(4)

UNCLASSIFIED/LIMITED

DEFENSE TECHNICAL INFORMATION CENTER

UNCLASSIFIED/LIMITED

DEFENSE INFORMATION SYSTEMS AGENCY
DEFENSE TECHNICAL INFORMATION CENTER
8725 JOHN J. KINGMAN ROAD, SUITE 0944
FORT BELVOIR, VIRGINIA 22060-6218

Policy on the Redistribution of DTIC-Supplied Information

As a condition for obtaining DTIC services, all information received from DTIC that is not clearly marked for public release will be used only to bid or perform work under a U.S. Government contract or grant or for purposes specifically authorized by the U.S. Government agency that is sponsoring access. Further, the information will not be published for profit or in any manner offered for sale.

Non-compliance may result in termination of access and a requirement to return all information obtained from DTIC.

NOTICE

We are pleased to supply this document in response to your request.

The acquisition of technical reports, notes, memorandums, etc. is an active, ongoing program at the **Defense Technical Information Center (DTIC)** that depends, in part, on the efforts and interest of users and contributors.

Therefore, if you know of the existence of any significant reports, etc., that are not in the **DTIC** collection, we would appreciate receiving copies or information related to their sources and availability.

The appropriate regulations are Department of Defense Directive 5200.12, DoD Scientific and Technical Information Program, Department of Defense Directive 5230.24, Distribution Statements on Technical Documents; National Information Standards Organization (NISO) Standard Z39.18-1995, Scientific and Technical Reports - Elements, Organization and Design, Department of Defense 5200.1-R, Information Security Program Regulation.

Our **Acquisitions Branch, DTIC-OCA** will assist in resolving any questions you may have concerning documents to be submitted. Telephone numbers for the office are **(703)767-8040** or **DSN427-8040**. The **Reference and Retrieval Service Branch, DTIC-BRR** will assist in document identification, ordering and related questions. Telephone numbers for the office are **(703)767-8274** or **DSN424-8274**.

DO NOT RETURN THIS DOCUMENT TO DTIC

EACH ACTIVITY IS RESPONSIBLE FOR DESTRUCTION OF THIS DOCUMENT ACCORDING TO APPLICABLE REGULATIONS.

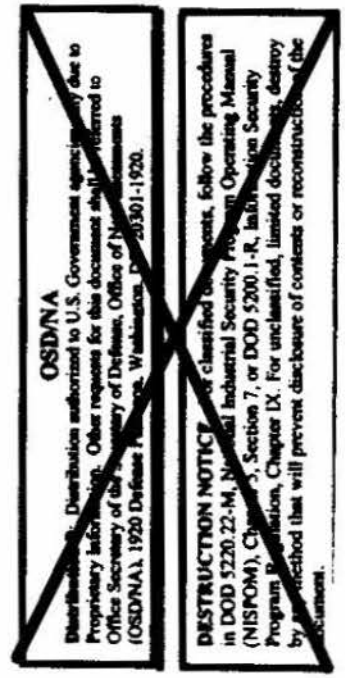
INSTITUTIONAL, ECONOMIC, AND ORGANIZATIONAL BASIS OF

MILITARY CAPABILITY

Proceedings of the Conference Series
November 1997 - March 1998

Edited by
ANTHONY LANYI

The Center for Institutional Reform and the Informal Sector
2105 Morrill Hall, University of Maryland College Park
College Park, Maryland 20742



Institutional, Economic, and Organizational Basis of Military Capability

*A program sponsored by the Office of Net Assessment, United States Department of Defense**

Edited by
Anthony Lanyi

with an introduction contributed by
Frank Brechling, Professor Emeritus of Economics,
University of Maryland at College Park

***The views, opinions, and/or findings contained in this publication are those of the authors and should not be construed as an official Department of Defense position, policy, or decision.**

Published in 1999 by the IRIS Center
The Center for Institutional Reform and the Informal Sector
2105 Morrill Hall University of Maryland at College Park
College Park, Maryland 20742
Tel 301-405-3110 Fax 301-405-3020 E-Mail info@iris.econ.umd.edu

DEDICATION

Throughout the preparation for and conduct of the conferences that resulted in the papers and discussions presented in this volume, Professor Mancur Olson, the Principal Investigator and Chair of IRIS, was the major driving force in terms of both ideas and organization. Since he died unexpectedly only weeks before the third conference, he could not witness the final fruits of his efforts. His youthful enthusiasm, intellectual energy, deep insights, ability to explain difficult material in simple terms, and last but not least, his irrepressible sense of humor and ability to laugh at himself, will be missed by all who knew him well, and who worked with him, as well as by his wide range of less intimate friends and acquaintances.

Table of Contents

Foreword

Under the inspirational and energetic leadership of Professor Mancur Olson, the Center for Institutional Reform and the Informal Sector (IRIS) has been engaged since the early 1990s in analyzing the relationships between political, economic, market, and legal institutions and the performance of economies. IRIS has applied its findings and gained practical experience by working in many transition economies of the former Soviet empire as well as in developing countries.

In a series of discussions in the spring of 1996 in which Mr. Andrew Marshall of the Office of Net Assessment, Department of Defense, Professor Olson and others participated, it was decided to explore in detail the possible relationships between institutional, organizational, and economic factors and military capability. Mr. Marshall was especially interested in focusing attention on the Chinese military capability, in particular, on the Chinese capability to pose a serious military threat to the United States over the next 20 years or so. Consequently, an exploratory one-day conference on these subjects was sponsored by the Office of Net Assessment, United States Department of Defense (DOD) and organized by IRIS in September of 1996.

The results of the exploratory conference were sufficiently promising that IRIS prepared a proposal for a series of three conferences, which was accepted by the Office of Net Assessment. The program for this conference series, held between November 1997 and March 1998, was as follows:

The Economic and Historical Perspective
Organizational Capacity and Military Development
Technology and Military Capability

The contributions and discussions in these conferences show their truly interdisciplinary character, as does the list of participants. All the participants were drawn from the major social sciences: economics, history, military science, political science, and sociology.

We are grateful to many professional colleagues who have contributed to the three conferences. Professor Olson's role has already been referred to in the dedication. Special mention should be made of Professor Thomas Schelling and Admiral Stansfield Turner, both of whom are on the faculty of the University of Maryland. Both have given invaluable assistance in terms of professional advice and time as discussion leaders.

Particular thanks are due to Mr. Andrew Marshall. He initiated the idea of these conferences and his encouragement and support throughout the process are acknowledged gratefully

SECTION ONE

INTRODUCTION TO THE PROCEEDINGS

Chapter 1
Summary of the Conferences

Frank Brechling

Initial Motivation for the Conference Series

All fields of study tend to be somewhat self-enclosed, a tendency strengthened by the growing specialization of scholarship. This has perhaps tended to be particularly true of the study of military affairs, dominated traditionally by military personnel, and historians and political scientists. Counter to this trend is the drive by some social scientists to reach outside the boundaries of their respective specialized fields; it was an especially thoughtful student of military affairs, Andrew Marshall, who saw the need to explore the roots of military capability. The basic question was this: Can one explain the growth of military capability within a country in terms of the country's economy, society, polity and history? If one looks at countries in the world today, and tries to look along their future social, economic and political trajectories, can one then also predict their future military capabilities? It was the purpose of the three conferences organized by IRIS to address this fundamental question.

The remainder of this chapter is organized as follows. First, the major issues of the conferences are discussed briefly. Following is a summary of the papers and proceedings of the three conferences. Finally, some ideas and suggestions for further investigations which emerged at the conferences are presented.

The Issues

The primary function of the armed forces of most countries is to act in support of a country's policies in its relations with other nations. This may take the form of defensive or aggressive stances (saber rattling) or actual combat. It is a country's ability to perform this primary military function that is referred to, in this volume, as its *military capability*. In the special United States–Chinese context, this term is here used to refer to China's capability to engage in serious aggressive behavior vis-à-vis the United States mainland or to inhibit significantly, by military actions or credible threats, United States activities abroad, especially in the Far East.[1]

In addition to the above primary function, military establishments have a range of functions that vary in their importance from country to country, and that may, in particular circumstances, affect a government's definition of, and goals with respect to, military capability.

- There are internal security and police functions, which provide social and political stability.[2]
- At times the armed forces also act as emergency rescue services in the cases of floods, earthquakes, and similar disasters.

---

[1] The definition of military capability thus excludes questions of why one country or another might wish to engage in or abstain from military threats or actions in particular circumstances. The buildup of military capability does, however, imply a willingness to use it in some circumstances.

[2] The internal security function seems to have been very important in the Chinese People's Liberation Army (PLA). Recently, however, about one million troops were shifted from the PLA to the People's Armed Police (PAP). See the contribution by Shambaugh to the third conference in this volume.

- In recent decades the international peacekeeping functions of the military, usually under the auspices of the United Nations or NATO, have become more frequent and important.
- In some cases, the military engages in significant business and commercial activities, which in most countries are performed by the civilian private or public sectors.[3]
- At times, the military also performs the function of establishing and maintaining dictatorial forms of government, (which often serves the purpose of redistributing income in favor of the dictator's clan or the entire military establishment itself).
- Even in democracies, "military–industrial complexes" often succeed, as interest groups, in establishing and enhancing their claim on resources for distributional purposes under the cover of "national defense."
- There are "parade" functions, which provide social and political cohesion, enhance national pride, and attract foreign tourists.

In conventional analyses, the military capability of a country, as defined above, is usually measured in terms of such things as the currently available amount of military hardware, size of the military establishment, and the possession of nuclear weapons. Such measures of military capability have at least two shortcomings:

- They tend to neglect important modern technical and human capital aspects of military capability. Training and motivation of military personnel, the internal military organization, advanced communications systems, and modern logistical and other systems methods all enhance military capability. But it is hard to quantify their effectiveness, and hence their importance may be understated.

[3]In the United States the Army Corps of Engineers engages in such nonmilitary activities. For the business activities of the PLA, see George Quester's contribution to the second conference.

- Second, they tend to measure military capability only in the relatively *short run*. When a time horizon of, say, twenty years is adopted, additional *long run* considerations may become highly relevant. These considerations include the economic, political, and educational infrastructure that allows or facilitates the development or adoption (from other countries) of state-of-the-art military capabilities.

Let us elaborate some of these points.

Motivation, Training and Organization: There is an abundance of historical examples of highly motivated, well-trained and organized military forces defeating enemies that had superiority in both numbers and equipment. The question is: How is such military superiority created, developed and maintained? The following factors may be relevant in this respect:

- Some nations, military classes, and families have historical roots in military traditions that may influence the current motivation of officers and troops. Such traditions may, however, also inhibit innovation in military affairs.
- Deeply held ideological or religious beliefs will influence individual motivation in war. This is why many military establishments spend large resources on indoctrinating their troops. Further, a defensive war is likely to instill more motivation than an aggressive one. This is a reason why most governments represent their aggressive military actions as defensive ones.
- The motivation of military personnel is also likely to be influenced by whether they volunteer or are drafted for military service. The presumption is that, *other things being equal*, a volunteer force is more motivated than a conscripted one. This higher degree of motivation must to some extent be seen as a tradeoff against the lower level of education that a volunteer army may have in comparison to a conscripted one.

- The organization of the military, especially of the command structure, is also regarded as an important determinant of military capability. The role of the noncommissioned officer appears to be of special significance. The aim is to encourage individual initiatives and actions by low-level ranks in such a way that they enhance and do not reduce the effectiveness of the group as a whole.
- Military training, especially in peacetime, is also regarded as an important determinant of military capability. This includes the constant testing and maintenance of military equipment.

Some Relevant Economic Issues: Economic factors are especially important for the long-run buildup and maintenance of a significant military capability, because the latter requires substantial economic resources, including human capital. In all societies, however, there are many other claims on economic resources, mainly by private consumption, private capital accumulation and social capital accumulation. The larger a country's total economic capacity, the more resources can be devoted to each of these competing claims, in particular, to the military claim, without intolerable political strains developing (exemplified by the collapse of the Soviet Union). Accordingly, the level of economic resources is likely to be an important determinant of military expenditure and, hence, of long-run military capability.

As a rule, a country's economic capacity is measured by some variant of its Gross National (or Domestic) Product (GNP/GDP), which is an estimate of its aggregate production of goods and services during a time period (quarter or year). An important relevant theoretical issue is whether *per capita* or *total GNP* is the appropriate economic determinant of potential military capability. Does a small, "rich" country (e.g., Switzerland) have an economic base for a larger military capability than a large, "poor" country (e.g., India)? This is relevant to the issues discussed in this volume because China's total economy is developing very rapidly, yet it is likely to remain a relatively poor country (in terms of *per capita GNP*) for many decades to come.

