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THE PROBLEMS OF THE INTELLIGENTIA IN
THE PEOPLE'S REPUBLIC OF CHINA: 1949-
1984 -- A SOCIOLOGICAL PERSPECTIVE

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The Problems of the Intelligentsia in
The People's Republic of China: 1949-
1984 — A Sociological Perspective

By

Xu Xiaohu

A Thesis

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ABSTRACT

The Problems of the Intelligentsia in the People's Republic of China: 1949-1984 — A Sociological Perspective

By Xu Xiaohu

This study, from the perspective of the sociology of the intelligentsia, describes the external social, political and economic factors which affected the productivity and the quality of professional life of intellectuals in the People's Republic of China. Further, it explores how these external factors remain unsolved problems facing Chinese intellectuals.

In order to specify these external factors, Chinese governmental policies towards intellectuals are examined. Through a documentary analysis and historical comparison, this study explores the very strong anti-intellectual attitude during the Cultural Revolution period held by the Chinese government and the Chinese people. The highly centralized social system was not favorable towards Chinese intellectuals as well as improving the quality of professional life. The atmosphere of discrimination and prejudice against intellectuals lowered productivity and led to poor working and living conditions of Chinese intellectuals. Increased participation of intellectuals in decision-making and increased autonomy to perform intellectual work, particularly in academic settings are essential to improving

the position of Chinese intellectuals in Chinese society.

New tendencies and trends in policies towards intellectuals are examined and an agenda for future research on Chinese intellectuals is charted.

Acknowledgments

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In addition, two members of my committee, Dr. John Useem and Dr. Jay Artis, gave careful and critical readings to later drafts of this manuscript. The questions and issues they raised caused me to think more broadly and deeply about the subject and future research. I thank them for their wonderful suggestions.

Special appreciation is also due my wife and my parents. Without their encouragement and love, this thesis would have never come into being.

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I. Introduction

1. Importance of Research Area

The sociology of the intelligentsia has been internationally recognized and acknowledged as a new growing branch of sociological inquiry.(1) This young branch of sociology, a systematic and comparative study of those people who participate in the creation and administration of cultural values and knowledge, originally emerged from both the sociology of knowledge and the sociology of science.

The sociology of the intelligentsia centers its attention principally on the social roles of the intelligentsia or intellectuals and examines social, political and economic factors (social environmental variables) which affect the performance of these roles in society. Karl Mannheim (1936) noted in his book *Ideology and Utopia* that the sociology of knowledge is mainly concerned with those persons in society who are the bearers of intellectual activity, namely the intellectuals. He argues that the composition of this group, their social and class backgrounds, the method by which they are recruited, their organization, the rewards and prestige they receive, and their participation in other spheres of social life constitute some of the more crucial issues in the sociology of knowledge. To a certain degree, overlapping with this viewpoint, the sociology of science has also developed an important theme which deals with the social formation and institutionalization of scientists (Merton,1977).

Joseph Ben-David (1971) summarized two major approaches within the framework of the sociology of science, they are the interactional approach and the institutional approach. The former one heavily concentrates on the social relationships between scientists and scientific community. At sametime, it takes into account the productivity of scientists. The institutional approach to a large extent pays attention to the contents of scientific knowledge rather than scientists themselves.

Related to the productivity of scientists (or intellectuals), Assen Yossifov (1979) stressed that the professionalization of intellectuals is a key to understanding what factors affect the work of intellectuals. Both Edward Shils (1972) and Yossifov agree that the sociologists are mainly oriented to an external or social environmental approach to the study of intellectuals and attach priority to values, world-view, institutions and broad socio-political settings confronting intellectuals. For Shils, the structure of intellectual institutions and the institutionalization of intellectual production are affected by such external social factors as the freedom to pursue creative work, adequate research facilities and living conditions for the intelligentsia, and state policies towards them.

Unlike the sociology of knowledge which often deals with very abstract philosophical problems in social knowledge and unlike the sociology of science which studies scientists only, the sociology of the intelligentsia examines the general conditions which structure the roles of intellectuals in society, not only that of scientists.

It specifically defines and conceptualizes the intelligentsia or intellectual, and categorizes their social and class status as well as analyzes the social roles played by and the social position occupied by the intelligentsia.

In this thesis, I will apply some sociological methods and knowledge from the perspective of the sociology of the intelligentsia to Chinese society. The goal of this application is to examine and find out how the external factors (social, political and economic), including state policies affect the performance of social roles by Chinese intellectuals. In other words, this study will examine how Chinese governmental policies and attitudes towards intellectuals affected the treatment received by Chinese intellectuals and the roles they played in Chinese society. The following questions will be explored:

— What are the social characteristics of Chinese intellectuals? How are they defined by the government? How are they organized?

— In reflecting upon the characteristics of Chinese society, do Chinese intellectuals form an independent social class or a social stratum? What is the government attitude towards this classification?

— What social positions do they occupy in society? And what kind of social values and views do they hold?

— Furthermore, do Chinese intellectuals have access to the process of decision-making in Chinese society and do they have a certain degree of freedom or autonomy to carry out their research

and other creative activities?

— Finally, what is their quality of life (income, housing conditions, health care etc.)?

2. Research Sources and Methodology

One of the research methods which might be appropriate for a study like this would be to construct a questionnaire first, then draw a sample and to do survey of Chinese intellectuals. Data thus collected could be used in a statistical analysis.

Another method would be to become directly involved in the daily activities of intellectuals to observe and interview them through a field method approach. By employing the field method along with interviewing, first hand data could be easily gathered. But because I am unable to return to China to conduct such a study, using field or survey methods is an impossibility. Instead, the only feasible alternative for this study is to analyze documents published in China. Thus, the documentary method will be used.

Fortunately, original and official sources are available for exploration. Much of this material comes from Chinese periodicals as well as Party and non-Party newspapers. The sources which are the most frequently employed in this study are :

1) Renmin Ribao — 人民日报 (People's Daily), the organ of the Chinese Communist Party, contains all Party's and the governmental policies and directives;

2) Hongqi — 红旗 (Red Flag), Party's journal, serves as the

Party's theoretical guide;

3) Beijing Review, weekly English publication of P.R. China, officially provides the most comprehensive news reports for foreign readers;

4) Guangming Ribao — 光明日报 (Enlightenment Daily), published in Beijing by a minor party — the China Democratic League, is a newspaper specializing in cultural affairs and discussion of the Party's policies affecting intellectuals;

5) China Reconstructs, English journal published monthly by the China Welfare Institute, focuses on Chinese People's daily lives.

Through reviewing literature and gathering data from various documents, I have discovered that pioneer and previous studies in the area of sociological research on Chinese intellectuals are very few and limited. References and data are difficult to find. This absence of sources is largely due to the separation of contact between China and Western countries for about thirty years and the unavailability of statistics from Chinese sources. The social and academic separation of contact between China and the West is a main factor affecting this documentary study. Before the 1980s, very few foreigners were allowed to travel in China, and certainly until recent days, foreign scholars could not receive permission from the Chinese government to do systematic research in China. Another aspect of this disconnection is the unavailability of contemporary studies on Chinese intellectuals. As a result, this study has to rely on documentary analysis. Yet this reliance on documents poses

another limitation. For more than ten years, some statistics and other necessary data are not available. First of all, because of the political chaos in China, such work has not been done; secondly, because of the nonexistence of sociology until 1980, studies from a sociological perspective are unavailable.

Yet there has been some studies of the Chinese intelligentsia. Chronologically they are as follows:

1) Before 1949: Mote (1971), Lou Tsu-K'uang (1974) and Grieder (1981) extensively discussed the intellectual tradition, social values and the development of the Chinese intelligentsia;

2) 1949-1976: Chai (1975), Sigurdson (1980), Goldman (1981) and OECD (Organization For Economic Co-operation and Development, 1977) briefly described the development of science, technology and intellectuals in China after the revolution, and in detail explored the governmental policies towards intellectuals as well as effects on them;

3) 1976-1984: Sigurdson (1980) and Suttmeier (1980) examined the changes in policies and how those changes affected contemporary Chinese society, especially Chinese intellectuals and their future.

However, these documents and books will be supplemented by my personal experiences and observations. In addition, based upon additionally limited sources, the Chinese governmental policies towards intellectuals during the ten years of the Cultural Revolution (1966-1976) will be compared to the period of the post-Cultural Revolution (1976-1984). Through this comparison, I will try to

ascertain the effects of government policies on the Chinese intelligentsia.

3. Definitions of Terms

Some terms I will present in this study have to be specified and defined in accordance with the social context of Chinese society and the specific usage by the Chinese people. The terms "intelligentsia," "intellectuals" and "professionals" are rooted in the cultural and societal history of China and their meaning, their application changed through time, therefore, they must be conceptualized carefully.

1) Intelligentsia and Intellectual

Within the framework of the sociology of the intelligentsia, the terms or concepts of "intelligentsia" and "intellectual" are defined in varying ways. At times, they are used interchangeably. Alatas (1977) argues that intellectuals as a social group should be distinguished from the intelligentsia. By "intelligentsia" he means those who have gone through higher formal and modern education, specialists and professionals, and those who have acquired a higher-level education by other means. Gouldner (1979) pointed out that there are at least two elites within the new class (intellectuals): a) intelligentsia whose intellectual interests are fundamentally "technical" and b) intellectuals whose interests are primarily critical, emancipatory, hermeneutic and hence often political.

In China, the term "zhi shi fen zi" (知识份子) - learned people - is now used as the equivalent to the English word intellectuals and came into use only about 70 years ago. Prior to that, the usual term was "literary men," and in ancient China, "scholars." Each term reflected the fact that intellectuals were literate in a generally illiterate society and made their living through the written word (Fei Xiaotong, 1983). The term in China, therefore, is broader than its usage in the West, where it applies mainly to academics or professionals. However, in the Chinese context, people do not make the difference between the term of the intelligentsia and intellectual in general, without a consideration of their "technical" or "political" distinctiveness. Hence, whenever I use the terms "intelligentsia" and "intellectual" in this paper, I do not distinguish them rather I will use them interchangeably.

2) Professional

In China, the popular usage of the term "professional" occurs when it is used to convey the idea of great skill or proficiency at performing some tasks, and to refer to an individual in such a manner is to accord him high degree of prestige and respect. In this sense, the professional is a person who enters into an occupation which requires an extensive educational and training background.

Since I have principally used Chinese publications, my definition of the professional must conform to the more or less original conception of his role. In China, in addition to educational and training

backgrounds, the actual work experiences are an essential condition for becoming a professional. Thus the professional is defined in my study as the person whose level of education and actual work experiences determine his occupation as a specialist or an expert in certain areas like technician in factory, professor in university and so forth. This group of people, their social status may overlap with intellectuals in Chinese society.

