing "each to sweep the snow from his doorstep heedless of the frost on the tiles of others" should be discarded in the new era. A system of liaison and a method of concrete mutual assistance should be established between each research agency and each laboratory. Our scientists should unite and cooperate with each other. Self-criticism should be properly and universally coordinated.

Research programs can be drawn up for the academy on the basis of the preceding principles. Each researcher and each laboratory should draw up a research program and submit it to the leadership organization of the academy for examination. The leadership organization of the academy should discuss each program with the laboratory concerned. A comprehensive program must then be designed and presented to the nation as a program of the Academy of Sciences. In preparing these programs, it is essential to obtain the opinions and suggestions of all the industrial, agricultural, communications, and water conservation agencies of the Central People's Government and to formulate, in precise terms, the essential tasks. This will link our program more closely to national needs and facilitate the smooth execution of the plans. Of course, this program may be changed to meet changes in objective conditions.

Li Ssu-kuang has an excellent idea. He says that the leadership organization of the academy should help the various laboratories to fix research problems. This, I think, is the focal point of operations of the academy's leadership.

C. The Scientist and Patriotism

The scientist should love his country. He should serve his fatherland and his people. Everyone knows that, for us, patriotism and internationalism are inseparable.

Our China has a long history of culture and civilization and has contributed notably to world civilization: the art of printing, gunpowder, the compass, and so on. This is universally acknowledged. But if, on this account, we become egotists, our contributions will lose their luster. Besides, these are our ancestors' contributions, not ours. It is not correct "to count the canonical texts [one has mastered] and forget the ancestors [responsible for aiding such mastery]." Yet we must not remember only our ancestors and forget about ourselves. This would be more incorrect. To forget the backwardness of modern China in the sciences is to be completely bereft of a future perspective. It must be recognized that at present we trail behind. We must catch up to those ahead of us. To catch up, we must strive tenaciously. We must not boast.

We must acquire creative self-confidence. Imperialist aggression abroad and counterrevolutionary rule at home have dragged our country into a dark abyss. Those who lacked confidence in the people believed that China's future was hopeless. A few cultured compradors said: "Even the moon shines brighter in the US."

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There are such persons in scientific circles. They believe that everything in the US and England is good and that everything we have is inadequate. This kind of national self-degradation is our heritage from imperialist oppression. At present, however, the people of the fatherland have been liberated and have broken the shackles forged by world imperialism. Our revolution has gone through periods of extreme suffering and bitter hardship, but the Chinese people under the leadership of the CCP and Chairman Mao have emerged as the ultimate victors in the protracted struggle.

This proves what Stalin pointed out long ago: "The forces of the Chinese revolutionary movement are incalculable." The future of the Chinese people is unlimited because they possess such a great, incalculable concentration of forces. We scientists are the Chinese people's children. Can we not achieve great merit for the fatherland under the leadership of Chairman Mao? Indeed we can! We scientists, with the leadership of Chairman Mao, can achieve great merit for the fatherland and the people.

To be sure, most of our science is still in the stage of infancy, but infancy has its advantages: science then is not shackled by old traditions and can accept new things with facility. We are everywhere, with regard to science, in unplowed territory. If every scientist were to apply himself and release his energies, we would have scientific achievements.

In 1945, Chairman Mao said his work On Coalition Government: "Without an independent, free, democratic, and unified China, there can be no industrialized China. Japanese aggression had to be eliminated for our independence. The Kuomintang's monolithic dictatorship was obliterated as our coalition government instituted the people's freedom, the people's unity, and the people's army. Land reform and the concomitant liberation of the peasants led to freedom, democracy, and unity. Without independence, freedom, democracy, and unity, there can be no real large-scale national industrialization. Without industrialization, there can be no resolute national defense, no people's welfare, no national prosperity.