The case for *per capita GNP* as an economic determinant of military capability can be based on the elementary economic theory of consumer behavior. *Per capita GNP* is a fairly good approximation for the disposable income of the typical citizen. The higher this income, *other things being equal*, the more will he or she wish to spend on the consumption of all "normal" goods, that is, food, clothing, vacations, and future goods (through current saving). It is reasonable to assume that military capability is one of these "normal" goods. Military capability provides protection against external aggression as well as the ability to favorably influence international affairs. It is thus very likely that typical citizens are willing to pay more for military capability as their per capita incomes rise. In broad terms, they are willing and able to pay a higher percentage of their income in taxes; thus, a relatively small country with high per capita GNP may be able to afford a larger military capability than a large country with the same aggregate income, but a low per capita income. There are some hidden complications in these analyses, however.

Now consider two countries that have identical levels of *per capita GNP* and are otherwise identical, except that they differ in their sizes, one having a large and the other a small population. Which is likely to have the larger military capability? To answer this question, we must realize that certain elements of military capability can be provided under conditions of increasing returns to scale, which imply decreasing *per capita costs* as the populations rises. This point may be illustrated by reference to nuclear military capability. The *total cost* of providing a given nuclear capability, although large, is likely to be independent of the population of the country. A population of 100 million can be protected as cheaply (or expensively) by nuclear weapons as one of 10 million. In other words, the provision of a nuclear military capability has a high fixed cost but a very low (or even zero) marginal cost as the population increases. Consequently, the *per capita cost* of providing a nuclear military capability declines with the size of population. We would expect, therefore, that if two countries have the identical *per capita GNP* and face identical other conditions, the one with the larger

population is more likely to acquire a nuclear capability than the one with the smaller population. The *per capita cost* of a nuclear capability is smaller for a large than for a small country and, hence, a large country is more likely to have it. This expectation is, indeed, borne out by the relevant evidence.[4] This argument also helps to explain why countries form defensive alliances in which only some countries provide the nuclear cover for all.

To be sure, not all types of military capability have the property of high fixed and low marginal costs, which imply declining *per capita costs*. There may even be cases in which the marginal cost of providing a military capability for an increasing population is rising. This would imply rising *per capita costs* and, hence, declining military capability as the population increases.

The Importance of Human Resources: Over the centuries warfare has become more capital-intensive and technically more sophisticated. Today military dominance on land, on water, in the air and in space requires highly complex technical systems, which need to be supported by advanced software for logistics and communications.

The following types of questions arise:

- What are the human resource requirements, in terms of both quantity and quality of labor, that are necessary to develop, copy, maintain, manage, and operate a technically modern military capability?
- Can the relevant human capital requirements be acquired from abroad, either by hiring foreigners or by having domestic personnel trained abroad?

[4] See the contribution to the first conference by William Niskanen.

- Can the required human resources be diverted easily from the private to the military sectors?
- If they must be built up domestically, how must the educational infrastructure be developed?
- How should the primary, middle and high schools, the university, technical and military colleges be adapted?
- How can such intangible qualities as motivation, initiative, teamwork, and esprit de corps be built through organization and training?
- What accounts for differences in these characteristics across countries and over time?

In addition to its impact on military capability, the expansion of human capital through education is likely to have many beneficial effects on society. Total economic capacity is likely to be increased and the operation of social and political institutions may be improved.

A special set of questions arises in the case of China, which has a vast population, and an excellent and widely used system of primary schooling, yet a relatively low level of *average* technical education. Can such a country quickly and cheaply train sufficient scientists, engineers and managers to support an effective modern military capability? Or does the level of technical education have to be raised gradually for large sections of the population? Casual examination of history would suggest that spearheading by the military to the technological frontier is quite possible. In the Soviet Union, for instance, vast resources, including educational resources, were devoted to the development of the military and space apparatus which attained state-of-the-art technology. Whether this was economically the most efficient way to achieve this objective is a separate question. Dr. Cliff's papers and subsequent discussion suggest that the segregation of military and civilian R&D in China is potentially self-defeating.

These considerations are relevant to a model of military development, which has been advanced by some Chinese military strategists under the name of *Revolution in Military Affairs (RMA)*. According to this model, the Chinese should not try to catch up with other countries' military technology, but rather leapfrog to a totally new technological frontier and thereby establish military superiority while the present superpowers adhere to their investments in the then antiquated technology. Such leapfrogging would undoubtedly require large amounts of economic and human resources. In the present context an important question is: Can China afford to train and divert to military purposes sufficient numbers of scientists, technicians, systems managers and so forth to make the RMA a feasible goal of public policy?

The Conferences

In the three conferences an attempt was made to address some of the issues that have just been described. Following is a summary of the papers and ensuing discussions; the full versions are presented in Sections Two, Three and Four.

First Conference: The Economic and Historical Perspective. The first of the three conferences was held on 21 November 1997 at the University of Maryland. After the welcoming address by Professor Olson, Professor Richard Cooper of Harvard University gave the *Keynote Address*. Professor Cooper, in his work for several U.S. government agencies, has had extensive experience of dealing with China.

Cooper's address, summarized in Chapter II, led to the conclusion that because of a multitude of difficulties faced by the Chinese authorities, they maintain that they "require quiet" for another three to five decades both domestically and internationally. Cooper sees no signs that this Chinese stance is changing.

Cooper identified the following problems that the Chinese needed to address.

- There is the *Fiscal Problem* of extracting sufficient resources from the economy for the central government, specifically to finance the military effort. (In this connection, see also the paper by George Quester in Section Three.) In view of the increasing economic decentralization that has taken place in China, the central government will find it more and more difficult to raise funds for its own projects.
- There is the problem of *Education and Human Capital*. (In this connection see also the contribution by Roger Cliff in Section Four.) In Cooper's view, education in China is deteriorating for fiscal reasons. The skill levels, especially the systems management skills required for modern armed forces, may therefore not be available for years to come.
- There are *Specific Shortages*, especially of oil and food, which may hold back Chinese economic development, especially in view of the Chinese desire to be economically highly self-sufficient.

Dr. William Niskanen presented the first paper of the session. It is entitled *A Personal Perspective on the Economic Basis for Military Capability* and is reproduced in Chapter III. Niskanen used information for 149 countries to conduct a cross-sectional regression analysis of military capability (measured in five different ways) in terms of per capita GNP, population, and dummies representing military alliances. He concludes that:

- Both per capita GNP and population influence military capability positively and significantly.
- Nuclear capability, however, seems to be influenced only by population.
- In general, military capability increases by about .5 percent for every one percent increase in per capita GNP. China's very rapid

economic growth, even if it were to continue at a reduced rate, would this be likely to contribute substantially to China's potential military capability.

Niskanen is careful, however, to point to a number of qualifications that should be kept in mind in the interpretation of his results. One such qualification was the effect of being a member of an alliance, where a large member might have nuclear capacity.

In the ensuing discussion of Dr. Niskanen's paper initiated by Professor David Li, a number of somewhat technical points were raised; for instance, which other explanatory variables might have been included and which foreign exchange rate should be used when making international comparisons of GNP? A conceptual point was brought up about the definition of *military capability*. Vis-à-vis other countries, do we mean *aggressive* or *defensive* capability? Internally are we talking about a *parade* or *an internal police* capability?

Professor Shu Guang Zhang presented the second paper of the session: *China's Strategic Culture: Traditional and Revolutionary Heritage* (see Chapter IV). Professor Zhang's essential points were as follows:

- China's military stance cannot be understood without reference to its historical and cultural development. Both Confucianism and "Legalism" have influenced Chinese thinking on governance and, in particular, on the role of the military. Legalism teaches that force is an integral part of governing both for internal and external purposes. Thus Mao is quoted as follows: "War is politics and war itself is a political action."
- In China the belief is widespread that a successful military (especially an army) is based on indoctrinated and highly motivated men, rather than on technology. Only recently and slowly has there been a shift in emphasis toward high-tech in the military.

- China's development of its nuclear capability was motivated largely by its desire to belong to the nuclear club. International recognition is an important aim of Chinese foreign policy.
- As a consequence of some relevant historical events, China is very sensitive about foreign aggression and interference (even by the then reputedly friendly Soviet Union).
- In attempts to undermine the power and influence of the other superpowers, China has supported revolutionary and "rogue" states. This has been justified by the professed desire to represent the weak, the poor and the oppressed who have been subject to imperialist exploitation.

Professor Zhang concluded that "China has yet to be content with its influence and prestige in world politics."

In the ensuing discussion, the question of whether the Japanese economic and military history could serve as a guide in an analysis of the present Chinese development was discussed and answered with a "no" by Professor Jon Sumida. The Japanese situation was very special and is unlikely to be relevant to any other country. The offensive and defensive patterns of recent Chinese behavior were discussed. In general, Chinese behavior had been nonaggressive. In the future, the Chinese navy is likely to play an increasing role. In particular, the Chinese intend to construct a "Blue Water Navy" to protect its long East Coast. This would be expensive and possibly take many years. The question was also raised of whether China would agree with the apparently universal taboo of the (at least, first strike) use of nuclear weapons. Professor Schelling, who gave an evaluation of the discussion, suggested that military intention rather than military capability had been discussed. He suggested that we should ask: With regard to what countries are we most afraid concerning Chinese behavior? Countries such as Korea, Taiwan, Japan, Kazakhstan, Malaysia, Indonesia? The possible Chinese actions and the United States reaction should be studied in detail. Another question that was raised was does the presence of rela-

tively large Chinese ethnic minorities in neighboring countries affect their military policy vis-à-vis these countries?

Second Conference: Organizational Capacity and Military Development. The second conference was held on 16 January 1998 at the University of Maryland. Professor George H. Quester presented the first paper, entitled *The PLA and the Private Economy* (see Chapter VI). In the course of the increasing decentralization in the economy that has been taking place in China over the past few decades, the central government has seen its revenues shrink and its ability to maintain a large military diminish. Therefore, the military forces were encouraged to raise their own funds by engaging in business activities. Good data on this process of the increasing commercialization of the armed forces are not available, but it appears that their commercial activities are now substantial. In addition to their traditional role in agriculture, the military owns and operates much of heavy industry (including the production of military equipment) and services (airlines and retailing, for instance). One estimate suggests that in 1994 as much as 80 percent of all activities of the PLA consisted of commercial activities. What are the likely effects of the increased commercialization upon military preparedness? Military professionalism is likely to be compromised and the military may have become more corrupt. On the other hand, the increased business activity may increase the efficiency of officers. It is also questionable whether the military's commercial activities benefit the Chinese economy, especially since the military can exercise monopoly power in many areas and, sometimes do not need to cover overhead costs (e.g., when they use military aircraft and airports to supply private sector services). In general, the military threat of China to other countries is likely to be reduced by the armed forces' commercial activities and it tends to reduce the control by the government and the Communist Party over the military; it makes the PLA more receptive to global ideas and concerns, so that both Taiwan and North Korea tend to recede in military importance. In Quester's view, the primary motive determining behavior in the PLA as well as elsewhere is "to make money for the army as a whole, and to some extent also for individuals."

In the ensuing discussion of Professor Quester's paper, led by Professors Hongying Wang and Dali Yang, it was pointed out that the Chinese police forces also tend to engage in commercial activities. Estimates of the relative importance of PLA activities were also suggested. The PLA runs 15,000–20,000 businesses in comparison to a total of 300,000 state-owned enterprises. But many enterprises, which previously produced defense equipment, have been converted to civilian production and of the three million PLA soldiers, many are working in civilian jobs. The civilian activities seem also to absorb demobilized PLA officers and soldiers. It has been estimated that about $25 billion is earned by the PLA in civilian activities, compared with an official PLA budget of $7 billion. The influence of the PLA's commercial activities on the economy is likely to be detrimental. Not many of the PLA businesses are making money, they exercise monopoly powers through special licenses and permits, and they prevent institutional reform. Thus they do long-term harm to the economy. There has been a decrease in the ideological commitment of the PLA to communism, but nationalism may evolve as an alternative motive for fighting.