Footnotes

(1) The VIIIth World Congress of Sociology was held in Toronto, August 1974. As a direct result of the panel's discussion for the Congress is a publication — The Intelligentsia and Intellectuals edited by Aleksander Gella. This book provides a detailed discussion of the emergence of the sociology of the intelligentsia from an international view of sociological studies.

II. Historical Overview of Chinese Intellectuals: Tradition and Modernity

In speaking of Chinese intellectuals, the cultural and social tradition of China should be considered. Ancient China has had about a dozen different schools of traditional social thought besides the Confucian school. Each of them has had its independent development and a discernible influence upon the social development of Chinese society. Several religious and philosophical schools, like Taoism founded by Lao Tzu, Legalists led by Han Feitzu, the Mo school headed by Mo Ti, had a strong impact on the development of intellectuals and became significant components of Chinese culture.

Confucianism (Confucius, 551-479 B.C.), advocating political loyalty and favoring the status quo, was accepted as the orthodox ideology by every emperor since the Han Dynasty of 206 B.C.. Confucian classics were used as the content of the civil service examination which provided opportunities for entrance into the government and for advancement of social status. In the long history of Chinese feudal society, a well-known slogan was advocated by the followers of Confucius to encourage people to be literate and intellectualis: "A good scholar will make an official.". This Confucian doctrine implies that the people in ancient China evaluated everything else as inferior, except being a learned person, an erudite scholar. Hence, the scholar is superior not only because of possession of knowledge, but also because of access to power and the imperial

bureaucracy. Scholars were officials who wielded power on behalf of the emperor's government and as a result, were part of ruling class. Certainly, they had a high degree of social prestige. They also received a great deal of respect from society and enjoyed a high social position. For instance, as Weber mentioned, the literati or scholar enjoyed freedom from corporal punishment in ancient China (Gerth and Mills, 1958:434).

According to Confucian doctrine, society was divided into two primary categories — the rulers who worked with their minds and the ruled who worked with their hands. In short, the Confucian school as an official ideology suggested that the intellectual must serve the ruling class, sincerely believe in authority, maintain the social order, and protect the old, stable life style. In other words, Confucian conservatism was essentially a defense of the established order — a defense, that is, of the dynasty and of the interests of the dynasty's servant-participants (Grieder, 1981:20).

The Confucian beliefs of self-containment and social harmony at both the individual level and societal level were challenged by the large scale social changes of the nineteenth century. In 1840, when the feudalistic system and the great Central Kingdom were defeated by the British in the Opium War, "social harmony" (2) disappeared and the "closed door" (3) of Chinese society was broken. The scientific and industrial civilization of the West aroused the Chinese people to realize the gap between the development

of the world and China and to challenge Confucian ideology by introducing advanced Western science and technology. Confucian scholars failed to find answers to these challenges that would secure the survival of their world. A great crisis for Confucianism emerged in Chinese society.

From 1917 to 1919, the "New Cultural Movement" (4) and the "May Fourth Movement" (5) raised their clarion call: "Down with the Confucian Shop!"; "Science, Technology and Democracy" became the banner of these two movements. At that time, a great number of Chinese students were sent abroad for the purpose of learning science and technology from foreign countries. They were concentrated in several countries: Japan, France, Germany and mostly the United States. As soon as these students returned to China, they formed a loose community of Westernized intellectuals. Their Western-oriented social thought and activities gradually came to dominate Chinese intellectual life in later years as they occupied crucial social positions both in political and academic circles. In 1934, 3,856 out of 7,205 college professors in China or 53 per cent of college professors were educated abroad (Chai, 1975:22).

These Westernized intellectuals regarded "science" as the dethronement of the old educational system in China, especially the imperial examination system. They advocated writing in the vernacular rather than the prose written in the classical literary style. Further, they opposed the domination of the Confucian doctrines and morality and encouraged people to learn Western science and technology. By "democracy", they meant, first of all, favoring pluralism over

elitism in social thought and academics; and secondly, favoring representative government over feudalism. In summary, the May Fourth intellectuals were anti-Confucianists and revolutionaries who believed that only science and technology could modernize China and overcome what they perceived as Chinese backwardness.

After the Russian October Revolution (1917) and following the struggle against the feudalist regime in China, Marxism and Leninism were brought to China. The revolutionary intellectuals such as Chen Duxiu, Li Dazhao, Mao Tzetung, and Zhou Enlai (all of them founders of the Communist Party of China), introduced and disseminated Marxist principles to and among Chinese workers and peasants. They promoted the integration of Marxism into the Chinese workers' movement, preparing an ideological foundation for the revolution. Since the founding of the Communist Party of China in Shanghai in 1921, modern Chinese intellectuals were divided into two camps. On one side were bourgeois intellectuals who accepted bourgeois ideology, preached pragmatism, and took capitalist society as a model for the development and modernization of China. On the other side were revolutionary intellectuals who believed in Marxism and Leninism and took the Soviet Union as an example of how to modernize China by establishing a new socialist system in China. This study will focus only on the so-called revolutionary intellectuals who later took over the Kuomintang government and set up the socialist regime in China.

The integration of intellectuals with workers and peasants was the ideology and orientation of the Communist Party of China.

Over many centuries, for most of the Chinese workers and peasants, the knowledge possessed by intellectuals had been used more to oppress them than serving to improve their lives. Therefore, during the Chinese revolution, they tended to be suspicious of intellectuals and were prejudiced against them. This discrimination against intellectuals existed in the Chinese Red Army (later the Eighth Route Army and then the People's Army). There were soldiers who were prejudiced even against doctors and wireless radio operators. During the Japanese invasion, in order to avoid this discrimination, the Party formulated a policy to unite all who could be united in the war effort to help build hospitals and factories for munitions and daily necessities in the armed forces. In army base areas intellectuals were essential, but the problem of discrimination and distrust of intellectuals did not end. On the contrary, in the 1940s in the liberated areas, especially Yanan, intellectuals were examined on the suspicion of being bourgeois and petty-bourgeois intellectuals. Based on an estimation made by the Party, most of the Chinese intellectuals who were in the revolutionary camp came from bourgeois families and had received capitalist education. Because of these reasons, intellectuals had to be ideologically remolded, reformed, and changed. This long term policy of "thought reform" is still ongoing long after the revolution and, parallel to it, the problem of discrimination has been handed down and has become a tragedy for the lives of Chinese intellectuals.

Footnotes

(2) "Social harmony" is equivalent to the expression of the social stabilization, and which is stemmed from Chinese philosophy, especially from Confucianists' and Taoists' cosmology. These schools of thought believed that the all-enfolding harmony of the impersonal cosmic function can be seen to serve analogous, yet qualitatively different ends from those provided by a cosmology oriented towards a supreme power that knowingly directs the cosmos. This harmony also can be applied to human society, that is, a person can orient his/her own life towards social harmony in the secular world much like the harmony of the cosmos. For Confucianists, the emperor is a symbol of the supreme power. The social order or social estate system can not be changed. Otherwise, harmony will be destroyed. Hence, the Concept of harmony that is embodied in Confucian philosophy refers to both social control and the maintenance of the social order (Lung Kwan-hai, 1974:14).

(3) "Closed door" is a figure of speech referring to the foreign policy carried out by the government of the Qing Dynasty. This policy was strongly against any relationships or connections with the world outside of Chinese society. It was an "isolationist" policy.

(4) and (5) The "New Cultural Movement" and the "May Fourth Movement" all took place at the beginning of the nineteenth century. The goals of these movements are to change the old social and educational systems, destroy feudalistic morality and praise science and technology.

III. A Survey of Chinese Intellectuals:

Individuals and Institutions

Before examining how governmental policies affect the productivity and creative work of intellectuals in China, we have to be aware of their social identification in terms of occupation, social position and institutionalization. Or to put it simply: Who are they?

When reading Chinese periodicals and newspapers, one often has the impression that after a long period of malignant neglect, there has been a surprisingly rapid and remarkably effective surge of interest by Chinese sociologists and other social scientists in questions and issues pertaining directly to intellectuals. Very interestingly, Chinese newspapers and magazines have been recently reemphasizing that Chinese modernization requires a strong contingent of intellectuals able to master modern science and technology. Because of the practical needs requiring the co-operation of intellectuals, the Chinese intelligentsia received a slight praise. Yet, a necessary and good definition of them has not been available. A society without a theoretically based and understandable definition of the social roles and contributions of intellectuals to the development and advancement of that society has a tendency to look down upon the intelligentsia. A lack of such a definition might lead people towards nonrecognition of the importance of the intelligentsia for a society. China is this type of society.

1. Rethinking the Definition of Chinese Intellectuals

Since 1949 the earliest definition of Chinese intellectuals was directly borrowed from The Encyclopedia of the Soviet Union, which defined the intelligentsia as a social stratum that is composed of persons who are particularly engaged in mental work — they are scientists, engineers, teachers, writers, doctors and most of the professional personnel in a society. This definition, to a certain extent, has explicitly and implicitly answered the question of who belongs to the intelligentsia and affirmed that the intelligentsia is a social stratum (6) rather than a social class (7) in Chinese society.

About three decades later, a more comprehensive definition appeared in the article entitled "China's intellectuals — Part of the Working Class" by Luo Fu (1980), who states: "In China, the term 'intellectual' embraces professors, scientists, senior engineers and writers who are commonly known as highly qualified intelligentsia as well as ordinary technicians in factories, primary school teachers and other mental workers with professional knowledge". In fact, in this second definition nothing appears that is new at all. It is just a reassertion of former policy. However, three aspects within the definitions must be underlined: 1) the intelligentsia are not an independent social class, but a social stratum which could be attached to the working class or any ruling classes; 2) the intelligentsia as a social phenomenon, are part of a social division of labor in which intellectuals are mental workers who

are divorced from manual labor; 3) the intelligentsia are characterized by certain professional occupations.

By examining the definition given by the Chinese government, we are also aware of some shortcomings. First of all, since the term "intellectuals" is adopted from a foreign vocabulary, we have to trace back the original meaning linguistically. Secondly, the definitions failed to reveal the social functions or characteristics of Chinese intellectuals. Therefore, the work of counteracting these shortcomings has to be done here.

From etymology, we know that in Europe, however, "... to be among 'die intellectuals' in Germany, or the 'intelligenty' in Russia, or 'les intellectuals' in France generally signified that the persons in question were of the educated, professional middle class as opposed to the commercial or industrial one" (Feuer, 1976). In keeping with this tradition, intellectuals in the developing countries are also defined as persons who are engaged in thinking about ideas and nonmaterial problems using the faculty of reason. In other words, persons possessing knowledge, or in a narrow sense, those whose judgement, based on reflection and knowledge, derives less directly and exclusively from sensory perception than is the case of non-intellectuals (Alatas, 1977).