"The 150 years of history since the Opium War of 1840, and particularly the 18 years of Kuomintang rule, have vividly clarified this important truth for the Chinese people. A China not weak, but strong, is a China neither colonial nor semicolonial but independent; a China not feudalistic but free and democratic, not divided but united. For many years, many people in semicolonial, semifeudal, and divided China dreamed to develop industry, build national defense, raise the people's living standards, and prosper the nation. But the dream vanished. Many good-hearted educators, scientists, and students showed no political appetite, believing that they could best serve the country through self-imposed studies. As a result, the dream resolved itself into nothingness. That it dissolved was a fortunate event.

"The dissolution of such an infantile dream heralded the beginning of a strong China. The Chinese people learned much during the war against Japan. They discovered that after the elimination of the Japanese aggressors, it was imperative to build a New Democracy in an independent, free, democratic, unified, and strong nation. All these conditions are interrelated and since one depends upon the other, we must have all in our fatherland. If we can have all, there is hope for China. For the liberation of the Chinese people's productive power, and providing it with the potential of full development, depends on the realization of the political conditions and circumstances of the New Democracy within the entire territory of China."

This passage describes the development of the conditions which led to the dissolution of the dream of so many people all of whom had originally believed that it was possible to develop industry and to build a strong

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nation under the rule of foreign imperialism and feudalism. It shows that without the overthrow of the imperialists and the Kuomintang regime, there could be no People's Democracy government and no industrialization of China. But now, these political conditions are before our eyes. In the not too distant future we shall be able to build up a strong, industrialized nation. This is no longer a dream. It is reality -- something we can already see. Our scientists are fortunate in that the fatherland is a mighty country waiting for us to advance, to develop scientifically. In other words, our scientists have an open field for maneuvers. Consequently, they are optimistic.

There has been no large-scale campaign to further the cause of science since the founding of our great People's Republic of China. We have not yet found a way to establish national merit. Although there have been some contributions, they remain generally negligible. Hereafter, we must strive, in a more positive manner, to achieve something for the people, to achieve something for the fatherland, to achieve something really outstanding. Some individual scientific researchers have adopted the negative attitude expressed as follows: "If one does not seek great achievement, then in seeking he will be faultless." This is bad. We should -- indeed we must -- seek to achieve something great and good. Not to seek to achieve something good is in itself bad. How can one not seek to achieve something good and still feel that one is not bad? In striving to achieve something good, of course, one is bound to make mistakes. Thus we should acquire a spirit of criticism and self-criticism and try our best to avoid mistakes, or at least reduce their number.

It is very important to study Soviet science. Under the banner of Lenin and Stalin, Soviet science stands at the forefront of world science and has made great contributions to the world. The things that Soviet science has contributed, as well as the techniques, should be studied. President Kuo of the academy has issued a call to everyone to study the Russian language. I believe this to be a short cut for everyone who studies Soviet science. Many of you here understand English, French, and German. Consequently, you will be able to learn Russian rapidly. Of course, to say "Study Soviet science" is not to say that we should not make use of the works of English and US scientists for reference. We not only can use them for reference, we must use them for reference. Generally speaking, however, all that is good in English and US science has already been compiled by the Soviet Union. Thus, it is quicker to study from the Soviet Union -- and better.

The Central Committee of the CCP and Chairman Mao are especially interested in and concerned about the activities of the academy. During the past 3 years, our party and our Central People's Government have not had time to give much attention to the academy's operations because of the multiplicity of tasks China has had to deal with. But we can expect that our party and our Central People's Government will gradually exercise greater control over the academy's future operations because the people need scientific achievement. If the country is to undertake large-scale, long-term economic construction, we must rely on the efforts of science.

Finally, I completely agree with President Kuo's report on ideological reform. The importance of ideological reform is clear to all of us. The ideological reform of scientific researchers is naturally a long-term process. Besides, we have just quoted Lenin to the effect that the scientist must, through personal toil, gradually become willing to accept Communist thinking. However, if we could have but one intensive drive for ideological reform, this would enable our scientists to cast aside more quickly the old and harmful concepts and would promote a closer liaison between the scientists and the people. I believe that following this drive for ideological reform, a new atmosphere will appear in the academy and the work of the academy will gradually be directed along the correct road.

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