Professor Martin King Whyte presented the second paper of this conference, *Social Trends and Military Capacity in China* (see Chapter VII). In Whyte's view, recent Chinese policies should be seen against the background of 150 years of perceived humiliation by the West. This has given rise to nationalist movements, some of which promote fascist themes. Top party and military leaders have encouraged popular expressions of nationalism. In this respect there appear to be similarities between China today and Japan during the interwar years. Unlike Japan, however, China does not have a tradition of a highly respected military class. The military spirit of the PLA was developed deliberately. The indoctrination of mainly rural voluntary recruits was intensive. The emphasis was on developing individual bravery, loyalty, and ingenuity in war, rather than on large numbers of men or sophisticated weapons. After the Cultural Revolution changes took place, the reliance of the PLA on rural recruits declined. The living standards in rural areas

tended to improve and there was a one-child policy, both of which reduce the attractiveness of the PLA for potential volunteers. Because of a general loosening of government control, especially of the China Communist Party (CCP) there now also seems to be a reduced ability to indoctrinate soldiers. At the same time military doctrine is moving away from the "man over weapons" ideology. There is in the PLA a growing emphasis on professionalism. In Whyte's view, these recent developments make "China's leaders less likely than Japan in the 1930s or China of the 1950s to risk war."

In the discussion of Whyte's paper, the comparison between China today and Japan in the pre-World War II era was taken further by Professor Richard Samuel and other speakers. Although the Japanese had engaged in aggressive military acts, the United States was slow to perceive Japan as a military threat. Both Japan in the early 1900s and China today were deeply involved in foreign trade. Both countries relied heavily on the rural population for their manpower requirements. Both felt grievances against the outside world and in both countries, nationalistic tendencies, bordering on fascism, developed. Further, the cult of the ordinary "fighting man" was fostered by both armed forces. But there are also differences; the Japanese military has always enjoyed a high social status and influence, and that is not true of China. Moreover, Japan's government regulated the Japanese economy in great detail, which appears not to be true of present-day China. There are also significant dynamic differences; as Japan moved from a relatively democratic to an authoritarian state, it became poorer, while China is experiencing a rapid increase in its economic well-being as it is moving away from totalitarianism, at least in the economic sphere. The effects of the one-child policy, the rise in national pride, and the effect of training and motivation of the Chinese officer corps on military capability were discussed.

Admiral Turner led the discussion of the entire session's topic by emphasizing the importance of training and the development of tactics. This is especially applicable to the Chinese armed forces since, apart

from some minor skirmishes, they have not engaged in a major conflict since the Korean War. The interrelation between the civilian and military sectors was discussed. Many specialists in the United States feel that the military ought to be isolated from civilian trends. The discussion turned to the Revolution in Military Affairs and the Chinese capability of leapfrogging military technology. Apparently the Chinese military has purchased abroad only parts of new technological systems, rather than the whole systems together with the ability to maintain them.

Third Conference: Technology and Military Capability. The third conference was held at the University of Maryland on 13 March 1998. Professor David Shambaugh summarized his paper, *China's Threat Environment: Implications for Defense Development and Procurement* (see Chapter IX). The Chinese have a relaxed national security environment with regard to both deployment and procurement. But they are sensitive to encroachment on their periphery. Most of their border disagreements are dormant or have been settled (e.g., those with Russia). As a consequence, China's military preparedness has not changed a great deal since the early 1980s. The PLA has been reduced in numbers, by shifting about one million soldiers to the People's Armed Police, which, however, remains under the top command of the PLA. Although there have been improvements and increased expenditures in the Navy and the Air Force, Western experts " ... place the PLA's conventional capabilities *twenty to thirty years behind the state-of-the-art, with the gap widening*." In ballistic and cruise missiles, however, China's technologies are considerably better—and improving. In Shambaugh's view, "China seems to be building on its few strengths, consolidating pockets of excellence, while trying to leapfrog certain technology gaps, and acquire a military capability ... that is of world-class standards." This would be in accord with the PLA's new operational doctrine of "limited war under high technology conditions" and their emphasis on the Revolution in Military Affairs. But "... the PLA finds itself way behind the R&D curve—and will be hard pressed to catch up."

In the discussion of Professor Shambaugh's paper, Professor Michael Nacht, Dr. Michael Pillsbury, and others pointed out that it was very difficult to discover what went on in the Chinese hierarchy. Who are the key players in the discussions of threat assessment? What roles are played by the PLA, the Politburo, the National Defense University, and others in the determination of China's defense and military policies? Similar lack of information seems to surround the debate about RMA, which started after the Gulf War. The Chinese had expected the Gulf War to be won by Iraq. It is a Chinese custom to deny the existence of differences in opinion. Hence, not much is said about the debate between the conventional "local-war" school of thought and the RMA adherents. But China already has a very active space program and a laser weapons program as well as programs to develop high-powered microwave and radio frequency programs that are aimed at the destruction of military space technology, so successfully used by the United States in the Gulf War. Although China has expressed keen interest in joining international organizations and treaties, she has not invariably adhered to international commitments (for instance, China broke the Nuclear Nonproliferation Treaty). China's participation in multilateral organizations seems to be motivated by a desire to block the United States. Although the United States is often described as a great threat to China, China has never demanded that the United States withdraw its forces from Japan and Korea. Perhaps the U.S. military presence in these two countries is seen as a stabilizing influence.

Dr. Roger Cliff presented the second paper of the conference. *China's Potential for Developing Advanced Military Technology* (see Chapter X). At present, China has a huge military establishment, but its military technology is that of the 1950s and 1960s. There are pockets of excellence, especially in ballistic and cruise missiles. The current time, therefore, is a particularly favorable time for radical improvements in military technology. A Revolution on Military Affairs might enable China to leapfrog straight to the technological frontiers while the United States remains wedded to its huge stock of previous-generation weapons. The question is can China leapfrog present state-of-the-art military

technology? To do so China must develop a domestic arms industry that is adequate for the task. In this effort China may be helped by the convergence of military and civilian technologies, especially in the areas of information collection and processing. Many components can be adapted for both civilian and military uses. China's decision to open up the economy to foreign trade and investment in the 1970s has also played an important part in bringing new technologies into the country.

Cliff presents some general characteristics of technology: it comprises inputs, machinery, and know-how, but the ultimate limiting factor is always know-how. "Thus, technology is ultimately just knowledge." Further, Cliff asserts that "the ability of China's defense industries to produce advanced weapon systems will be limited by the technological capabilities of China's civilian industries and the capacity of China's defense industries to develop new technological knowledge." Human capital, technological effort, incentives, and institutions foster technological progress.

As far as *human capital* is concerned, China's strength lies in elementary education. But as the schooling level rises, the achievement levels fall. Cliff concludes: "... in 2005 about 6 percent of China's 22-year-olds will have received a college education, 28 percent will have received a high school education, 66 percent a middle school education, and 90 percent an elementary school education." Only about 7 percent of all college graduates enrolled in graduate school in China. Beyond the elementary school level, China's educational achievements compare poorly with other Asian states (Japan, India, South Korea and Taiwan). Although the percentages are low, the absolute numbers of natural scientists and engineers far exceed those of South Korea and Taiwan, roughly equal those in Japan, and fall short of those in India and the United States.

As far as *technological effort* is concerned, China's effort—measured by numbers of scientists and engineers, expenditures on R&D, number of published articles, and number of patents granted—is considerable

in absolute terms and far exceeds that of Taiwan and South Korea, but falls short of that of Japan and the United States. With regard to incentives, China does appear to encourage competition among competing defense contractors. Furthermore, some arms (e.g., missiles) are produced for export and thus must meet a market test. The labor markets for enterprises in the defense industry appear to be highly inefficient, mainly because workers are hired for life. Relatively high civilian wages mean that defense industries do not get adequate high-skill manpower.

As far as *institutions* are concerned, relatively little information is available. It appears that the defense industries are quite well integrated vertically, but that there is little horizontal flow of information. This may inhibit the flow of information necessary for technological progress. Cliff concludes: "While the barriers to China developing advanced military technology are currently high, China clearly has the *potential*, within the next twenty years, to present the type of military challenge to the United States that the former Soviet Union did, if China's leaders were to choose such a course."

In the discussion that followed Dr. Cliff's paper, led by Professor Turner, it was asked how the Chinese might challenge U.S. military capabilities. Would they wish to deny the United States access to certain sea areas? Or would they engage in expansionary land control? Possible conflict areas would be Korea and Taiwan in the short run and Japan and the Philippines in the longer term. Military capability was based not just on technology: one needs training (which few military do right), testing, logistics, maintenance, doctrine and tactics. A whole doctrine of "being ready" needs to be developed. It was suggested that the Chinese might focus their RMA efforts on relatively few technologies, for instance, in outer space. The importance of Chinese graduate students in the United States and Europe was also discussed. They are mainly engaged in the study of the natural sciences, engineering, and medicine. Over half did not return to China after completion of their studies.

Nevertheless they may be a significant conduit for the flow of technical and scientific information to China.

Professor Schelling then gave his overall reactions to the three conferences. First, he was surprised that hardly a word had been spoken about nuclear weapons. Had the unspoken taboo against the use of nuclear weapons been accepted by the Chinese? Second, Schelling commented on China's apparent inability to comprehend United States foreign policy against their country and the rest of Asia. Efforts to reassure the Chinese of the non-hostile intentions of the United States would be helpful. Third, Schelling emphasized the sociology of military readiness. It was as important as technology. It consists of organization, coordination, intelligence, and esprit de corps. All may be very hard to develop. Fourth, what should we fear from the Chinese 30 to 40 years from now? Schelling guessed that the Chinese would not be our allies. Should we expect invasions of Korea? Taiwan? Vietnam? Or others? By the same token, United States attitudes toward world leadership and Asia will change over the next 20 to 30 years. Our own military capability is unlikely to remain constant, given that the U.S. defense budget is currently vastly greater than that of any other nation.

In the general discussion that followed Professor Schelling's talk, it was suggested that the United States devoted far too few resources to the study of Chinese military affairs. A mass of available relevant Chinese material remained untranslated. There were too few scholars who knew both the Chinese language and were interested in the Chinese military. Moreover, it was hard to get U.S. intelligence organizations, when studying foreign militaries, to focus on organizational aspects such as levels of skill, maintenance, and training.

Evaluation and Further Research

In this discussion an attempt is made to draw some general conclusions from all three conferences and, as a corollary, suggest areas of research

through which further light might be shed on the general topic of the conferences: *The Institutional, Economic, and Organizational Bases of Military Capability*.

The "stylized facts" about current Chinese military capability and its future development that have emerged in the three conferences might be summarized as follows: China, a vast country with a huge population, has experienced very rapid economic growth with the assistance of large private capital inflows. The mantra in China is: "Make Money." The rapid growth has been associated with a decentralization of economic and possibly also political power.

China's military originated during the civil war and was used for internal control and, apart from the Korean War in the early 1950s, has gained combat experience in only relatively few skirmishes with neighboring countries. Its is still largely a land-based force with a growing air, naval, and ballistic capability. Most experts seem to agree that with the exception of pockets of excellence, the technology of the Chinese military forces is twenty to thirty years behind the present state of the art. The question is whether the Chinese are willing to make the substantial sacrifices that would be involved in updating their military technology to modern levels or even surpass these levels by leapfrogging, as seems to be advocated by the supporters of RMA.

An awareness of ancient Chinese culture and a series of perceived and real injustices suffered by China during the past 150 years have led to a nationalistic movement which demands more recognition and a larger say in the international arena. Such a movement may well demand a strong modern military capability to support its claim that China is taken more seriously, that it be "shown more respect" internationally. What about the costs of updating the Chinese military? If China were to be satisfied with the state-of-the-art military technology, it could buy much of the hardware abroad. It would, of course, still have to train support and maintenance staff, much of which might also be done abroad. Although China has large export earnings and has accumulated

substantial foreign exchange reserves, it has not bought large amounts, especially systems, of high-tech military equipment abroad. There are, of course, export restrictions imposed by the West. In addition, the Chinese seem to have a desire to be self-sufficient. Further, if they really wish to leapfrog current state-of-the-art technology, to be the world's technological military leader, then they must develop it themselves. It seems that this would be very expensive, maybe even impossible, to do. It is, of course, quite possible that China will achieve military technological superiority in only a few areas, say in outer space or the current areas of excellence, namely, ballistic and cruise missiles.

Much further research on the barriers to independent Chinese technological military breakthroughs to the current state of the art and beyond have been suggested by the conference. Research in this area is particularly difficult because of lack of adequate information. The Chinese tend to be not forthcoming with information for genuine national security reasons, or because they dislike talking about disagreements and debates in their own ranks, or because they simply do not have the requested information themselves. Further, as Dr. Pillsbury pointed out repeatedly, there may be relevant information available in Chinese which simply has not been translated and made available.