Both linguistical and theoretical definitions remarkably suggest that even for Chinese society, intellectuals share a number of similarities with intellectuals in other countries in terms of their social functions. These features could be summed up: 1) intellectuals

are recruited from all classes though in differing proportions; 2) they are to be found supporting or opposing various cultural or political movements; 3) their occupations on the whole are nonmaterial, being for the most part scientists, philosophers, artists and journalists; 4) to a certain extent they remain at a distance from the rest of society, forming a group of their own; and 5) they are not merely interested in the purely technical and mechanistic side of knowledge, culture also belongs to their world of thought. Based on these characteristics, the Chinese Party assumes that intellectuals by virtue of their knowledge expertise have special access to certain achievements considered to be "cultural values," and who therefore, usurp its leadership. Thus, a new definition of intellectuals began to emerge: intellectuals are that section of the educated people which have aspirations to political power either directly by seeking to become society's political rulers or indirectly by directing decisions made in the society.

So far, I have discussed the different definitions from varying perspectives. Taking account of these considerations, I will redefine Chinese intellectuals as a social stratum who possess professional knowledge and are engaged in mental work, who occupy some crucial social positions and who seek to attain political as well as technical leadership at the level of the superstructure. They are carriers of Chinese culture and tradition, gatekeepers of Marxian ideology and creators or evaluators of new sciences and technologies. Intellectuals, therefore, are essential to the maintenance of Chinese civilization and for acceleration of its modernization.

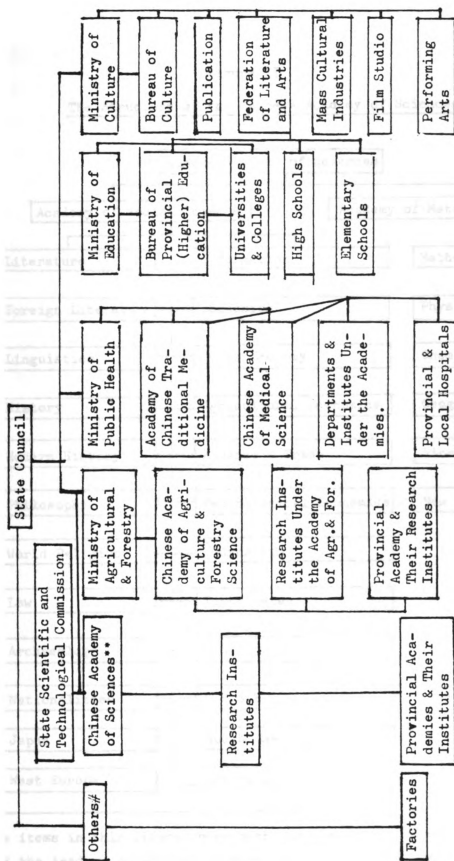
2. Institutions and Population of Chinese Intellectuals

Intellectuals, to a certain extent, form a loose-knit community that is somewhat separate and aloof from the rest of society. In addition, Chinese intellectuals are confronting different situations and contexts which are structured by the Chinese social system and the political environment.

The notable organizational apparatus for intellectuals (see Figure I) that has been created in the People's Republic of China is designed not merely to enforce political and social discipline, but also to provide the means whereby popular participation can be mobilized, and through which it can be manipulated. One can not find any "free intellectuals" in China as in the Western countries. On the contrary, Chinese intellectuals have been well organized within certain distinguished social organizations in which the activities and creative work of intellectuals must be committed to the goals of these units both personally and officially.

The organizational apparatus includes research institutes, universities, cultural industries and factories under the control of the Chinese Academy of Sciences and various ministries. Above these, there is the Central Committee of the Chinese Communist Party which in co-operation with the State Council governmental policies, including policies towards intellectuals, are designed and issued. Under the State Council, the State Commission of Science and Technology is then responsible for the overall planning, co-

Figure I.
The Structure of Chinese Intellectual Institutions



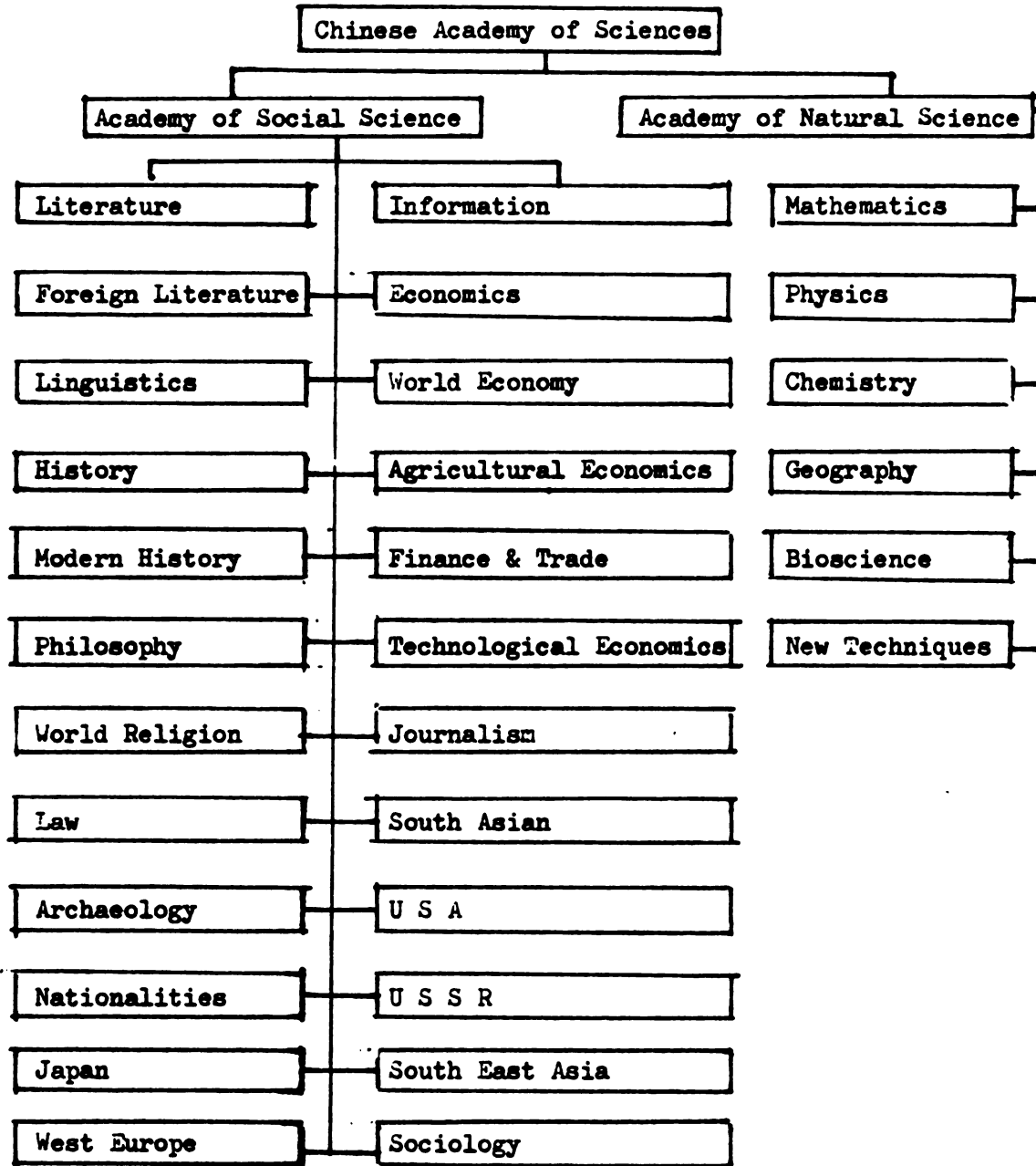
* Figure is based on Jon Sigurdson's Technology and Science in the People's Republic of China.

** Detail, see Figure II: The Structure of the Chinese Academy of Sciences.

Others here refer to the research institutes under the several ministries of industry in China.

Figure II

The Structure of the Chinese Academy of Sciences*



* The items in this figure under both the Academy of Social Science of China and the Academy of Natural Science of China are all research institutes.

Ordination, organization, and administration of the activities of intellectuals. Under its supervision, the Chinese Academy of Sciences (Academia Sinica) is the most important center for scientific research and has at times had a semi-autonomous position. This position is derived from the fact that it runs its own institutes which are mainly in basic and theoretical sciences and that it is today at least partly shouldering the responsibility for post graduate training in collaboration with the Ministry of Education. These institutions or organizations and their linkages and relationships, all shown figured in Figure I and II.

Moreover, the administrative structure at the national level and the institutions of intellectuals demonstrated in Figure I and II give a simplistic presentation of some of the major central agencies responsible for the activities of intellectuals, specifically for scientific and technological researchers. These activities of Chinese intellectuals in China can be found in the following sectors from Figure I:

- 1) research institutes under the Chinese Academy of Sciences;
- 2) universities and colleges (including both high schools and elementary schools) under the Ministry of Education;
- 3) research institutes under the ministries;
- 4) provincial and municipally controlled research;
- 5) research institutes in factories under Defense.

During the Cultural Revolution, including the period up to the Fourth National People's Congress in 1975, the institutions

of intellectuals were crippled by sending intellectuals to the countryside and factories for ideological reformation. During the period of the post-Cultural Revolution, some new institutions have been rehabilitated and established. In Figure II, ostensibly some new institutes under the Chinese Academy of Sciences are found, such as the Institute of Sociology, the Institute of USA, the Institute of Japan, etc.. Restrictive policies towards intellectuals within these institutions have been relaxed through the responsibility system and "advertising-for-intellectuals" system which means that intellectuals themselves could be moved vertically and horizontally in accord with their professional capabilities and talents. Governmental policies towards intellectuals are likely to continue to undergo considerable changes, but the overall philosophy of central control over intellectuals is likely to remain.

Demographically, at the time of the founding of new China in 1949, there were about 3 million intellectuals, including teachers, professors, scientific and technical workers, literary and art workers, journalists and physicians. The number increased to 5 million by 1957. Unfortunately, owing to the years of upheaval in the Cultural Revolution (1966-1976), statistics for intellectuals in this period are unavailable. At the present, China has 25 million intellectuals according to the official publication ("How Many Intellectuals in China?" in Beijing Review. No.13, March 31, 1980). Table I enumerates the number of scientific and technical personnel in state organs and enterprises. Non-scientific intellectuals, like writers, journalists and so forth are excluded, because of

the unavailability of statistics. By taking a look at the Table I, several observations can be made: 1) The percentage of Chinese intellectuals, especially scientific and technological personnel in the totality of Chinese population is fairly low as compared to other industrially developed countries. In 1977, the United States had 1.2 million scientific and technological personnel and the Soviet Union had 900,000. In the same year, China had only roughly 200,000 scientific and technological personnel (The Selected Works of Deng Xiaoping. Beijing: People's Publication, 1983). 2) Despite a high number of intellectuals, less than half of them have obtained a college education or its equivalent; most of them are without higher education, but have skills or experiences that are still classified as intellectuals. Table I illustrates that out of 5,714 intellectuals in state organs, only 2,495 have a college or university education or training (43.7%). 3) The largest proportion of these intellectuals are found in cultural and educational circles and, within them people tend to have a comparatively higher percentage of level of higher education. (74.3% in teaching; 51.1% in research). In general, these three features are also characteristic of other excluded intellectuals.