The conference discussions suggest a number of research topics that might be pursued in the future:

The New Fiscal System: With the decentralization and semiprivatization of the Chinese economy, a new fiscal system of allocating funds to the central government and local governments seems to be in the process of being developed. Further, as we learned from Professor Quester's paper, the PLA engages in commercial activities to raise revenues. How exactly does this affect the allocation of resources, especially to the military, and to research and development? Ideally, we would like to have a complete set of income and expenditure accounts for the central and local governments as well as the PLA. One of the commentators on Professor Quester's paper suggested that some of the firms that are

controlled by the P.L.A were quoted on the stock exchange, so some information might be gleaned from their published accounts

The Educational System: To develop and maintain a high-tech military capability the educational infrastructure must be able to supply not only adequate numbers of highly trained natural scientists and engineers, but also systems managers and information analysts. Professor Cooper referred to this in his keynote address and Dr. Cliff gave some important factual information on educational achievements in China. If possible, this work should be expanded to include other educational institutions, such as trade schools and military academies. An important piece of further research would consist of estimating the minimum number of scientific, engineering, and management experts that would be required for the development and continuing support of some specified level of high-tech military capability.

The Research Capacity: This area is also covered by Dr. Cliff's paper and it is related to the point made in the last paragraph. In addition to the number of trained experts, what should be the institutional environment and incentive structure of building a research capacity that is capable of developing and then maintaining a high-tech military capability?

Other Aspects of Military Capability: Both Professor Schelling and Admiral Turner repeatedly mentioned that more than hardware and scientific manpower is required for military capability. Turner emphasized training, testing, maintenance and tactics. There needs to be a doctrine of "being ready." Schelling spoke of the "sociology of military readiness"; it consists of organization, coordination, intelligence, and esprit de corps. A useful research project would be to formalize these relationships to get a more precise concept of military capability.

Military Capability as a Public Good: Military capability has important public goods aspects. Suppose, for instance, that military capability yields satisfaction in the form of security or national pride to the aver-

age citizen, then an increase in the population may not necessarily require an increase in the military capability. This is particularly obvious in the case of nuclear capability: its total cost is much the same for India as for, say, Denmark. Given that each citizen receives the same satisfaction from the capability, the per capita cost of the satisfaction would be much lower in India than in Denmark. Hence, not surprisingly, Dr. Niskanen's results show that countries with large populations are more likely to have nuclear capability than countries with small populations. The question is: As a country's population grows—other things being equal—does its military capability have to grow to give the same per capita satisfaction? An informative piece of research would be the theory of military capability as a public good. This would enable us to think more precisely about the meaning of the term "military capability." It would give us a conceptual framework for the interpretation of Dr. Niskanen's results. It would also be relevant to Dr. Cliff's results of low percentage but high absolute Chinese levels of educational achievements and their importance for military capability.

Military Capability and Self-Sufficiency: According to Professor Cooper's address, China will face, with continuing economic growth, both energy (oil) and food shortages and will most likely be forced to import significant quantities of these commodities. China also seems to have been reluctant to engage in military alliances with other nations to share the cost of military capability. Its trade policies are mercantilist: high exports, low imports, high trade balances and accumulation of large foreign exchange reserves. Are there any military benefits deriving from these policies? If so, how could one define the tradeoff between such benefits and the economic strains that they undoubtedly create? These questions would appear worthy of further research.

SECTION TWO

THE ECONOMIC AND HISTORICAL PERSPECTIVE

- ***Chapter II. Summary of Welcome by Mancur Olson and Keynote Address by Richard Cooper***

Written by Anthony Lanyi, IRIS Center

- ***Chapter III. The Economic Perspective***

"A Personal Perspective on the Economic Basis for Military Capability"
Presented by Dr. William Niskanen, Cato Institute
Professor David Lt, University of Michigan, *discussant*

- ***Chapter IV. The Historical Perspective***

"China's Strategic Culture: Traditional and Revolutionary Heritage"
Presented by Professor Shu Guang Zhang
Professor John Sumida, *discussant*
both University of Maryland at College Park

- ***Chapter V. Summary Discussion***

Chaired by Professor Thomas Schelling,
University of Maryland at College Park

Chapter II
Summary of Welcome by Mancur Olson and Keynote Address by Richard Cooper

Anthony Lanyi

Introductory remarks were delivered by **Professor Mancur Olson**, Chairman and Principal Investigator of the IRIS Center. He pointed out that the main concern of the conference was related to IRIS' study of incentives, law enforcement and the relationship between the public and private sectors. The more powerful the private sector victims of theft, the more pressure there will be on the public sector to make law enforcement effective, and the more the private sector will work to help make the law effective (e.g., by reporting lawbreakers to the authorities). In a Stalinist economy, by contrast, everyone outside the government has incentives to break laws; for instance, if the government fixes prices below their equilibrium level, both buyers and sellers have incentives to make illegal deals, to break the law, and to bribe officials. Such incentives toward corruption tend to involve the military as well. In the long run, Communism in the Soviet Union and Eastern Europe generated corruption throughout its political and economic system, and this has been perhaps also the case in China. Historically, countries with relatively honest bureaucracies have tended to have stronger militaries, and for this reason South Korea and Taiwan may have stronger militaries relative to their size than does China.

Professor Richard Cooper (Department of Economics and Center for International Affairs, Harvard University) gave the keynote address. He

acknowledged the importance of trying to predict which countries would develop a first-class military capability, i.e., the ability either to be a major power or at least to "create headaches for the major powers." This list included Germany and Japan earlier in the century, Iraq and Israel more recently, and perhaps China in the future. He thought that William Niskanen's "fascinating empirical paper" contributed to this question. In his own remarks he emphasized *money*, *manpower*, *management*, and, finally, *political will*.

Money includes not just potential resources available on the basis of GDP, natural resources, and so on, but more precisely the resources that are *practically available* to the authorities, which depends not just on GDP but also *fiscal capability*. Moreover, a sustained conflict requires a country to have either a well-developed industrial base or a secure, reliable source of supply.

Manpower means not just enough people to man a military, but adequately trained manpower, capable of using and maintaining sophisticated equipment, and also having skills in manufacturing and designing equipment. Skill levels are more important than sheer number of troops. This implies that the national system of education and training is important.

Management has two aspects: logistics (supplies, feeding and clothing and meeting medical needs of the troops) and systems (information gathering, integrating information, making decisions, and transmitting decisions).

Political will (or capability, or desire) affects the ability of the government to mobilize resources. In 1900 (measured in 1990 U.S.$), the total GDPs of Germany, the U.K. and the United States, were $8 billion, $9 billion and $18 billion, respectively. Japan, by contrast, was very poor, with a GDP of $1.2 billion ($28 per capita). Yet the military forces of these countries did not differ as widely as their GDPs. By 1913, 17 percent of GDP was going to the government in Germany, compared

with only 8 percent in the United States (of which only 2 percent of GDP was for the federal government). The United States had a very small army in 1900, reflecting its small desire for a large military force; its fleet, though respectable, was smaller than those of Russia and France, and way behind that of the U.K. (As a result, in the early 1900s, East Coast cities were vulnerable to naval guns and even discussed a proposal to join the British Empire for protection!) Germany built up a big military force, alienating the U.K. by its naval expansion. Japan devoted 14 percent of GDP to government expenditure, modeling its army on that of Prussia (universal male conscription was introduced in 1872) and its navy on that of the U.K. Its foreign policy concerns were regional: the domination of Korea, for instance. It defeated China in 1895, seized Formosa, and in 1905 defeated Russia and took Manchurian ports from Russia.

Iraq and Israel are recent examples of political will translating into a strong military. Iraq has been the best-skilled country in the Arab World, with a very concentrated, single-minded political authority. Israel, with a population of only 5.2 million, can quickly mobilize 2 million men and women. Its GDP (about $70 billion) was about the same as that of Iraq in the late 1980s. Israel spends 10 percent GDP on its military; this is about the size of its current account deficit. Its military is designed for defense, but strong regional offensive capabilities are required for a good defense. They have a small but high-quality defense industry, otherwise relying on supplies from the United States.

China has in recent years been much ballyhooed as soon to be the largest economy and most powerful nation. This is a myth, partly created by the use of purchasing power parity (PPP) calculations by the World Bank. Actually, Cooper believed, market exchange rates gave a more accurate figure for GDP, about $700 billion, making China about the economic size of Canada or Spain now, but growing more rapidly. A new World Bank study projects China growing by about 6.5 percent over the next 25 years (although this may be more in U.S.$ terms, because of improving terms of trade). Choosing 2015 as a projection year,

and an 8 percent growth rate between 1995 and 2015, China will be 27 percent the size of the United States, a little larger than the U.K. or Italy but still much smaller than Japan or Germany. Nevertheless, this will make China a big country, comparable to the United States in 1966.

Cooper argued that *China will find it challenging to achieve this rate of growth*, for two major reasons, and a couple of other possible reasons as well.

(1) China suffers from serious *fiscal strains*, especially at the center. Beijing's fiscal take has declined from 30 percent of GDP in 1975 to 12 percent today, while the share of the provinces has increased. While the fiscal claims of the center have also declined—subsidies to state-owned enterprises are diminishing, although replaced by bank credits, and local governments are now being forced to pay for local services from their own resources—there are huge infrastructural needs and the banking system is in "wretched shape" and in need of recapitalization.

The PLA, which wishes to modernize, is competing for resources with these urgent needs. The Chinese defense budget is $5 billion, but its real expenditures are 4 to 7 times that. This would mean that the PLA's total outlays are some 3.5 percent of GDP, approximately $8000 per man, as compared to $120,000 per man in the United States (not including salaries in both cases, which in China are negligible). The Chinese will nevertheless continue to modernize the PLA, but will still be way behind a really modern force for many years to come.

(2) *Education* is deteriorating for fiscal reasons. While the *crème de la crème* Chinese students are in United States graduate schools, the system as a whole is in a state of serious decay, leading to a possible decline in literacy and increasing privatization of schools. Management training is a serious lack in the educational system. The Chinese have poor reputations as systems managers, although one finds some good technicians there.

(3) An additional problem for China is their *demand for oil*, which is rising more rapidly than their output. By 2010, they will be importing three million barrels a day, mostly from the Persian Gulf; they are trying to strike a deal with Kazakhstan, but an oil line will be expensive. The demand for oil underlines the importance of maintaining sea lanes and the need to build a navy, but also the need to maintain good relations with the United States and Japan and to maintain stability in the Persian Gulf. It also adds to infrastructural needs.

(4) A further problem to be overcome is growing *food dependency*. While the United States, European Union (EU) and Australia would be happy to export more, the Chinese don't want to import more than 5 percent of their grain needs. Dealing with this problem—either more domestic output or more imports—will add further to required infrastructure.

Because of all these problems, the Chinese official view is that they need quiet, both domestically and internationally, for another three to five decades. There is no sign from the Chinese that this direction is changing. As an example is their environmental stance: they acknowledge serious pollution problems, and that they will need technical assistance from the West, but don't have the resources now to attack the Chinese contribution to global warming.

In the brief question period following Cooper's talk, **David Li** (Department of Economics, University of Michigan, and Hoover Institute) asked about the impact of Taiwan on Chinese military aims. **Cooper** replied that China does not have the military reach to threaten Taiwan seriously, certainly not if the United States supports Taiwan. **Thomas Schelling** (School of Public Affairs, University of Maryland at College Park [UMCP]) asked what changes might be taking place in the Chinese diet and how this might affect future food dependency; he thought the Chinese authorities must be concerned about this. **Cooper** agreed that this would be a concern, and that up until now protein intake has been very low in China. **Roger Cliff** (RAND Corporation) noted that per

capita income should be considered along with absolute GDP as a measure of economic potential

Chapter III
The Economic Perspective

A Personal Perspective on the Economic Basis for Military Capability

William A. Niskanen

On occasion, I agree to write a paper to discover what I think about some issue. This is one of those occasions. And I ought to have something to say about the economic basis of military capability. I am an economist with 40 years of professional experience, the first 13 years of which were as a defense analyst. For all that, I am much less confident about my judgment of this issue than as a young defense analyst. A part of what shaped my present perspective were some key events that happened in the meantime. Five of the eight nations that developed nuclear weapons, for example, had a GNP that was a small fraction of the U.S. GNP. A much poorer Soviet Union developed the first satellites and some technologically impressive weapons systems. And U.S. military forces, to be blunt, lost the war in Vietnam to the forces of a nation with a GNP that was a tiny fraction of the U.S. GNP. There is a reasonable basis for concluding that the U.S. economic capability to fund a substantial military buildup in the 1980s contributed to the collapse of the Soviet Union, but in this case there are more plausible hypotheses than facts. Maybe my present uncertainty about this issue is a consequence more of learning than of forgetfulness. Maybe.