As a result of this type of centralized management and administration of institutions of intellectuals, freedom or autonomy in creative work and activities is a serious problem.

Footnotes

(6) Social stratum in China, usually refers to different social

Table I. Chinese Intellectuals in State Organs & Enterprises

Year: 1981		Unit: 1,000				
Personnel Departments	Total	Engine- ring & Technical	Agro-tech nical	Health	Scien- tific & Research	Teaching
Nation's Total	5,714	2,077	328	1,680	338	1,291
1. Attended Colleges or Universities	2,495	1,037	115	432	251	660
Percentage %	43.7	49.9	35.1	25.7	74.3	51.1
2. Industry & Construction	1,596	1,229	4	268	15	80
3. Prospecting & Designing	237	221	1	10	3	2
4. Agriculture, Forestry, Water Resources and Meteorology	462	168	231	41	5	17
5. Transport, Post and Tele-communications	174	152		19		3
6. Commerce, Foods, Services, Material Supply and Marketing	47	25	10	11	1	
7. Urban Public Utilities	25	19	1	4	1	
8. Scientific Research	346	35	3	13	293	2
9. Culture, Education, Health and Social Welfare	2,534	45	2	1,286	16	1,185
10. Banking and Insurance	3	3				
11. Government Departments & Organizations	290	180	76	28	4	2

Source: Richard Conroy, " Technological Innovation in China's Recent Industrializa-
tion " in The China Quarterly. No. 97, March 1984.

levels of people within the same social class which is determined by social and economic position in society. For example, within the proletarian class in Chinese society, there will be different groups or levels, such as intellectuals, manual workers, and peasants. Therefore, in China, they are all part of the working class or proletarian class.

(7) Social class is a totality of persons who are classified according to their economic relationships to and possession of the means of production as well as political power. For Marx, in capitalist society, there are two antagonistic classes, namely the capitalist class and the proletarian class. For Stalin, there is no such an antagonism in socialist societies as in capitalist societies. In China, after Mao, this classification also was abolished.

IV. An Investigation of Working Class

Intellectuals In China: Composition and Class Status

As we have discussed earlier in this paper, the definition of the Chinese intelligentsia given by the government declares that intellectuals can be attached to a range of different classes and are by no means always to be found among the ruling class. In conjunction with this principle, in China, intellectuals are regarded as a part of the working class. This class identification is an application of Marxist theory of class analysis or social stratification, and theoretically it has posed several difficult issues.

A distinguishing aspect of Marxist class analysis is its insistence on examining the underlying material basis of observed social distinctions. The critical issue in this class analysis is the relationship to the means of production. According to this analysis, in capitalist society most intellectuals are, together with manual labors, ruled by others. Thus, position is to be determined by identifying a person or category of persons as: exploiters, neither exploiters nor exploited, and exploited. Intellectuals could fit into any of these classes. Actually, this type of classification is still used by Chinese Marxists and involves the utilization of class terms appropriate to capitalist society with a corresponding implication that such terms as working class and bourgeoisie retain their validity decades after a socialist transformation of economic ownership.

This is at least a formal adherence to Marxist principles of class analysis, but the classification itself is problematic and complex.

In the ideology of Maoism, Chinese society is a class-based society in which the task of preventing the restoration of capitalism is far from being completed. Therefore, the class stratification and class status of the intelligentsia must be identified and emphasized. Otherwise, the Chinese people will be confused by not knowing who is a capitalist and who is a socialist. Based upon this ideology, in China some less theoretically sound measures such as family background or individual world view are used to determine intellectual's class status as well as social position. Now let us turn to a detailed analysis of how Chinese government decides the class status of intellectuals and how it enacts policy which is built on the fundamental class estimation and furthermore of how government policy affects intellectuals.

1. Class Status Criteria

On August 4, 1950, the Chinese government announced for the first time that "intellectuals can not be regarded as a class. The class origin of intellectuals is determined by his family background accordingly, and their own class status will be decided by the way of his income source." Furthermore, "intellectuals who possess professional knowledge and technique, and who are employed by the government's cooperatives, or private agencies, organizations and

schools, in other words, whoever is engaged in mental work and paid in wages as the major sources of income for living, their class status equals that of office workers or staff members (the measurement is applicable for both cases: pre-revolution and post-revolution). Thereby, those people are a part of the working class" ("How to Decide Class Status of Intellectuals" in The Collection of the Policies of the Communist Party of China Towards Intellectuals. Hong Kong: contemporary China Research Institute).

These official words were confirmed again by the former premier Zhou Enlai in 1956 on behalf of the Party Central Committee, he said: " By far the large part of them (intellectuals) have already become working personnel for the country, are already serving socialism, and are already a part of the working class."

The determination of the class status (8) of intellectuals can be clearly delineated whenever they are categorized by the following criteria adopted by Party:

1) family background or class origin: those intellectuals who are from the old society (before 1949) and come from non-working families will be labelled as bourgeoisie;

2) world view or ideology: intellectuals from non-working class backgrounds who affiliate themselves with the working class and, often acting as a vanguard party, engage in a long-term and difficult political struggle together with the working class in the course of which such close ties are formed between them and the working class that they can be considered as working class;

3) socio-economic: use of income sources and access to the

means of production as criteria for determining class standing is ambiguous and vague in China; because in the Marxist framework, income and ownership are applicable to a capitalist society rather than a socialist society; such an application to Chinese society is questionable.

However, in the early 1950s, governmental policy towards intellectuals was fairly favorable, and intellectuals were seen as a part of the working class, but they had to be "united" with the working class through re-education and thought reform.

2. Abusiveness During the Cultural Revolution

The classification of Chinese intellectuals as working class members should not be romanticized or idealized. On the contrary, when the Gang of Four came into the power during the Cultural Revolution, Chinese intellectuals were not treated as a part of the working class at all, but were the target of oppression by the "dictatorship of the proletariat." Criteria such as family background to determine class status had been over-emphasized and abused, and the formula to unite, educate as well as reform intellectuals had been distorted.

One of the most notorious of the Gang's doctrines held that the more knowledge one possesses, the more non-revolutionary he is. Along with the extensive criticism of intellectuals and the large-scale effort to find ways of carrying on intellectual work without or with a minimum of intellectual specialists, the difficulties

for intellectuals and their knowledge were exacerbated by the stress on avoiding the restoration of capitalism and anything bourgeois or petty-bourgeois. Intellectuals were viewed by the Gang of Four as the "stinking ninth category" of class enemies, which was a derogatory expression coming after the eight "targets of proletariat dictatorship," they were landlords, rich peasants, counter-revolutionaries, bad elements, rightists, renegades, enemy agents and capitalist-roads.

For the Gang of Four, intellectuals from the old society (before 1949), from the non-working class families or being educated abroad especially in the Western countries, are bourgeois intellectuals. These people were few in number, but obstinate and would be difficult to reform according to the ideology of the Cultural Revolution.

Table II outlines the number of intellectuals trained abroad. From 1850 to 1962, the number of those people trained and awarded degrees in all fields are 36,300. Some of them left the mainland before or during the Chinese revolution. Therefore, those who stayed in the People's Republic and served the Communist government are only about 5,500 (in science, engineering or medicine). This calculation does not take into account losses during the period as the result of death or retirement. The number of those actually working in the mainland in 1962 may have been 15 to 20 percent less than shown here. Nevertheless, intellectuals who were criticized as bourgeois were a very small proportion within the population of Chinese intellectuals, so the Gang's criticism did not only aim for this small portion,

Table II. Intellectuals Trained in the West and Japan

Place Year	Number Awarded Degrees in all Fields	Number Awarded Doctoral Degrees in All Fields	Number in Engineering & Medicine	Number in Sciences, Engineering & Medicine Staying in Mainland	Number of Ph.D. Degrees in Holders of Degrees in Sciences, Engineering & Medicine	Number of Ph.D. Degrees in Holders of Degrees in Mainland China
Total	36,300	4,117	15,500	5,500	1,100	
United States, 1850-1953	13,800	2,100	6,000	2,000	450	
Canada						
Japan 1901-1939	12,000	100	4,500	1,500	50	
Great Britain 1911-1949	2,500	346	1,000	500	120	
France 1907-1962	3,000	582	1,200	500	150	
Germany 1907-1962	3,500	731	2,000	800	250	
Other West European Countries 1907-1962	1,500	258	800	200	80	

Source: OECD Science and Technology in the People's Republic of China, 1977.

but more broad, more extensive.

Besides the old generation coming back to China from the West, a second criteria for oppression emerged in the early 1960s — intellectuals who were sent to and came back from the Soviet Union were considered "revisionists".(9) The term revisionist is related to the ideological separation between China and USSR. Consequently, these intellectuals became scapegoats of the political struggle and the erroneous conclusion drawn from the "International Communist Movement." (10) From the Gang's point of view, these intellectuals were representatives of bourgeois authority, simply because most of them were leading personnel in science and technology. Table III reveals that a majority of Chinese intellectuals who were trained in the Soviet Union, however, were low-level technicians rather than advanced scientists and engineers (20% against 3%). Among students, high school graduates were more numerous than university graduates (14% against 5%), and often lacked the necessary grounding in both science and language to take full advantage of study in the Soviet Union. These students were to receive important work assignments immediately upon returning from the Soviet Union. As bourgeois ideology was seen as strongly influencing intellectuals educated in the West, those who were trained in the Soviet Union were also seen as being similarly affected by Soviet revisionism through the educational process. For the Gang, they were more dangerous than bourgeois intellectuals trained in the West because they were much younger than the latter ones.

Table III. Chinese Intellectuals and Workers Trained in the Soviet Union

Category	Number	Percent Distribution
Scientists	1,300	3
Instructors	1,200	3
Students	7,500	19
Undergraduate	5,500	14
Graduate	2,000	5
Technicians	8,000	21
Workers	20,000	53
Total	38,000	100

* Percents may not add to total because of rounding.

** Source: OECD Science and Technology in the People's Republic of China, 1977.

Again, according to the Gang's doctrine, from 1949 to 1966, within these seventeen years, the educational policies of Maoism (integration with workers and peasants) were by and large not carried out; on the contrary, this educational system led to a situation in which the bourgeoisie "exercised dictatorship" over the proletariat and not vice versa. As a result, students trained in those years were basically considered as bourgeois in their outlook. On the whole, Chinese intellectuals were seen as enemies of the working class. The Gang of Four's view was essentially anti-intellectual and such anti-intellectualism peaked in the years of the Cultural Revolution. It was only rectified after the downfall of the Gang of Four.