The Issues

The first question at issue is the following: what are the effects of economic conditions on the level and type of resources committed to the military? This question is subject to fairly simple research, based on the experience over time in one country or a comparison of the record among a set of countries. The only conceptual challenge is to identify and control for other conditions that also affect the demand for military forces. The second question is much more difficult to address: what are the effects of the level and type of military forces on the level of military capability? Some understanding of the answers to both of these questions is necessary to answer the primary question at issue: what are the effects of economic conditions on the level of military capability? This paper presents some empirical results bearing on the first question and some plausible speculations about the other questions.

The revived interest in these issues seems to be based primarily on whether we should welcome or worry about the high economic growth in China and the expected recovery in Russia. At most, this paper can provide only the most general guidance on this issue. A more precise response to these specific concerns requires attention to the specific conditions in China and Russia and other considerations that are likely to affect the behavior of their governments.

The Available Data

My first reaction on deciding to write this paper was to bury myself in the unclassified data on *World Military Expenditures and Arms Transfers* recently published by the U.S. Arms Control and Disarmament Agency. This annual publication presents aggregate data on military and economic conditions, now for 172 countries through 1995. Military conditions are summarized by data on the number of active military personnel and by the level of military expenditures. The primary economic condition of interest is the level of the gross national product. The data on military expenditures

and the GNP are both presented in millions of U.S. dollars; these dollar estimates are subject to considerable "noise," reflecting the problems of estimating both the military budget and national output of other countries and their dollar equivalent. As a rule, the dollar equivalent is based on the purchasing power parity basis for the currencies of largest countries and the average exchange rate for the smaller countries. The other variable of interest is the total population of the country. My focus is on the sample of 149 countries for which data for each of these four variables are available for 1995.

The Research Technique

My first objective is to estimate the effects of per capita GNP on three major dimensions of military capability: the number of active military personnel, the level of the military budget, and whether a country has at least some nuclear weapons. In order to isolate these effects, it is also necessary to control for other conditions that also affect these target conditions. For each country, thus, I control for the alliance or regional groups of which the country is a part and the total population of the country.

Four major alliance or regional groups are considered:

1. The United States, the other NATO countries, and the other countries to which the United States has made a security commitment.
2. Russia and the other countries of the former Soviet Union or Warsaw Pact.
3. Other communist or former communist countries.
4. All countries in the Middle East from Libya through India.

These groupings are identified by (1,0) dummy variables with a value of 1 if the country is in a specific group and 0 otherwise; the coefficients on these dummy variables are estimates of the effects of being in

these specific groups relative to the average of all countries not included in any of these groups.

These several effects are estimated by weighted least-squares regressions on the sample of 149 countries for which data on all of these conditions are available for 1995. The common weight is the total population of each country; this has the effect of making the estimates much more accurate for the largest countries, even at the expense of somewhat less accurate estimates for the smallest countries.

Separate regressions, thus, are estimated for the three target conditions:

1. LAMP natural log: number of active military personnel
2. LMEX natural log: dollar level of military expenditures
3. NWD nuclear weapons dummy

Each of the three regressions, in turn, include the following common independent variables:

1. C constant
2. USD United States dummy
3. SUD Soviet Union dummy
4. OCD Other communist dummy
5. MED Middle East dummy
6. LPCY natural log: per capita GNP
7. LPOP natural log: total population

Although my primary interest is estimating the coefficients on per capita GNP, the estimates of the other coefficients are also of considerable interest

Estimates of the economic and other effects on the major dimensions of military capability are summarized by Table 1

Table 1. Estimates of the Effects on Military Personnel, Military Expenditures, and Nuclear Weapons

Independent Variables	Target Variables		
	LAMP	LMEX	NWD
C	.976 (.368)	-3.996 (.393)	-1.246 (.244)
USD	.722 (.370)	.412 (.181)	.541 (.113)
SUD	1.408 (.353)	1.527 (.163)	.775 (.101)
OCD	1.154 (.105)	.433 (.142)	.352 (.070)
MED	.822 (.113)	.540 (.121)	.426 (.075)
LPCY	.182 (.047)	1.035 (.050)	.002 (.031)
LPOP	.627 (.036)	.933 (.038)	.265 (.024)
Weighted Statistics			
R-Squared	.999	.999	.988
S.E.R.	581	.620	.385
Unweighted Statistics			
R-Squared	.604	.851	---
S.E.R.	1.087	.906	.692

Numbers in parentheses are the standard errors of the coefficients.

First, a word about how to read this table. The coefficient on a group dummy is the proportionate increase in the target variable associated with a country in that group; the (population-weighted) number of military personnel in the U.S. group, for example, is 72 percent higher than if that country were not a member of any of these groups. The coefficients on LPCY and on LPOP are the "elasticities" of the target variables with respect to per capita GNP and total population; the (population-weighted) level of military expenditures, for example, increases by about the same percent as the percent increase in per capita GNP. The ratio of the coefficient to its standard error indicates the

statistical significance of the coefficient; all of these coefficients, with the sole exception of the effect of per capita GNP on the probability that a country has some nuclear weapons, are highly significant. The R-squared statistic is the proportion of the variance of the target variable that is explained by the set of independent variables, and the S.E.R. statistic is the standard error of the unexplained residuals; notice that the S.E.R. of the population-weighted regression is substantially smaller in each case than the S.E.R. for the unweighted sample.

Military Personnel

The strongest effect on the number of active military personnel is the size of the total population but this effect, with an elasticity of .63, is less than proportionate. In contrast, the effect of per capita GNP, with an elasticity of .18, is relatively small, the net effect of an increase in the demand for military forces and an increase in the price of military personnel. One should not expect, therefore, that a combination of slow population growth and high economic growth lead to a substantial increase in military personnel.

Somewhat more surprising, several years after the end of the Cold War and the breakup of the Soviet Union and the Warsaw Pact, is that the level of military personnel is still strongly dependent on the regional or defense group of which the country is a part, with proportionate effects ranging from .72 for the U.S. group to 1.41 for those countries in the former Soviet group. These effects reflect some combination of continuing security concerns and a lagged response to the realities of the post-Cold War world.

Military Expenditures

The strongest effects on the level of military expenditures are the per capita GNP and the total population of the country, each with roughly

unitary elasticities. An increase in total GNP, thus, is likely to lead to a roughly proportionate increase in military expenditures. Military expenditures are still strongly dependent on the regional or defense group of which a country is a part, with proportionate effects ranging from .41 for the U.S. group to 1.53 for the former Soviet group.

Nuclear Weapons

The strongest general effect on whether the government of a country has some nuclear weapons is the total population of the country; a country with twice the population of another has a 26 percent higher probability of having some nuclear weapons. More surprisingly, the level of per capita GNP has *no* significant effect on whether a country has some nuclear weapons. The probability that a country has some nuclear weapons is also dependent on the regional or defense group of which the country is a part, with probabilities ranging from 35 percent for the other communist group to 78 percent for the former Soviet group.

Some Speculation about the Military "Production Function"

The next step is to identify the relation between military capability and the major dimensions of military forces. This has been the task of military analysts and historians for many years, of course, but most such analysis is focused on specific conflict conditions. There is no relevant database to estimate a general military "production function" and, possibly, no meaning to this concept. My task, nevertheless, is to discuss the economic basis for military capability, so some speculation about the relation of military capability to the major dimensions of military forces is necessary to address this issue. For this reason, I have used the concept of a production function to estimate an index of military capability. The general form of this production function is the following:

$$IMC = ae^{b(NW)}AMP^{c}MEX^{d}, \text{ where}$$

NWD is the nuclear weapons dummy,
AMP is the number of active military personnel, and
MEX is the level of the military budget.

My speculation concerns the choice of parameters for this function. The parameter a, of course, is arbitrary; I have chosen values for this parameter so that the IMC for the United States is 100. For the parameter b, I have chosen a value of .095 so that the control of some nuclear weapons increases the IMC by 10 percent. For the parameters c and d, I have chosen two sets of values that are most likely to bracket military reality. For the IMCA index, both parameters are set at a value of 0.5. For the IMCB index, the parameter c is set at a value of 2/3 and the parameter d at a value of 1/3. For the IMCA index, thus, the marginal proportionate effect of an increase in military personnel is the same as an increase in total military expenditures, and this index may better represent the capability for combat some distance from the home country. For the IMCB index, the marginal proportionate effect of an increase in military personnel is twice the effect of an increase in military expenditures, and this index may better represent the capability for sustained combat on or near the home country.

The alternate production functions, thus, are as follows:

$$IMCA = .00429e^{.095NWD}AMP^{.5}MEX^{.5}$$
$$IMCB = .00106e^{.095NWD}AMP^{.667}MEX^{.333}$$

Table 2 presents the index of military capability for selected countries based on each of these production functions.

As indicated by Table 2, the rankings of military capability are the same on each index (with the exception of South and North Korea), but the relative military capability of the poorer countries is higher on the second index. I will leave the reader to judge the index that may be more accurate.

Table 2. The Index of Military Capability

Selected Countries	IMCA	IMCB
United States	100.0	100.0
Russia	48.6	58.9
China	64.3	90.8
Taiwan	10.1	13.5
South Korea	13.2	18.5
North Korea	10.7	18.8
Britain	13.1	13.5
France	23.1	25.5
Germany	16.3	17.4
Japan	14.9	14.4

Estimates of the Effects on the *Indices* of Military Capability

The final step is to estimate the effects of economic and other conditions on the indices of military capability. For this purpose, I use the natural log of IMCA and IMCB as the target variables and the same set of independent variables as in the first set of regressions.

Table 3 presents the weighted least-squares estimates of these effects, again using the total population of each country as the weighting variable.

The strongest effect on military capability is the total population of a country; a country with twice the population of another country, controlling for other conditions, should be expected to have a military capability 75 to 80 percent higher. The level of per capita GNP also has a strong but somewhat smaller effect; a country with twice the per capita GNP of another country, again controlling for other conditions, should be expected to have a military capability 47 to 61 percent higher.

The ratio of the economic effect to the population effect, as expected, is higher the stronger the relative effect of military expenditures on military capability

Table 3. Estimates of the Effects onMilitary Capability

Independent Variables	Target Variables	
	LIMC	LIMCB
C	-7.081 (.373)	-5.395 (.370)
USD	.619 (.172)	.670 (.171)
SOD	1.542 (.155)	1.522 (.154)
OCD	.827 (.106)	.947 (.106)
MED	.721 (.115)	.769 (.114)
LPCY	.609 (.048)	.467 (.047)
LPOP	.805 (.036)	.754 (.036)
Weighted Statistics		
R-Squared	.999	.998
S.E.R	.588	.588
Unweighted Statistics		
R-Squared	.792	.792
S.E.R	.889	.927

Numbers in parentheses are the standard errors of the coefficients

The effects of the four group dummies are surprisingly invariant to differences in the production function, probably because the variance of per capita GNP within each group is lower than the variance among the groups. A substantial part of the variance of military capability appears to be attributable to the regional or defense group in which the country

is a part. Compared to countries that are not part of any of these four groups, the (population-weighted) index of military capability is 62 percent higher for countries in the U.S. group, about 150 percent higher in the former Soviet group, about 90 percent higher in the other communist group, and 72 percent higher in the Middle East group. Some part of these group effects may reflect continuing security concerns, but some part surely reflects a lagged response to the change in conditions after the Cold War. My guess, maybe my hope, is that each of the group effects will be smaller in another five years.

Other Plausible Economic Effects on Military Capability

Enough data mongering; time for some pure speculation about other plausible economic effects on military capability. The composition of the economy differs as a function of per capita GNP and population, and these differences may affect military capability. The rich economies, for example, have a smaller share of the labor force in agriculture, forestry, and manufacturing, this may reduce the pool of fit young men with simple manual skills but increase the number with advanced technical skills. The share of the economy involved in international trade is also smaller as a function of the total population of the country; this may reduce the dependence of the largest countries on alliances to maintain the necessary imports.

Other conditions may jointly affect economic conditions and military capability. The social, economic, and political rules and institutions that favor economic growth may either weaken or strengthen military capability. For years, conservative strategic analysts have worried that rich countries risk "going soft," with a population less able to endure the rigors of combat, less responsive to orders, less willing to risk casualties. Maybe so. On the other hand, such countries are likely to have a larger pool of potential combatants who are tactically resourceful and strategically creative. More important, the conditions that favor economic growth are likely to make the population more supportive of the necessary military measures to maintain these conditions. Many coun-

tries are poor because the government is little more than the dominant local protection racket; such conditions do not promote loyalty beyond the group that specially benefits from this racket.