3. Rectification and Reassessment

After the Cultural Revolution, on the behalf of the Central

Committee, Deng Xiaoping in 1978 stated that majority of intellectuals "have become a part of the working class itself. The difference between them and the workers is only a difference of division of labor in society." He also pointed out that "we are happy to say the greater part of the scientific and technological workers have stood on the side of the working class" (Deng Xiaoping 1978). Why are Chinese intellectuals now considered part of the working class, and how do we account for this labelling?

Intellectuals from the old society were mostly employed by the capitalists. Like wage labors, they were in essence, mental workers creating surplus value for capitalists. Since the Chinese liberation, these intellectuals have changed from serving the old society and privately owned enterprises to serving the new society and state owned enterprises. Some of them have made outstanding contributions to the Chinese revolution and socialist construction. From this perspective, it can be said that the majority of them have been part of the working class.

Intellectuals who took part in the revolution before the founding of new China had long ago turned into proletarian revolutionaries and intellectuals of the working class. Also quite a number of workers and peasants who took part in the revolution have themselves become intellectuals. Hence they are intellectuals of the working class.

Intellectuals trained by the new government, have in the main received new education (11) and worked under the new leadership after graduation. Classifying them as bourgeois intellectuals is

not reasonable.

In practice, Chinese intellectuals will benefit from this new analysis of their class standing and gain from the changes in the political and technical leadership of China. To the government, even such criteria as the political outlook as a determinant of class status are theoretically and practically unsound for the mobilization of intellectuals in China's effort to modernize its society. At the same time, this label does not reduce the gap between mental and manual labors, but rather facilitates a widening of the gap by removing grounds for opposition to policies favoring intellectuals. Aside from favoring intellectuals, the policy of considering intellectuals as a part of the working class will differentially affect those sectors of the society already separated by wide cleavages of inequality, principally rural residents and women, both of whom are very seriously under-represented at higher levels in the educational system, as well as in present leadership structure.

However, anti-intellectual attitudes in Chinese society at present have changed a great deal since the Cultural Revolution period. Yet for Chinese intellectuals, some unresolved dilemmas remain — ideological remolding, autonomy and the access to the leadership. In the following sections, I will state these problems first, then see how they are affected by governmental policies and how intellectuals respond to them.

Footnotes

(8) Class status in China usually refers to class ranking classifying

people into different class groups.

(9) Revisionist is a derogatory term used in China specifically referring people who are Marxists and Leninists but move away from their basic teachings and principles.

(10) International Communist Movement is an international workers' movement that was based on the First, Second and Third International led by Marx, Engels and Lenin.

(11) New education here refers to a new educational system set up after the Chinese revolution, which aims at teaching the Chinese people to use knowledge to serve the people and society and not to exploit people.

V. Major Problems Facing Intellectuals in China

The major problems of discrimination and prejudice experienced by Chinese intellectuals have arose primarily from the attitude of the Chinese government towards intellectuals. The Chinese government undoubtedly needs the services of intellectuals, but at the same time distrusts them by regarding them as vacillating elements and dissenters. According to this view, in order to be of use to the Chinese socialist society, intellectuals must be reformed ideologically. They must rid themselves of all ideas and attitudes incompatible with the dominant Marxian ideology. They have to acquire the correct worldview to be a part of the working class by integrating themselves with workers and peasants, or in general, to be a part of a community of proletarian intellectuals as was discussed in the preceding section. Thereof, no matter whether they are products of bourgeois society or of the new society, Chinese intellectuals must undergo the process of "ideological remolding."

1. Ideological Remolding

Ideological remolding is central to governmental policies attempting to transform the worldview of intellectuals. Those policies are formulated on the basis of an image of the nonrevolutionary character of Chinese intellectuals in pre-revolutionary society. Class background and, for many, foreign training created doubts about the political

reliability of intellectuals because of their receptivity towards bourgeois education. For the Chinese government, the long term goal of this policy has been to replace so-called "bourgeois intellectuals" with "proletarian intellectuals." Yet in the short term, a policy for handling the former is needed. For the Chinese people, it is acceptable if the Chinese government distrusts those intellectuals trained abroad to serve the new society. In contrast with this policy, it is contradictory and questionable for the government to suspect intellectuals trained by new China -- a socialist society. This puzzle emerged in the years of the Cultural Revolution when the Gang of Four over-emphasized and exaggerated this policy.

Two main channels were used by the government, especially by the Gang, to remold the ideology and thoughts of intellectuals: 1) political meetings (studies) to enforce participation in political activities, namely to politicize and philosophize both academic and non-academic activities of the intelligentsia; and 2) physical labor to integrate intellectuals with workers and peasants. As one of the editorials in the Party's newspaper said in 1969: "in concrete work, we must proceed from the actual situation, take practical steps and use effective methods to do painstaking ideological-political work, and actively promote the ideological revolutionization of the intellectuals. We must organize them to creatively study and apply Chairman Mao's works, guide them to actively throw themselves into class struggle, encourage them to fight self and repudiate revisionism conscientiously and remold their bourgeois world outlook" ("How to Look at Intellectuals Correctly" in Beijing Review, February

21, 1969.).

Ideology , as the aggregate of the ideas, beliefs and modes of thinking characteristic of a group, a nation, class, caste, profession or occupation, religious sect, political party, etc. is conditioned and determined by the activities people participate in, the cultural environment people face and, the socio-economic position people occupy. In order to avoid dissent away from Marxist ideology and to continue the enforcement of ideological education, participation in political meetings had been institutionalized during the Cultural Revolution. An amount of time to ensure this activity was officially set aside on Tuesday and Saturday afternoons. Besides this fixed time for political indoctrination, the activities of intellectuals had been politicized and philosophized to meet the needs required by the government. Academic work and research of intellectuals must serve the needs of socialist society, must be in essence of a materialist orientation according to the typology of Marxist philosophy and, no intellectual activity could be separated from its political implications. Let us take research as an example. Some social sciences such as sociology, anthropology and psychology could not be studied and discussed at that time because they were philosophically regarded as idealist. Intellectuals who attempted to develop their interests in such social sciences were politically seen as bourgeois revisionists. Chinese intellectuals, therefore, could not be aloof from politics. There is no neutral position for them between capitalism and socialism, between materialism and idealism. Thus, political studies served as means to reach

the end of establishing the socialist ideology among Chinese intellectuals.

To what extent and to what degree, can Chinese intellectuals convincingly be certified politically and ideologically qualified and sound? The unequivocal answer is that no expert (intellectual) is any good unless he is "Red". Therefore, the question of the ideology of intellectuals for the government is simplistically formulated: ideological qualifications of Chinese intellectuals are "Redness before Expertness," or in other words, socialist-minded before vocationally proficient. Reversibility of this order is not tolerated. "Redness" here refers to the requirement the Chinese government imposes on every individual intellectual to have a political attitude which is compatible with socialist society, to rid themselves of bourgeois individualism and to establish collectivism to serve the Chinese people wholeheartedly ("Redness and Expertness" in The Collection of the Policies of the Communist Party of China Towards Intellectuals. Hong Kong: Contemporary China Research Institute.). "Redness" is the key to judging an intellectual and his political standing. If one gains mastery over a branch of science or technology, but is not actively involved in political activities as defined by "Redness", one's talent is not reliable and trustworthy

In China, political studies are not the only way for intellectuals to remold their ideology. They are strongly encouraged to participate in other levels of Chinese society such as factories, communes and army where intellectuals could have opportunities to integrate themselves with workers and peasants. The government truly believed

that through physical labor with supervision from workers and peasants, intellectuals could be re-educated and reformed. In most of cases, intellectuals, even students, were sent to the countryside to gain practical experience for carrying out Mao's directive: "... they (intellectuals) must, however, be re-educated by the workers, peasants and soldiers under the guidance of the correct line, and thoroughly change their old ideology." This move eventually affected between 20 million and 25 million intellectuals and students. Table IV

Table IV. Estimated Number of Intellectuals and Students Sent to the Countryside Since 1968: By Provincial and Employment Status

Area	Total 1969-1975	1975	Cadres	Employment Status	
				Technician & Non-farm Employment	Political Instructors
China	10,000	--	--	--	--
Heilong- jiang	493	--	--	--	51
Henan	360	--	12	40	--
Hebei	500	51	200	50	40
Hunan	450	--	16	--	--
Hubei	---	--	16	--	--
Mongolia	210	20	3	--	--
Gansu	640	--	6	27	--
Guangdong	560	80	15	60	--
Liaoning	1,000	240	50	--	90
Shandong	110	--	8	--	43
Yunnan	600	--		70	--

Source: Science and Technology in the P.R. China. OECD 1977.

* Numbers in thousands.

indicates the numbers of intellectuals and students who were sent to the countryside at the provincial level from 1969 to 1975, totalling

about 10,000 thousand. Actually, the nationwide movement of sending intellectuals and students to the countryside began in the middle of the 1960s and the year of 1975 was the end of it. Due to the unavailability of statistics, Table IV only partially illustrates those numbers for seven years. Another fact is that Table IV has information only on eleven provinces and is thus quite limited. However, this table is still illustrative in the absence of alternative sources.

As a consequence of this movement and governmental policy, Chinese intellectuals could not carry on their regular professional activities. For instance, at that time, enrollment in universities was much lower than before the Cultural Revolution. One report indicated that only 4,300 students were enrolled at Beijing University as compared to 10,000 before 1966, and 1,135 as compared to 6,000 at Fudan University in Shanghai ("The Long Road to Normalcy" in Far Eastern Economic Review, October 1, 1973.). The decline of enrollment not only affected the educational system, but also weakened and crippled the culture setting as well as the economy of Chinese society. Since that time, this governmental policy and movement now are seen as a failure of high human and social cost. The sacrifices and hardships endured by intellectuals were a tragic consequence of Mao's ideology, also of the Gang's ideology.

2. Autonomy

Autonomy — self-regulation, and self-control are synonyms

for freedom on the part of work groups to regulate their own work behavior (Pavalko, 1971:9). Autonomy usually is expressed in two distinct but related ways for intellectuals. First, intellectuals, as organized collectivities, seek to control matters relating to the activities of their members. The second concern is the autonomy of individual intellectuals: the right of resistance to supervision by someone from outside the profession, and the resistance of unqualified judgments on the quality of his or her professional work from non-professional perspectives. These two aspects of autonomy for intellectuals must somehow be obtained by every individual intellectual in order to fully perform their social roles and to assure their productivity.

For a long time, the Chinese intelligentsia has struggled to achieve such an autonomy or freedom for their professional work both internally and externally, that is to say, through their enthusiasm to create a social environment appropriate to sustain the right and power to determine their own course of professional development.

In ancient China, there was a precious tradition of fostering and sustaining often competing knowledge systems during the Spring and Autumn and the Warring States Period in history (5th-3rd century B.C.), when the transition from slave society to feudal society was reflected ideologically in the emergence of different schools of thought. Each of these schools had their own teachings and doctrines (see section II). There were lively and heated debates among supporters of the different schools and this tradition became well-known as

"the contending of a hundred schools." This tradition provided an advantageous climate for intellectuals.

After the founding of the new China the Chinese government carried forward this tradition of support for the flourishing of science and culture by formulating a policy of "letting a hundred flowers bloom, letting a hundred schools of thought contend." Implementation of this "Two Hundred" (12) policy allowed people to air their views freely and permitted each to hold diverse opinions and views in exploring and studying various scientific and intellectual subjects. In this way, people were able to make their own comparison of the rightness from wrongness of different schools of thought. This policy moreover, strongly impelled intellectuals to realize that if only one kind of opinion is allowed to the exclusion of others, people will become academically retrogressive, stereotyped and rigid. Supposedly, this policy of "freedom of independent thinking, freedom of debate, freedom of creation and criticism, and freedom of to express one's own views and to maintain, to reserve one's own views" (Lu Dingyi, 1956), was guaranteed by the Chinese government.

During the Cultural Revolution, the Gang of Four opposed this supportive policy and Mao himself crudely destroyed it by imposing hierarchical authority on intellectuals and their professional lives. They proclaimed that every thing should be done in compliance with what Mao dictated, and forbade any mention of "letting a hundred schools of thought contend." Thus totalitarianism and a dreary atmosphere prevailed over the Chinese academic world. They dismantled

scientific research institutes, banned numerous books and disintegrated the community of scientific and cultural workers whenever they spoke out with an ideology different from Marxism. If one did speak out, he was deprived of political and citizen rights and was dismissed from the Party (if he was a member). Many were not allowed to perform their professional work, were sent to the countryside or factories, and even were put into jail. A number of brilliant Chinese intellectuals had been coerced until they died, often by suicide.

Most of time, the Chinese government powerfully exercised direct supervision over intellectual work. Therefore, in fact, Chinese intellectuals had no autonomy, they could not self-direct their professional lives. Especially during the Cultural Revolution, most of intellectuals had been assigned work by the government in which most of them could not fully utilize their knowledge and skills. These governmental assignments were made as soon as students graduated from schools, colleges and universities without regard to their knowledge competencies or skills. On the contrary, the organizational needs of the State came first. We do not know exactly how many intellectuals had been assigned unrelated jobs or been away from their own fields, but we have information which reveals that until 1980, 160,000 intellectuals including those people who were mistreated in 1950s have been rehabilitated and reassigned work commensurate with their talents and specific knowledge.

Governmental supervision and control over intellectuals also includes the Party usurping the direction of the research of intellectuals and centrally planning the research areas that intellectuals are

supposed to conduct. The direction of research is determined by the State plan and then through social organizations reaching to the individual level. Let us take the Plan on Science and Technology (1978-1985) as an example. The Eight-year plan makes all-round dispositions for the tasks of research in 27 spheres, including natural resources, agriculture, industry, national defense, transport and communication, oceanography, environmental protection, medicine, finance and trade, culture and education, in addition to the two major departments of basic and technical sciences. Of these, 108 items have been chosen as key projects in the nation-wide endeavor for scientific and technological research. This plan is aiming at modernization of China and thus narrowing the gap between China and the advanced industrial nations laying a solid foundation for catching up with or surpassing advance world levels in all branches in the following 15 years ("Outline National Plan for the Development of Science and Technology, Relevant Policies and Measures" in Beijing Review, No. 14, April, 1978). In order to fulfil this plan, intellectuals have to use their work to meet these needs.

On the whole, Chinese intellectuals need a relaxation of political constraints to zealously pursue their professional work and to fully play the social roles expected of them by Chinese society. Without a certain degree of guaranteed autonomy, the backward conditions of science and technology will not be improved rapidly.

3. Leadership

Modern industrially advanced societies need intellectuals and students who will join their ranks in the future and universities to train them. In short, such societies are dependent on intellectuals and their work has a large scale impact on their development. In China, modernization of society generates similar needs and dependency on intellectuals. In the pre-Cultural Revolution period, Chinese organizations and administration gradually evolved towards a system in which the leadership was held by competent, experienced intellectuals who acquired directorship positions. In favoring intellectuals and giving free rein to the importance of their leading position in society, Chinese governmental organizations usually had one or more deputy directors, at least one of them was a nonprofessional person with political and administrative responsibilities. The directors and deputy directors as non-political personnel and professionals leading their staffs were assigned to their position by two main committees composed of the organization's members. One committee dealt with vocational work or professional work, and the other dealt with administrative affairs. In addition to these bodies of professional leadership, there was a Party committee in each organization to control the activities and work of Chinese intellectuals.

Ironically, this system of leadership favoring intellectuals and structurally differentiating academic, administrative, and political matters was challenged and attacked somewhat during the Cultural Revolution. In line with Mao's ideology: "the working

class is the leading class," intellectuals who held leading positions were criticised as exercising anti-revolutionary authority over the proletarian masses, and in most social organizations, the leadership and power were taken over by the working class — the worker's propaganda teams. The focal points of replacement of power politically with the working class were education, the mass media and cultural affairs. For instance, education and the school system according to Mao's estimation, were the monopoly of the exploiting classes. Conditions improved after the Chinese liberation, but, in the main, education and schooling were still monopolized by bourgeois intellectuals. Some students from these schools had been able, for various reasons, to integrate themselves with the workers, peasants and soldiers and serve them. Others did not. In a state governed by the dictatorship of the proletariat, this was a serious situation — the bourgeoisie contends with the proletariat for leadership ("The Working Class Must Exercising Leadership in Everything" in Beijing Review, No. 35, August 30, 1968.). Therefore, the worker's propaganda teams entered the field of education or other social organizations in order to enforce the integration of intellectuals with the working class.

The new philosophy and the system of the working class leadership practised in the Cultural Revolution devalued intellectuals through its strong anti-intellectualism. Consequently, a large number of Chinese organizations have been led by nonprofessional, untrained Party leaders and for the time being, the general situation has been that the layman leads professionals. As a result, Intellectuals

have tremendous difficulties in gaining access to leadership and participation in decision-making process. Hence, re-entrance to leading positions for Chinese intellectuals seems to be a problem even though the current government has tried to promote intellectuals and bring them back to that position. Several factors account for these difficulties, first of all, the old Party cadres who do not have a good education are biased against intellectuals. Because this bias questions the political reliability of intellectuals, they face extreme obstacles in becoming Party members. Without Party member status, intellectuals are not allowed to occupy some crucial leadership positions.

In summary, the struggle against intellectuals increased in intensity and shrillness until the Cultural Revolution had become a movement without parallel in scale, in sweep, in strength, or in momentum. The ideology, freedom and socio-political positions of intellectuals in Chinese society have been challenged and despised. As a result, their creativity, productivity and contributions to scientific and technological innovation have been limited.

4. Discouraging conditions

We have discussed from a macro-view the major problems that Chinese intellectuals have faced within the social structure of Chinese society. In this section, I will focus on the quality of life of Chinese intellectuals. Ignorance, discrimination and prejudice towards intellectuals fostered by the Chinese government have penetrated

into every corner of Chinese society and have given rise to poor living conditions and an unfair incentive system.

Poor living conditions, lower income, heavy chores and responsibilities in work are well-known problems for intellectuals in China, especially middle-age intellectuals who total 5.7 million throughout the country. Middle-aged intellectuals are defined as those who have received a secondary technical school or college education, and are now between 36 and 55 in age ("Caring For Middle-aged Intellectuals" in Beijing Review, No. 33, 1982:5). In contemporary China, these intellectuals are the backbones of scientific research and teaching. A survey of universities in Southwest China has shown that 80 percent of those actually teaching are in this category. But owing to the unfavorable policies of the government in the past 15 years, particularly during the Cultural Revolution, middle-aged intellectuals have not fared well. Their average monthly income has been only 50-70 chinese yuan (\$ 30) which is much lower than they could earn in the 1950s.(13) At that time, material incentives had been used by the government, and their contributions were monetarily rewarded. Incomes of intellectuals during the 50s were considerably higher than those of nonskilled workers as is clear from Table V. College lecturers at grade 12 (14) received 179.5 yuans monthly, about eight times the 23.5 yuans earned monthly by nonskilled labors at grade 30. This discrepancy received considerable attention from the government and, as we already pointed out, one of the chief aims of the Cultural Revolution was to eliminate this gap between incomes or wages of manual labors and intellectuals.

Table V. Grades and Salaries of Public Employees in China (50s)

Grade	Monthly salary (in yuan)	Position		
		Industry	Academic	Civil
		Management	Engineers Administration	Faculty Service
1				Central Gov. Leaders
2				Chairman CCP
3				Staff Office
4				Heads, Governors of Prov. Ministers
5				
6			Univ. Pre.	
7				Bureau & Dep. Heads, Ambassadors
8			Univ. VicePres.	Office Chiefs
9				
10		Managers Grade 1		Asst. Profs.
11		Grade 2		Profes.
12	179.5	Grade 3		Lectres.
13	159.5			
14	141.5	Dept. Mgrs. -- 4		
15	127.5	Office Heads.		
16	113.5	Section Heads. 5		Asst. Section Chfs. Lectres.
17	101.5	Dept. Sec. Heads.		
18	89.5		Grade 6	
19	80.0		Technics.	
20	72.0	Shop Foreman		
21	63.5		Professionals	
			Nonprofessionals	
22	57.0			Clerical
23	50.5			
24	44.5			
25	38.5			
26	33.5			
27	30.5			
28	28.5			
29	26.5			
30	23.5			
31				
32				

Source: Trong R. Chai, Ph. D., Professionals in China: Conflict and Accommodation. Japan: The New Citizens Publishing Company, 1975.

The Cultural Revolution had criticized the 1950s incentive system as a purely material reward and bourgeois system. For the Party, money is a thing which only people of exploiting classes go after — only those blinded by the love of gain who kowtow to and worship profit. Therefore, this system ceased and a new incentive system was adopted. In this system, intellectuals have been promoted without being paid monetarily. Their contributions are recognized only by increasing their grade level and by bestowing political honor. In so doing, in contemporary China, there is a serious inconsistency between grade and actual wages as is shown in Table VI. Intellectuals in universities have been honored just in titles and their actual income or wage is one to four grades lower than it should be in comparison with Table V.

In Table VI, the majority of intellectuals at the Shanghai Institute of Communications have problems of inconsistency between grade and their actual payment. About 962 out of 1046 lecturers in that institute have been paid at a level of 1-4 grades lower, and the percentage of this under-pay is extremely high (92%). Both full professors and associate professors are also under paid (90% and 86%).

With lower incomes, most intellectuals in research and development units are not eligible for bonus payments on the scale received by those working in industry and in agriculture. Moreover, besides these factors, middle-aged intellectuals have parents as well as children to support. Hence their actual income is lower than workers and peasants, even lower than the national standard in urban area.