What are the lessons from history that bear on these other plausible relations between economic conditions and military capability? First, it is difficult to distinguish between the effects of economic conditions and the nature of the political regime. Over the past 150 years, most of the rich countries have also been democracies. During this period, there have been almost no wars between democratic governments, and the rich democracies have prevailed in most conflicts. Germany, Japan, and the Soviet Union, under totalitarian regimes, supported formidable military forces that did not prevail in the long run. This is encouraging but not inevitable. For example, the record of U.S. military forces in Korea and Vietnam, in combat with forces from very poor communist countries, was not impressive.

Conclusion

Military capability, controlling for other conditions, is likely to increase at about half the rate of per capita economic growth. But other conditions are not constant. Most important, the conditions that sustain economic growth are likely to make a country less threatening, even if they increase its potential military capability. For those who either welcome or worry about the high economic growth of China and the expected recovery of Russia, we should both welcome such economic growth *and* be very watchful about its side effects.

Discussion

Professor David Li (Department of Economics, University of Michigan) served as discussant for Dr. Niskanen's paper. In his remarks, he first summarized what he felt to be the important points of the paper, then commented on and made some suggestions about Niskanen's approach, and finally, addressed the implications of the results for China.

Li noted that Niskanen's paper is directed at answering the question of *whether economic growth will eventually lead to a large buildup of military capacity*. He then summarized the three-step approach that Niskanen outlined. The *first step* regressed economic conditions on different measures of military strength: military expenditures in dollar terms, active military personnel, and whether the country has nuclear weapons. Li saw the important outcomes of this exercise as being that an increase in per capita income translates into a proportionate increase in military expenditures; that a one percent increase in per capita GDP translates into about a .2 percent increase in military personnel; and that population growth implies a roughly proportionate increase in military expenditures.

In summarizing the *second step*, Li emphasized the assumptions that were made in order to estimate the production function for military capacity. These are that having nuclear capacity increases military capability by 10 percent; that there are constant returns to scale, i.e., that doubling inputs doubles outputs; and that there is constant elasticity of substitution in the production function.

Li reported that the results of the *third step* of the paper suggest that a one percent increase in per capita GDP leads to an increase in military

capability of about .5 percent and that a one percent increase in population leads to an increase in capability of about .75 percent.

Li's analysis suggested looking at the *microeconomic mechanisms underlying the process of building military capacity*. Two factors on the demand side deserve consideration: domestic special interests in the Olson sense may lobby for support for the military, and international conditions such as the openness of the economy or the presence of border (or sovereignty) disputes will influence the need for defense protection. Li suggested that adding these variables as well as other historical ones would improve the regression analysis.

On the supply side, he recommended *adding a richer set of variables* to the economic explanatory factors. These should include the presence of hostile neighbors and the historical propensity to go to war, as well as factors describing the economic structure of the country. One such possibility would be the ratio of GDP produced by agriculture to total GDP, since he feels that it may be easier to mobilize forces for the military in an economy that is relatively agrarian rather than urban. He questioned the use of nuclear weapons possession as a determinant of capability on the grounds that many highly able countries may be able to produce nuclear weapons, but have decided not to do so for strategic reasons, and therefore the nuclear weapons variable misrepresents their true capability.

Li pointed out that the production function approach that Niskanen uses to determine military capability does not take into account the important *issues of institutional quality and efficiency*. For example, China may purchase military equipment but not have the technology to use it efficiently, or corrupt leaders may make poor military decisions in spite of being well equipped.

In closing, Li addressed the *general issue of China's military capability*. Forces contributing to an expansion include the significant political power of military leaders and the entrenched position rejecting Tai-

wan's independence. On the other hand, generally poor institutional structures and the possibility of appeasing military interests with civilian economic power will work against a rapid buildup, so that China's military strength may not increase as fast as some expect that it will.

William Niskanen (Cato Institute) led off the ensuing discussion by questioning whether the additional explanatory variables suggested by Li would add much explanatory power to the regressions, because they are likely to be highly correlated with variables already in the equation, principally the regional dummies. He also recommended including a careful lag structure, because so much of the current military buildup is a result of past tensions, as between the United States and Russia, for example. He said that his study did not obviate the need to look at the specific conditions of any one country.

Roger Cliff (RAND Corporation) challenged the applicability of Niskanen's two indices of military capability, and suggested that instead Niskanen should use historical data to estimate the relationship between inputs and outputs in the production of military capability.

David Segal (Center for Research on Military Organization, Department of Sociology, University of Maryland at College Park [UMCP]) pointed out the importance of defining exactly what is meant by military capability, and suggested that the American analysts tend to project their own image—that of an offensive unit intending to fight on foreign territory. Perhaps a more typical military operates in a defensive mode, on home territory.

Thomas Schelling (School of Public Affairs, UMCP) commented on the arbitrariness of some of the regional groupings—for instance, including India and Pakistan in the Middle East—and suggested that the possession of nuclear weapons by an ally may be a substitute for a country acquiring them itself, giving the example of the United States and Germany. He asked whether the United States and Taiwan have a mutual defense treaty, to which another participant responded that there

is a "Taiwan Relations Act." Schelling then pointed out that Niskanen's production function should take into account the fact that alliances substitute for military manpower and expenditure, citing the cases of Taiwan's and Japan's relationship with the United States as illustrations.

David Epstein (Office of Net Assessment, Department of Defense) asked the discussants to respond to Cooper's claim that purchasing power parity (PPP) is not an appropriate conversion measure. **Niskanen** made the point that whether an exchange rate or PPP is used is often more a matter of availability than of principle. Another participant said that for small countries that purchase on the world market, exchange rates are more appropriate than PPP. **Cliff** questioned whether the same rates apply to the civilian sector as to the military sector.

Schelling reemphasized Cooper's point that geography plays a large role in determining military attitudes, i.e., who you are threatening and by whom you are threatened. He pointed out that how much of a military threat is posed by a country is not the same question as how well countries can defend themselves.

Mancur Olson (IRIS Center, UMCP) noted that there already exists a body of literature that looks at the peculiarities of individual countries. Niskanen's work is a new and systematic approach to the issue, and while it can never be complete (such things as alliances and geography would always need to be added for a full evaluation), it is a valuable attempt.

Chapter IV
The Historical Perspective

China's Strategic Culture: Traditional and Revolutionary Heritage

Shu Guang Zhang

China's historical and ideological bedrock has nurtured a distinctive national strategic culture. After all, the country possesses the largest land area in Asia, has the biggest population in the world, maintains one of the longest histories of all civilizations and embodies distinctive ideological outlooks. Chinese history is literally a history of war. From the Western Zhou (1100 B.C.) through the end of the Qing dynasty (1911) as many as 3,790 wars, domestic and foreign, and rebellions are identified. Since its foundation in October 1949, the People's Republic of China (PRC) has resorted to force as an instrument of foreign policy *ten* times.[1] Thus, the threat and use of force are central to China's his-

[1] The PRC's uses of force include China's intervention in Korea (1950–1953), military involvement in the first and second Indochina wars (1950–1954, 1965–1973), twice shelling Jinmen/Mazu offshore islands (1954–1955, 1958); military suppression of rebellion at Tibet (1959); the Sino-Indian border war (1962); the Sino-Soviet border war (1969); military counterattack on Vietnam (1979); and the Sino-Vietnamese border war (1981–1989). For a wonderful recent study of Chinese strategic culture, see Alastair Iain Johnson, *Cultural Realism: Strategic Culture and Grand* Strategy in Chinese History (Princeton: Princeton University Press, 1996); also see Shu Guang Zhang, Deterrence and Strategic Culture: Chinese-American Confrontation: 1949–1958 (Ithaca: Cornell University Press, 1992).

tory and any discussion of China's strategic behavior ought to begin with cultural underpinnings.

Analytical Problems

It remains a difficult task to characterize Chinese strategic culture. There are four main analytical problems. First, there are culture changes, especially in recent decades. The causes of change are various but the influence of external culture is a key factor. China, which had remained fundamentally free from Western influence until the late eighteenth century, has become slowly and often reluctantly adaptive to modern trends for well over a century. Clearly no country forgoes its ancient heritage entirely, and certainly not if that heritage is as illustrious as that of China. But the rise and fall of Confucianism, the rise and fall of Republicanism, and the rise and possible fall of Communism that China has undergone and may undergo in this century have affected the nation's politics, society, and certainly strategic behavior. It would a mistake to regard strategic culture as static.

Second, history is a primary source of strategic culture, but the influence of different historical periods varies. The existing literature presents no succinct answer as to whether historical or more recent antecedents are part of Chinese strategic culture. Mary McCauley warns that "we must know just which period 'history' refers to—when it begins and ends—how we can assess the influence of that period with the influence of the more immediate past."[2] Hence, it is dubious to assume a relatively unbroken chain between historical strategic preferences and contemporary policy.

[2] Mary McCauley, "Political Culture and Communist Politics: One Step Forward and Two Steps Back," in Archie Brown, ed., *Political Culture and Communist Studies* (New York: M. E. Sharpe, 1984), p.22.

Third, there is the problem of identifying a strategic cultural identity. There may well be such a "strategic cultural person" in China who occupies political and military institutions, or manages international crises, or directs wars. However, questions such as what has made this person the representative of China's strategic traditions and whether this person's influence has transmitted across space and through time deserve sufficient attention. As much as regarding Confucius (K'ung Fu-tzu)—the most influential philosopher in ancient China who lived around 551–479 B.C.—as China's "political cultural person," numerous Chinese and Western scholars treat Sun Zi (Sun Tzu)—whose writings on the military arts became the late Zhou (400 B.C.) classic—as China's "strategic cultural person." Although some similarities are identifiable between Sun Zi and contemporary Chinese strategists, it would be simplistic to "assume from the existence of two similar sets of beliefs at different periods of time that they enjoy an unbroken existence."[3]

Fourth, political ideology must not be ignored in any discussion of strategic culture. China has produced its own political ideology, Confucianism, which has influenced many of China's neighbors with different ideologies for centuries. Domestically, the Confucian ideology calls for a benevolent bureaucracy under a virtuous ruler. In foreign policy terms, it emphasizes technocratic expertise and easy international contacts between the elite relatively unfettered by pressure groups; it condemns use of force and regards morality as the organizing principle of human society and thus international community. Emphasizing the absence of logical absolutes, Confucius stressed "the judicious balancing of inner virtues and external polish" which set the East Asian pattern of compromise, of always seeking the middle path. It best represents the Chinese "He" (Union) approach to conflict resolution.[4] However, the Legalist ideology, standing opposite to Confucianism, has yet to be stressed in the studies of Chinese strategic culture. Placing

[3] Ibid., p. 24.

[4] John K. Fairbank, Edwin O. Reischauer, and Albert M. Craig, *East Asia: Tradition and Transformation* (Boston: Houghton Mifflin, 1989), pp. 44–46.

great emphasis on violence and power, Legalism has served as a primary guideline to not only the ruling elite, but also the peasant rebels in traditional China and the Communists in modern China. Thus, it is inappropriate to cast off the effect of the rebellion traditions on Chinese attitudes towards national security.

With these problems in mind, this chapter takes strategic culture as a helpful analytical framework to assess the PRC's strategic behavior, and to identify China's traditions, values, beliefs, attitudes, symbols, and culturally based ways of "adapting to the environment and solving problems" with respect to the threat or use of force.[5] This chapter will concentrate on the period from the birth of the CCP (1921) to the present with a particular emphasis on Mao Zedong's strategic outlooks.

Sources of PRC Strategic Culture

Strategic culture as a system of symbols embodies assumptions about what constitutes national security. Security problems and military power may ebb and flow, but historical consciousness will linger, perpetuating an ideological system and political culture.

To identify the nation's cultural roots, students of contemporary China would have to examine the late Zhou Dynasty, known as the Spring–Autumn (770–476 B.C.) and the Warring States (475–221 B.C.) periods. Celebrated as the Golden Age of Chinese philosophy, those years produced many great thinkers, whose influence sustained well over two thousand years. While Confucianism stands out as the most important source of Chinese political culture, Legalism is one of the keys to the understanding of China's strategic traditions.