Table VI. Inconsistency of Rank With Grade of Payment 1981
(Shanghai Institute of Communications)

Rank	Number of Intellectu- als With- in Different Ranks	Number of Intellec- tulas Who Fall into the Catego- ry of In- consistency	Percentage of Incon- sistency Among Dif- ferent Ranks	Number of Intellectuals Who Are Underpaid Inconsistently Among Different Ranks	1 Grade Low	2Grade Low	3Grade Low	4Grade Low
Full Professor	60	54	90%	--	--	--	--	--
Associate Professor	230	198	86%	46	62	42	48	
Lecturer	1046	962	92%	209	548	204	--	--

Source: Zong Han, " On the Question of Intellectuals' Remuneration " in Guangming Ribao (Enlightenment Daily), July 15, 1982.

Chinese intellectuals are generally very poor men. They are even unable to purchase books, to subscribe to newspapers, periodicals etc. and suffer many privations(the standard of income and expenditures of urban families for China is provided in Appendix I of the paper. See Figure I.1.). Under such pressures (worrying about living and supporting a family), it is not surprising that general health in their group is not good; some statistics show a high mortality rate among them, more so for elderly intellectuals (Fei Xiaotong, 1983).

Meanwhile, many of these intellectuals are living in overcrowded quarters. In some families, three generations are packed into one small room. For instance, a survey of housing conditions of intellectuals in Beijing conducted by the Chinese Academy of Sciences showed that 105 associate researchers (professors) have only one room to squeeze in with their families; there are 2,788 ordinary research workers (15) who have only single room; about 3,317 of them do not even own a room. In this case, they have to share housing together. In sum, this survey reveals that for Chinese intellectuals as a whole housing conditions are very poor. They are so overcrowded that privacy of any sort is impossible in terms of their personal lives and their work. The average living space for Chinese intellectuals is 3.7 square meters (People's Daily, November 19, 1983). It is difficult to imagine how under such conditions they can carry on their research and work after working hours.

For the majority of Chinese intellectuals, their household chores are very heavy. Table VII, based upon a survey in Zhejiang Province

of China, demonstrates the time typically spent by the middle-aged intellectuals. According to this report, middle-aged intellectuals have to work 4.8% more hours than other non-intellectuals do per day. Among them, teachers in the universities, high schools and elementary schools have 11.1% more working hours than manual workers. Female teachers even work 16.5 hours per day.

Table VII. Time Expenditures of the Middle-Aged Intellectuals in China (Zhejiang Province) 1983.

Category	Time	Compared to Nonintellectuals	Teachers Compared to Nonintellectuals
Work & Transportation	9 1/3 hrs.	4.8% over other workers	15.4% over other workers
Chores or Household	General 3 hrs; female 3 1/2 hrs.	---	---
Cooking	1 hr. & 4 mins.	---	---
Laundry	34 mins.	---	---
Shopping	26 mins.	---	---
Children Care	11 mins.	---	---
Others	38 mins.	---	---
Sparetime	General 1 hr.	20% over other workers	---
Study	male, 1 hr. & 11mins	---	---
Rest & Entertainment	1 1/2 hrs.	29.1% less than workers	---

Source: Table is based on a " Survey Report On Time Spending of the Middle-Aged Intellectuals " in Guangming Ribao (Enlightenment Daily), November 17, 1983.

An examination of Table VII, reveals that when workers have finished their regular work and rest, intellectuals have to use their spare time to do research or study. This extra work time is estimated to be about one hour, 20% more than workers do. Therefore, intellectuals can only spend half an hour for entertainment which

is 39% less than workers have. The findings of this report suggest that China's intellectuals can not bring their initiative into full play. Social functions or roles can not be adequately performed because of obstruction and interference, anxiety and worry about their families well-being. These conditions restrict the productivity and creativity of China's intellectuals.

Research and development (R&D) expenditures planned by the government should be considered simultaneously with living conditions. I have attempted to make use of a breakdown of the R&D budget for the year of 1973 by major categories in Table VIII. The estimates used here can be challenged on many counts, but may still be useful in the absence of official data from China (The estimates made here do not include the humanistic and social sciences. The reason is twofold: 1) The humanities receive very limited funds compared with the other major categories; 2) Most social science research is carried out as investigations under the direct control of Party organs, which sets social sciences aside from all other R&D activities.). Table VIII shows that basic research receives 4% of the total R&D budget and, this figure is possibly on the high side. Across sectors, there is a total R&D budget of 2.48 billion yuan in 1973, which approximately equals \$ 1.25 billion U.S.. This is roughly 0.6% of the gross national product of China in 1973, which would indicate that the estimated budget is a close approximation, and supports the general assumption that the relative level of R&D expenditure in China is generally on the high side.

Table VIII. Breakdown of R&D Expenditures by Major Categories
(1973 Estimate)

	Manpower				Expenditure			
	Thousands		Percentage		Billion ¥		Percentage	
	I*	II*	I	II	I	II	I	II
Basic Research	21.3	21.3	2	4	.883	.083	3	4
Agriculture & Natural Resources Excluding Energy	293	102	45	17	.601	.311	24	14
Medicine & Public Health	102	102	12	17	.311	.311	13	14
Defese	100	100	11	17	.517	.517	21	24
Manufacturing, energy, & Transportation	261	261	30	45	.970	.970	39	44
Total	879	586	100	100	2.48	2.19	100	100

Source: Technology and Science in the P.R. China. Jon Sigurdson, 1981.

* I, mass scientific network in agriculture included.

** II, mass scientific network in agriculture excluded.

¥: Chinese currency (unit: yuan).

But as the author Jon Sigurdson in his book Technology and Science in the People's Republic of China pointed out: "... with the evidence indicating that this sector R&D of the society was badly neglected or interfered with for a number of years, it appears that earlier estimated R&D figures are higher than what they actually were." I would agree with this argument that it is true that in 1973 during the Cultural Revolution, many R&D projects were not fulfilled and this statement has been acknowledged by the Government (Fan Yi's report in 1977).

Due to unfavorable governmental policies towards intellectuals and the anti-intellectual trend during the Cultural Revolution compared to the advanced industrial countries in science and technology, China is now lagging 15 to 20 years behind in many branches and still more in some others. Table I.1. in Appendix II illustrates the scientific and technological gap between China and the developed

countries. The data truly mirror the disastrous effect of anti-intellectualism on science and technology and on the national economy and its modernization. Backwardness continues.

Footnotes

(12) "Two Hundred" policy has been heavily used by the Chinese publications, which is an abbreviated expression of the famous policy of "Letting a hundred flowers bloom, letting a hundred schools of thought contend."

(13) According to the Chinese official English publication — China Daily (January 8, 1985), one American dollar roughly equals 2.80 Chinese yuan (\$1=2.80 yuan).

(14) In China, salaries of public employees are ranked (1950) from Grade 1 to 32 according to an individual's education, training, actual work experience and importantly, how long one has participated in the Chinese revolution or worked in the socialist system. For example, a person who joined the Red Army in 1930s and after the liberation will obtain more salary than a person who joined the revolution in 1940s. Managers' grade in Table V and their payment more or less both depend on the factors I mentioned above, and moreover, are co-related with the size of organizations wherein the managers work.

(15) Ordinary research workers refer to those have had college level of education and work at a research institute without the title of researcher or associate researcher, but are categorized as intellectuals.

VI. Changes in Policies and Future Tendencies

Since the end of the catastrophe of the Cultural Revolution for Chinese intellectuals, government policies towards intellectuals have undergone great changes. Measures are being taken by the Party and government to correct some past errors in the treatment of intellectuals and some frame-ups and false charges imposed on intellectuals have been redressed. The new policies can be seen in Fang Yi's (16) report at the National Science Conference on March 18, 1978. These policies and their implementation include:

- 1) Promoting competent Party and non-Party intellectuals to leading positions. It is imperative that Party leaders are selected and elected from and among people who have a good understanding of the Party's policies and are eager to promote science. Experts or near-experts must be appointed to leading professional positions. Recently, the Chinese government further requires people in leading positions to have at least a college level of education or its equivalent. Intellectualization of professional leaders is now an important criterion for scientific agencies, research institutes and social organizations. Many scientists, engineers and professors have been promoted to leading posts in factories and universities including colleges.

- 2) Upholding the policy of "letting a hundred schools of thought contend." Since the end of the Cultural Revolution, the government reinstated and encouraged free contention among different schools

of thought, especially within science. With regard to academic problems, people should have both freedom for criticism and freedom for refuting criticism. The government and leaders should foster the attitude of upholding truth and correcting mistakes, strictly prohibiting the practice of affixing political labels indiscriminately. Thus, intellectuals who were wrongly designated as bourgeois intellectuals have been rehabilitated and reassigned work commensurate with their knowledge and professional identity.

3) With the end of the situation in which laymen led professionals, the government has reassigned work to intellectuals whose previous work during the Cultural Revolution was not related to their own field. In the past three years (1978-1980), 160,000 such intellectuals were given new jobs related to their skills and knowledge.

4) Restoring and perfecting the system of conferring titles on intellectuals in universities, colleges and in research institutes. On February 12, 1980, the standing committee of the National People's Congress endorsed regulations for awarding academic degrees at the doctoral, masters and bachelors level. Between 1981 and 1983, altogether 29 people were awarded doctor's degrees, and 18,143 people received master's degrees (Beijing Review, No. 20, May 14, 1984).

5) Honoring and citing intellectuals who have made outstanding contributions, as is done in the case of workers and peasants. In April 1979, a special committee for the examination of new inventions was set up by the State Commission for Science and Technology. Its aim is to encourage initiative and creativity among Chinese

intellectuals. Monetary prizes and medals are awarded to individual intellectuals and units for major original inventions which meet world standards.

6) Increasing international academic exchanges and learning advanced science and technology from other countries. The government has strengthened scientific and technological co-operation and academic exchanges with other countries. It also encourages keeping abreast of the results, trends, policies and measures of scientific and technological research as well experience in organization management in other countries. In the past six years (1978-1984), China has spent 290 million yan (\$116 million) to sent 26,000 students to study in more than 60 countries. In addition, 7,000 students have gone abroad at their own expense. The number sent abroad will be increased to 4,000 in 1985 from the present 3,000, according to State Councilor Zhang Jinfu's announcement("China Will Send More Students Overseas" in China Daily, December 30, 1984.).

7) Increasing the quality of life of intellectuals. Owing to the fact that China's economy was seriously sabotaged before, many urgent problems cry out for solution and they can not be solved at once. However, poor living working conditions have received the attention of the government and the public. In 1981, in an attempt to solve these problems, nearly 12 million primary and middle school teachers received a salary raise. The government also gives priority to intellectuals for improving their living conditions, e.g. in housing.