---

[5] Ken Booth, "The Concept of Strategic Culture Affirmed," in Carl G. Jacobsen, ed., *Strategic Power: USA/USSR*, (New York: St. Martin's, 1990), p.121-56

Legalism was mainly represented by Shang Yang (390–338 B.C.) and Han Fei Zi (280–233 B.C.). Almost a hundred years apart, Shang and Han shared many common beliefs. In contrast to Confucianism, they took a pessimistic view of human nature: human nature is fundamentally evil and thus inclined to do vicious things. Severe laws and harsh punishments are the only means of bringing about order and security no matter how hateful to the people they are. As the ruler's objective is to create a prosperous and powerful state, people are to be made mutually responsible for one another's actions. Extending such a "realist" attitude into foreign policy, they accepted the basic characteristics of the multistate system of their time: a number of equal and sovereign states fighting for survival and supremacy in a world of anarchy. To them, a state's security invariably relies on the ruthless exercise of power.[6]

A significant figure among the Legalists was Sun Zi. A native of the state of Qi, born in the sixth century B.C., Sun Zi and his *Arts of War* are remembered by the Chinese as the paramount articulation of military strategy and tactics in the recorded history of China.[7] Regarding warfare as the most important of all state affairs, Sun Zi writes extensively on how to wage effective war. Along with other traditional strategists, including Wu Zi and Wei Liao Zi, Sun Zi has perpetuated such concepts as "not fighting but subduing the enemy," "the best policy is to attack the enemy's strategy," "know your enemy and know yourself, in a hundred battles, win a hundred victories." His systematic discussions of statecraft, strategy, tactics, organization, mobilization and diplomacy became the core of Chinese strategic traditions through centuries long teachings and practice.

Despite the condemnation of later ages, Legalism left a lasting mark on Chinese civilization. Through the triumph of the Qin state over Zhou in

---

[6] The Legalist ideas are summarized in Fairbank, et al., *East Asia: Transition and Transformation*, pp. 53–54.

[7] See for example Xie Guoliang, "On Sun Zi's Thought on Waging an Effective War," in *Sun Zi Xunlun* [New Exploration on Sun Tzu] (Beijing, 1990), p. 33.

246 B.C. and the imperial system that the Qin dynasty (246–206 B.C.) organized, it partially accounts for the highly centralized government of later times and its harsh and often arbitrary rules, and more importantly, for the constant mass rebellions and tenacious government suppressions in Chinese history. Often in the name of the "Mandate of Heaven," which manifests itself only through the acceptance of a ruler of his people, use of force has been justified by both rebels—sometimes invaders—and suppressors. There are numerous instances of China's resorting to violence in resolving political, territorial, economic, and ethnic conflicts. Rebellion and invasion constantly bring about wars, and often result in changes of political rule, known in Chinese history as the dynastic cycles. As much as totalitarianism, rebellionism constitutes a major component of Chinese political culture.

Contemporary Chinese attitudes toward the threat and use of force are rooted in the nation's experiences with foreigners in recent times. The Opium War of 1839–42 marked the beginning of western imperialism in China. Since then a major shaping force was the search for a way to survival in the New World that had challenged China. This search entailed a hard struggle against the damaged pride, disdain for things foreign, and the inveterate feeling of "national humiliation." The images of "foreign devils," Western gunboats, unequal treaties, international settlements with signs of "No Chinese and Dogs Allowed" deeply planted seeds of distrust and hatred toward foreigners. The deepening crises at the turn of the century led to the emergence of patriotic movements. The "May 4th" movement (1919) became the banner of Chinese patriotism. The Japanese invasions (1931–1945) deepened the fear of becoming a "*wangguodu* (slave without a nation)." "The September 18th"– the date of Japanese invasion of China's Northeast in 1931—and the "Nanjing Massacre" (1937) are inscribed in Chinese history as monumental reminders of the nation's sufferings and humiliations inflicted by foreigners. The search for a way to survival also constituted new visions such as "self-strengthening," "learning the superior barbarian technique with which to repel the barbarians," "using the barbarians against the barbarians," and "forming a united front against foreign

invasions." The call for "national liberation," recreation of an independent and sovereign China and restoration of the nation's prestige in the world became appealing to the Chinese people.

It was in the midst of this popular anxiety and aspiration for "a new China" that Mao Zedong (1893–1976) and his fellow revolutionaries emerged. Throughout his political career, Mao took as his primary goal the complete liberation of the nation from "imperialist" dominance. He and his comrades were determined that "a new China" should resume "her rightful place" among the nations.[8] In formulating a revolutionary line, Chinese Communist leaders undoubtedly learned from the contributions and writings of Marxist revolutionary leaders and other thinkers from various ages. But, it was from the rich Chinese experience of warfare, along with the long history of peasant uprisings and Chinese Communist revolutionary wars, that they obtained and formulated the essence of their military thought. CCP leadership's revolutionary line and military thought has invariably dictated the attitude and behavior of the PRC with regard to the threat and use of force.

(1) *The CCP leaders regarded the use of force as "the highest form" of revolution.*[9] As a Communist, Mao inherited a distinctively Marxist-Leninist war philosophy. He accepted class struggle as a framework in which to conceive the origins and nature of a modern war.[10] Based on the teachings of Engels and Lenin, Mao regarded war as "the highest form of struggle for resolving contradictions between classes, nations,

---

[8] Stuart Schram, *Mao Tse-Tung* (Baltimore, MD: Penguin Books, 1972), p.16.
[9] Mao Zedong, "Problems of War and Strategy," *Selected Military Writings of Mao Tse-Tung* (Peking: Foreign Languages Press, 1967), p. 269 (Hereafter cited as *SMW*).
[10] Xia Zhennan, "On the Relationship between War and Politics," *Mao Zedong Sixiang Yanjiu* [Studies of Mao Zedong Thought] 3 (1987), pp. 48–49. Also see Bob Avkian, *Mao Tsetung's Immortal Contributions* (Chicago: RCP Publications, 1979), pp. 39–40.

states, or political groups."[11] Accepting war's inevitability as long as there was a class struggle, Mao found war and politics closely related. Quoting Clausewitz that war is the continuation of politics, he asserted that "war is politics and war itself is a political action."[12] In his view, only by examining war from a political point of view could one fully understand the essence of warfare.[13]

The relationship between war and politics led Mao to believe that "victory is inseparable from the political aim of the war."[14] In his view, the common masses would only support a just war. Popular support would create "a vast sea in which to drown the enemy, create the conditions that will make up for [one's] inferiority in arms and other things, and create the prerequisites for overcoming every difficulty in the war."[15] Therefore, setting up political aims has remained a top priority for the CCP leadership whenever they use force.

(2) *The CCP leaders saw political mobilization and indoctrination as integral part of revolutionary war.* Mao defined political mobilization as a means of "telling the army and the people about the political aim of the war." It is absolutely necessary for every soldier and civilian to understand why the war must be fought and how it concerns his or her interests. To do so, Mao advocated popular and extensive war propaganda.[16] Given political mobilization's "immense importance," Mao among his fellow leaders had devoted enormous efforts to winning popular support in the civil war with the Nationalists. There existed a

[11] Mao, "Problems of Strategy in China's Revolutionary War" (December 1936), *SMW*, p. 78.
[12] Mao, "On Protracted War" (May 1938), *SMW*, p. 226.
[13] Ibid., p. 227.
[14] Mao, "Problems of Strategy in China's Revolutionary War," ibid., p. 81.
[15] "On Protracted War," ibid., p. 228.
[16] Ibid., pp. 228–29.

consensus among the leaders that the CCP's final victory owed a great deal to political and mass mobilization.[17]

The CCP maintained a long tradition of politicizing its armed forces. Mao himself had vehemently advocated for the party's absolute control of its army. To him, such control must be hinged upon "the system of Party Representatives" in the army, which was "particularly important at company level." With Party branches organized on a company basis, the Party Representatives would be able to "guide" the political training and indoctrination.[18] Mao found it imperative that all the military affairs be discussed and decided upon by the Party before being carried out.[19] Mao's teachings on political control and indoctrination have fostered a persistent institutional culture that has shaped the force and command structure of the People's Liberation Army. As a result, the political commissar system and CCP party committees fully operate in the military to this date.[20]

(3) *The CCP leaders regarded the human power, not weapons, as the decisive factor in war.* Mao maintained that military capability was where one's military strategic thinking should begin. Without downplaying the "objective conditions" such as weaponry, equipment, and other war materials, he placed greater emphasis on "subjective conditions" of war-waging capability, by which he meant the spirit, attitude,

---

[17] For how the CCP leadership stressed the importance of political mobilization, see Jiang Siyi, ed., *Zhongguo Renmin Jiefangjun Zhengzhi Gongzuo Shi: 1924-1950* [History of the Chinese People's Liberation Army's Political Work] (Beijing, 1984), pp. 1–94.

[18] Mao's report to the CCP Central Committee, "The Struggle in the Chingkang [Jinggang] Mountains" (25 November 1928), *SMW*, pp. 29–30.

[19] Mao, "On Correcting Mistaken Ideas in the Party," (December 1929), ibid., pp. 53–56. For a good Western study of the CCP's military and political command structure, see William W. Whitson, *The Chinese High Command: A History of Communist Military Politics, 1927–1971* (New York: Praeger, 1973).

[20] Jiang, *Zhongguo Renmin Jiefangjun Zhengzhi Gongzuo Shi*, pp. 90–95.

belief, political quality, and morale of the armed forces. Mao regarded war as the highest manifestation of a human's "conscious dynamic role" and the supreme test of the human spirit in transforming the objective world. "War is a contest of strength," he wrote in 1938, "but the original pattern of strength changes in the course of war. Here the decisive factor is subjective effort —winning more victories and committing fewer errors." Although the objective factors would make such a change possible, Mao thought, "in order to turn the possibility into actuality both correct policy and subjective effort are essential. It is then that the subjective plays the decisive role."[21]

The belief in human superiority has persistently gripped the Chinese leadership, the military and the nation. The slogans of "*Ren de yinsu di yi*" (The human factor is the first and utmost important) and "*Ren ding sheng tian*" (Man will triumph over nature) have dominated the psychology and mind-set of the leadership. Despite its recent emphasis on "*junshi xiandai hua*" (military modernization), Chinese Communist leadership's reliance on the human's conscious dynamic role in the forms of political and moral strength remains unaltered.

(4) *The CCP leaders believed that a weak nation could defeat a strong power*. Mao found in the history of war that wars were usually fought under only two circumstances: an absolutely strong power fought against an absolutely weak power, or a relatively strong power fought a relatively weak power. But wars were fought mostly among states of relative strong or weak military strength.[22] He then maintained that a transformation between the weak and the strong might occur in a dialectic manner.

[21] Mao, "On Protracted War," *SMW*, p. 235 (emphasis added).
[22] Liu and Shan, *Mao Zedong Junshi Bianzhengfa Yanjiu*, pp. 68-69.

This law of the unit of opposites, Mao believed, governed the change "from inferiority to parity and then to superiority."[23]

How would "inferiority" transform into "superiority"? Mao thought the answer lay in "each side's subjective ability in directing the war." Acknowledging that "in his endeavor to win a war a military man cannot overstep the limitations imposed by the material conditions," he argued that "within these limitations, however, he can and must drive for a final victory." Here, Mao believed it was "man's dynamic role" that determined the fate of war, because "whatever is done has to be done by human being [and therefore] war and final victory will not come about without human action."[24]

Mao discovered many instances in Chinese war history that supported his thesis. In the Battle of Chengpu (203 B.C.), the Battle of Kunyang (23 B.C.), the Battle of Guandu (A.D. 200), the Battle of Chibi (A.D. 208), the Battle of Yiling (A.D. 222), the Battle of Feishui (A.D. 383), he believed that the weaker states' conscious activity changed their military inferiority into military superiority.[25] Therefore, Mao had predicted that China would eventually defeat a more powerful Japan. He was confident that the PLA would prevail over the better equipped and outnumbered Nationalist army. He also optimistically calculated that the conventional Chinese forces could beat the "armed-to-the-teeth" U.S. military in Korea. Not surprisingly Mao's teachings on how a weak army could defeat a stronger enemy have spread all over the world, inadvertently stimulating numerous revolutionaries—Ho Chi Minh, Fidel Castro, and maybe even Saddam Hussein.