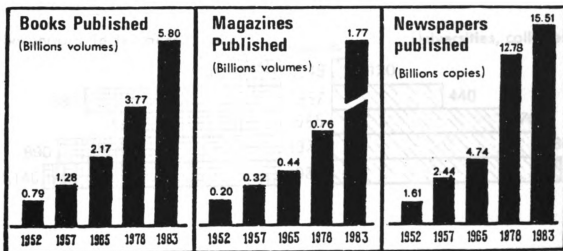
8) Reducing the amount of time intellectuals spend in political

meetings. At least five-sixths of weekly work hours had to be "guaranteed to intellectuals to engage in their professional work." The emphasis on the participation in political activities has been shifted to the strong involvement in scientific research and professional work, and along with this shift, the evaluation criterion no longer examines the political reliability but the capability of intellectuals to solve problems in research, teaching and applied fields.

In summary, compared with the Cultural Revolution, governmental policies towards intellectuals for the time being are more favorable. The government and the Chinese people have gradually realized that without the efforts, co-operation and service of intellectuals China's modernization could not be accomplished. The fulfillment of this task depends very much on the mobilization of intellectuals and a supportive atmosphere which gives esteem to the scientific and knowledge contributions of intellectuals and themselves. Such positive policies will secure a co-operation of intellectuals with the government. This assumption can be seen by examining the following indicators:

Within very short period of time, after the Cultural Revolution, intellectuals in China have made very significant achievements. Figure III clearly shows that in 1983, a total of 15.51 billion of national and provincial newspapers, 1.77 billion magazines of all kinds and 5.8 billion books and pictures were published. In 1983, 35,700 books of all kinds were published, an increase of 1.4 times as compared to 1978; 3,415 kinds of magazines — 2.7 times over 1978; 340 kinds of newspapers — 5 times over 1978.

Figure III. Publications in the P.R. China

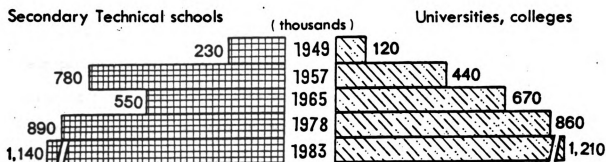


Source: Data were issued on April 29, by the State Statistical Bureau of China. Beijing Review. Vol. 27, No. 35, August 27, 1984.

Figure IV provides school enrollment figures and the number graduates from colleges and universities. From 1978 until 1983, both school enrollment and higher education graduates have reached their highest point since 1949.

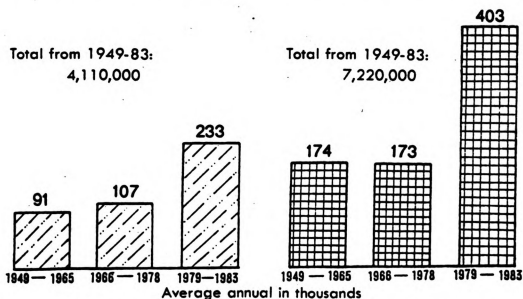
All these factors have reflected the changes in policies of favoring intellectuals which are positive and encouraging for the programs aimed at China's modernization. This tendency will continue with the support of intellectuals. The process of implementing these policies is still ongoing. For the government per se, this tendency can be seen in the governmental R&D expenditures planned for 1981-1985, the sixth Five-Year Plan which is provided in Appendix II, Table I.2. of this study.

Figure IV. School Enrollment and Graduates of Higher Education in the People's Republic of China



University and college graduates

Graduates of secondary technical schools



Source: Figure is adopted from Beijing Review, Vol. 27, No. 35, August 27, 1984.

Footnotes

(16) Fang Yi, member of the Political Bureau of the Central Committee of the Chinese Communist Party of China, Vice-Premier of the State Council and concurrently Minister in charge of the State Scientific and Technological Commission.

VII. Concluding Remarks

This descriptive study and historical comparison has shown that the performance of social roles by Chinese intellectuals, their productivity, creativity and the process of professionalization including their quality of life have been determined and affected by several external factors of Chinese society, namely, social, political and economic factors which have been specified as the Chinese government policies and attitudes towards intellectuals. The difficulties confronting Chinese society in mobilizing intellectuals is rooted not only in conditions present during the Cultural Revolution, but are basically derived from a structural problem existing in China since 1949.

First of all, since the founding of the People's Republic of China, there has been an inadequate institutionalization of intellectuals and of their productive activities, and relatedly an inadequate system of incentives for giving intellectuals prestige.

Secondly, based on the biased estimation of the class characteristics of Chinese intellectuals, government policies towards intellectuals have been always discriminatory and prejudicial. Gradually, an ideology and a social atmosphere of anti-intellectualism have taken form over several decades.

Thirdly, under the large-scale bureaucratic state machine, Chinese intellectuals are so hemmed in by political restrictions and so burdened with political requirements that there is little

room for initiative to creatively pursue their professional career.

As a direct result of this system, for the past three decades, Chinese intellectuals have suffered from being distrusted, humiliated and persecuted by the Party and government through the so-called process of "thought reform." The poor quality of life, discouragement of professional development and depreciation of scientific knowledge have led to lower productivity and poor creativity by Chinese intellectuals arresting scientific and technological development as well as economic development in Chinese society.

There have been large scale changes in policies towards intellectuals since the ending of the Cultural Revolution. The practical needs requiring the co-operation of intellectuals for the purpose of modernizing Chinese society have generated general improvements in the quality of professional life and the encouragement of professional development. But democracy and autonomy or freedom for intellectual activities still need further integration into the Chinese system to allow intellectuals to fully play their social roles and to utilize their knowledge and talents.

There are several issues raised by this thesis which serve as suggestions for future research. This study has mostly surveyed Chinese intellectuals in the fields of science and technology in conjunction with the government emphasis on modernizing Chinese society by adopting advanced science and technology from industrialized countries. This emphasis in the long run may give rise to a favoring of Chinese intellectuals in the natural sciences, engineering,

and related technological fields over intellectuals in the humanities and the social sciences. Future studies on the Chinese intelligentsia should investigate the impact of the process of Chinese modernization on different areas of science and other intellectual areas, that is to say, will natural science, technology, engineering, social science, and humanities be paid equal attention by Chinese society in its development plans? This question also is directly related to what models of scientific development will be followed in China — a Western model in which the orientation and development of sciences are freely determined and accelerated by intellectuals with a certain degree of government support, a purely Chinese model that the direction and development of sciences are centrally planned and fully controlled by government and the Party, or some synthesis of both Chinese and Western models?

This study also reveals that recently, foreign trained intellectuals are favored by society within the scientific community of China. Will this structural change in the Chinese intellectual communities very soon lead to a conflict in terms of the way of thinking and social status between intellectuals who are trained abroad and intellectuals who are educated in China? Further differences and conflict in the intellectual community is likely to emerge between the old nonprofessional cadres and Chinese intellectuals. These cadres were in positions of power and leadership over the working and peasant classes. That power and leadership is now being challenged by the Chinese intellectuals who are beginning to take over decision-making positions in a whole range of Chinese bureaucracies. A clash

appears inevitable between these two contending parties. The critical question here is what consequences these developments will have on both Chinese intellectuals and the intellectual community. Furthermore, from this study, we are aware that Chinese intellectuals are seen as a critical manpower factor in catching up with advanced industrial societies. As a result, Chinese intellectuals are beginning to freely and actively to develop their intellectual interests, their professional identities and their creativity as state control is loosened. Does this mean that a new type of social structure brought about by Chinese modernization is emerging and within it will different "schools of thought" be encouraged?

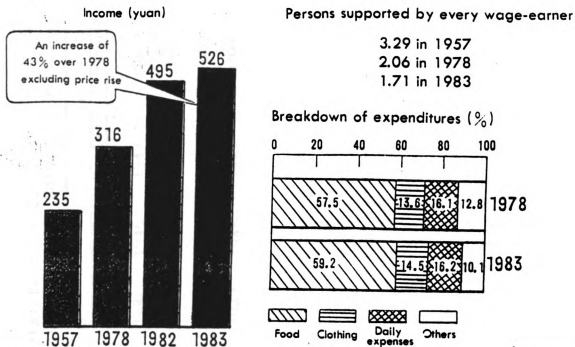
Finally, in the near future, will Chinese intellectuals still be a social stratum as defined now or a "new class" which will be shaped by the process of modernization and by the more important social roles they assume in orienting and guiding the development of Chinese society rather than being passive audiences and targets of state policies. The roles assumed by Chinese intellectuals and the manner in which they are performed will shape and determine the future of the Chinese intellectual community.

These new and exciting areas of future research chart an agenda for sociologists from around the world, especially Chinese sociologists. Ideally, this research agenda should be studied directly in China and in the near future from methodological point of view, it may be possible to use field and survey methods to supplement studies which have until now depended upon spotty documentary and historical data sources.

Appendix I. Figure I. 1.
 (Selected Chinese Statistics)

Income and Expenditures of Urban Families

(Average Annual Per Capita)



Source: Figure was issued on April 29, 1984, by the State Statistical Bureau. Beijing Review. Vol. 27, No. 35. August 27, 1984.

Appendix II. Table I. 1.
 Scientific and Technological Gap Between China and Developed Countries

Programme	Year					
	USA	USSR	Britain	France	Japan	China
Nuclear						
First reactor	1942	1946	1947	1948		1956
First A-bomb	1945	1949	1952	1960		1964
First H-bomb	1952	1953	1957	1968		1967
Space						
First satellite	1958	1957		1965	1970	1970
Aeronautics						
First jetplane	1942	1945	1941	1946		1958
First Mach 2 jet	1957	1957	1958	1959		1965
First 8000 kg engine	1958	1957	1957	1966		1970
Computer						
First prototype computer	1946	1953	1949		1957	1958
First commercial use	1951	1958	1952		1959	1966
First transistor	1952	1956	1953		1954	1960
First integrated circuits	1958	1968	1957		1960	1969

Source: Jon Sigurdson, Technology and Science in the People's Republic of China. Pergamon Press 1980.

Appendix II. Table I. 2.
1981 - 1985 State Expenditure (Planned) (In Billion Yuan)

Category	Amount	Average a year	Percent of total State expenditures	Comparing with the 5th Five-Year Plan (1975- 1980)
Education, science, cultural and public health	96.7 yuan	19.3 yuan	15.9%	4.9% increase over the 11%
Funds in support of agriculture	38.7 yuan	7.7 yuan	6.3%	Maintaining the same percentage
National defense	88.3 yuan	17.7 yuan	14.5%	2% decrease against the 16.5%
For administrative	40.8 yuan	8.2 yuan	6.7%	1.8% increase over the 4.9%
Others ¹	345.3 yuan		56.6%	

Source: Chinese Economic Studies. Fall 1983/Vol. XVII, No. 1.

1. Others include capital construction and foreign trade etc., totalling 345.3
yuan (in billion).

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