---

[23] "On Protracted War," *SMW*, p. 217. Also see Liu and Shan, *Mao Zedong Junshi Bianzhengfa Yanjiu*, pp. 68–71.
[24] "On Protracted War," *SMW*, p. 225.
[25] *n.r.*

This law of the unit of opposites, Mao believed, governed the change "from inferiority to parity and then to superiority."[23]

How would "inferiority" transform into "superiority"? Mao thought the answer lay in "each side's subjective ability in directing the war." Acknowledging that "in his endeavor to win a war a military man cannot overstep the limitations imposed by the material conditions," he argued that "within these limitations, however, he can and must drive for a final victory." Here, Mao believed it was "man's dynamic role" that determined the fate of war, because "whatever is done has to be done by human being [and therefore] war and final victory will not come about without human action."[24]

Mao discovered many instances in Chinese war history that supported his thesis. In the Battle of Chengpu (203 B.C.), the Battle of Kunyang (23 B.C.), the Battle of Guandu (A.D. 200), the Battle of Chibi (A.D. 208), the Battle of Yiling (A.D. 222), the Battle of Feishui (A.D. 383), he believed that the weaker states' conscious activity changed their military inferiority into military superiority.[25] Therefore, Mao had predicted that China would eventually defeat a more powerful Japan. He was confident that the PLA would prevail over the better equipped and outnumbered Nationalist army. He also optimistically calculated that the conventional Chinese forces could beat the "armed-to-the-teeth" U.S. military in Korea. Not surprisingly Mao's teachings on how a weak army could defeat a stronger enemy have spread all over the world, inadvertently stimulating numerous revolutionaries—Ho Chi Minh, Fidel Castro, and maybe even Saddam Hussein.

---

[23] "On Protracted War," *SMW*, p. 217. Also see Liu and Shan, *Mao Zedong Junshi Bianzhengfa Yanjiu*, pp. 68–71.
[24] "On Protracted War," *SMW*, p. 225.
[25] *n.r.*

Contemporary Strategic Policy

Mao's revolutionary line and military thought guided the CCP's struggle through different stages with many twists and turns. The majority of the Chinese Communists have attributed the founding of "a New China" in 1949 to Mao Zedong thought. More importantly, Mao's teachings on revolution and armed struggle have become the "established norms" to this date. It is hardly surprising that these norms have played a pivotal role in shaping the PRC's attitude and policy towards security issues.

Perception of Threat

CCP's oversensitivity of foreign interference and dominance has dictated Beijing's perception of external threat. For most of the PRC history, "anti-interventionism" and "anti-hegemonism" as defined by the CCP leadership have governed the way Beijing has perceived threats to the state. Beijing was primarily concerned about threats from "American imperialism" in the 1950s. That concern soon developed into strong opposition to both "Soviet Social-Imperialism" and "American Imperialism" in the 1960s and early 1970s. While it dropped its strong anti-American stance after the normalization of Sino–American relations, China continued to denounce Soviet expansionism through the early 1980s. Becoming less sensitive to "the threat from the north" after the Soviet Union collapsed, Beijing has reoriented its attention to the threat of "American interference."

Geopolitics, ideology, and the historical consciousness of foreign dominance all have played a crucial role in Beijing's threat perception. This role is best reflected in the ways the CCP leaders had conceived the danger of U.S. military intervention in the 1950s. Geopolitically, Mao's "intermediate zone" concept reasoned that, since the United States and the USSR were separated by "a vast zone which includes many capitalist, colonial and semicolonial countries in Europe, Asia, and Africa,

before the United States reactionaries have subjugated these countries, an attack on the Soviet Union is out of the question." Naturally, China must be one of these countries and probably among the first the United States intended to subjugate.[26]

In ideological terms, Mao saw the United States China policy within the context of imperialism. Believing that the shrinking of domestic and foreign markets caused capitalism irreconcilable contradictions, Mao saw the United States "sitting on a volcano." This situation, he predicted, would drive Washington to "draw up a plan for enslaving the world, to run Europe, Asia, and other parts of the world like wild beasts."[27] Mao and other CCP leaders also believed that the U.S. government was counterrevolutionary by nature: the United States intervened often on behalf of reactionaries. Important instances included Ward's "Ever-Victorious Army" in China that assisted the Qing regime against the Taiping uprising in 1860–1863, United States participation in the international intervention against the Chinese Boxer rebellion in 1900–1901, and intervention against the Bolshevik Revolution in Russia in 1918–1919.[28]

The CCP leaders for a long time distrusted United States policy toward China. Their few dealings with the United States in the 1940s made them feel cheated and humiliated. The Marshall mission of 1946, they at first believed, had been intended to mediate China's civil war impartially, but its outcome had not been in line with CCP expectations. "The policy of the U.S. Government is to use the so-called mediation as a smoke screen for strengthening Chiang in every way and suppressing the democratic forces in China through Chiang Kai-shek's policy of

---

[26] Mao, "Talks with the American Correspondence Anna Louise Strong" (August 1946), *Selected Works of Mao Tse-tung*, Vol. 4 (Peking: Foreign Languages Press, 1967), p. 99 (hereafter cited as *SW*).

[27] Mao, "The Present Situation and Our Tasks" (December 25, 1947), ibid., p. 172.

[28] Zhang, *Deterrence and Strategic Culture*, pp. 16–18.

slaughter so as to reduce China virtually to a U.S. colony," Mao explained.[29] The CCP leaders thus quickly jumped to a regretful conclusion: "[since] it was the first time for us to deal with the U.S. imperialists, we did not have much experience. Consequently, we were taken in. Now with the experience we won't be cheated again."[30]

Throughout the 1950s and 1960s Beijing had worried about "three dangerous spots": the Korean peninsula, the Taiwan Strait, and Indochina, where the CCP leaders saw the most likely United States armed actions against China. Early in 1949, Mao had warned the party that "the U.S. might send armed forces to occupy some of China's coastal cities and directly engage us [there]."[31] To him, the United States might execute its hostilities toward China in three ways: first, "they will smuggle their agents into China to sow dissension and make trouble"; second, "they will incite the Chinese reactionaries, and even throw in their own forces, to blockade China's ports"; and third, "if they still hanker after adventures, they will send some of their troops to invade and harass China's frontiers." All of these were "not impossible."[32]

To counter the perceived United States threat, Beijing chose to rely on Soviet protection. However, the CCP's alertness to Soviet dominance led to the Sino–Soviet split in the late 1950s, eventually causing Beijing to treat the USSR as the major potential aggressor. From the outset, relations between Mao and Stalin were full of mutual distrust. While Stalin suspected Mao to be another Tito, Mao feared that the USSR

---

[29] Mao, "The Truth about US 'Mediation' and the Future Civil War in China" (29 September 1946), *SW*, Vol. 4, p. 109.
[30] Zhang, *Deterrence and Strategic Culture*, pp. 18–19.
[31] CCP Central Committee document, "The Current Situation and Our Tasks in 1949" (8 January 1949), *Wenxian yu Yanjiu* [Manuscripts and Studies], October 1984, pp. 1–3.
[32] Ibid.

would always want to dominate China. [32] To obtain Soviet protection and assistance, however, Mao had to accept Soviet presence in China's Northeast and Xinjiang through a secret agreement in 1950 that China would "not allow the citizens of third country to settle or to carry out any industrial, financial, trade, or other related activities [there]."[33]

Mao, among other leaders, had ever since been haunted by this secret agreement. It reminded the Chinese of the unequal treaties that the West had forced the Qing emperors to sign. At a meeting with Mikoyan in April 1956, Mao referred to the secret deals on the Northeast and Xinjiang as "two bitter pills" that Stalin forced him to swallow. The following year he complained to Gromyko that "only imperialists" would think of forcing China to accept such a treaty. In his contempt for the agreement, Mao was determined to terminate the deal, when in 1958, he spoke of "two 'colonies,' the Northeast and Xinjiang, where the people of third countries were not permitted to settle down."[34]

Meanwhile, Mao disliked Moscow's intention to incorporate China's coast into its Far Eastern defense system. In 1958, Soviet minister of defense Radion I. Malinovsky suggested "jointly" building a powerful long-wave radio station linking the Chinese Navy with the Soviet Navy in the Far East. The USSR would provide the technology and most of the money needed.[35] Soviet ambassador to Beijing Pavel F. Ludin also proposed to Mao that the Soviet Union and China establish a joint fleet "for a common defense in the Far East."[37] The CCP leaders immediately

---

[32] Sergei N. Goncharov, John W. Lewis, and Xue Litai, *Uncertain Partners: Stalin, Mao and the Korean War* (Stanford: Stanford University Press, 1993), pp. 26–28.
[33] Ibid., p. 121.
[34] Ibid., p. 122.
[35] Letter from Malinovsky to Peng Dehuai (19 April 1958), *Dangdai Zhongguo Waijiao* [China Today: Diplomacy] (Beijing: Social Science Press, 1987), p. 112.
[37] Ibid., p. 113.

worried that the Kremlin might aim to control China militarily. Beijing responded that China would only accept the Soviet Union's technological assistance, no joint ownership.[38] Mao also told Ludin that "we will build [the station and the fleet] by ourselves and only with your assistance." He lectured Ludin that "if you want to talk about political conditions [of assisting us in building the fleet], we will never accept [your request]. You may accuse me of being nationalist, but I then can accuse you of bringing Russia's nationalism over to China's coast."[39]

The Taiwan Strait crisis of 1958 witnessed a turning point in the Sino–Soviet relationship. Counting on Soviet nuclear deterrence in the event of war with the United States, however, the CCP leadership deeply suspected Moscow's intention to control China, and deliberately kept the Soviets uninformed of its shelling of the Jinmen and Mazu offshore islands and declined Khrushchev's offer of nuclear protection.[40] After visiting the United States in September 1959, Khrushchev came to Beijing and criticized Beijing's "reckless" policy toward the United States. He pointed out that China's bombardment of the offshore islands had "created a big problem" for the USSR. He then requested Beijing to renounce the use of force against Taiwan, and implicitly pressured Mao to accept Taiwan's independence. Mao and other leaders were convinced that Moscow would accommodate Washington at the expense of China's interests, and Beijing could no longer rely on the USSR unless it was prepared to sacrifice its own sovereignty.[41]

Concerned for the threat from the two superpowers, the CCP leadership had prepared to fight in an "imminent, large-scale, and nuclear war" (*zaoda, kuda, dahezhanzheng*) from 1949 through the late 1970s. Consequently, PRC's defense and foreign policy had been, for most part,

---

[38] Ibid.
[39] Ibid., p. 114
[40] Zhang, *Deterrence and Strategic Culture*, pp. 254–56.
[41] Malinovsky, *Dangdai Zhongguo Waijiao*, pp. 115–16.

directed to finding ways to surviving, delaying, and ultimately preventing such a war. Even to this date Beijing has not relaxed its vigilance.

A Revolutionary State

In view of its place in the world, the PRC aspires to act as a leading revolutionary state in world politics. The Chinese had for centuries maintained the idealized vision that China was the center of the earth and world politics was evolving around it in a hierarchical way. The reality, though, was far crueler than perception, especially in recent time. From the moment that Mao proclaimed that "the Chinese people have thus stood up," he was determined to restore China's rightful place. Not surprisingly, China's aspiration has been to redress the international system.

Anxious to rid China completely of its humiliating image in the times of western pressure, the CCP leaders decided that the new regime would "refuse to recognize the legal status of any foreign diplomatic establishment and personnel of the Kuomintang period, abolish all imperialist propaganda agencies in China, take immediate control of foreign trade and reform the customs system."[42] In 1949–1950, the CCP established the two principles on foreign affairs: "making a fresh start," and "to clean the house first and then entertain [foreign] guests."[43] According to Zhou Enlai, these two principles were crucial "to clean up the vestiges of the influences of imperialism in order not to leave them spaces for their further activities."[44] As "the old China has been dependent on the imperialists not only in the economic sphere but also in the

[42] Mao, "Report to the Second Plenary Session of the Seventh Central Committee of the CCP," *SW*, Vol. 4, pp. 435–36.

[43] *Zhonggong Zhongyang Wenjian Xuanji* [Selected Documents of the CCP Central Committee], Vol. 15, (Beijing, 1985), p. 302, p. 308.

[44] Zhou Enlai, *Zhou Enlai Xuanji* [Selected Works of Zhou Enlai], Vol. 2 (Beijing: The People's Press, 1984) pp. 85–87.

sphere of culture and education," Zhou asserted, the Chinese people had been "exploited economically and polluted politically." In order to "expose and eradicate the evil influence of imperialism, we should neither rely on the imperialists nor be afraid of them."[45]

Aware that only the two superpowers in the postwar world had the potential to inflict serious damage upon China, Beijing has come around to playing the great-power triangle game. Given the hostile United States policy toward the PRC, Mao "leaned" to the Soviet side. Although ideological links and China's need for economic aid were important factors, national security was the key concern. "The basic spirit of the alliance treaty" that Mao had designed in January 1950 "should be to prevent the possibility of Japan and its ally [the United States] invading China," and "with the treaty, we will be able to use it as a big political asset to deal with imperialist countries in the world."[46] Ideology and economic leverage, however, did not forestall the collapse of the Sino–Soviet alliance in the late 1950s when Beijing increasingly feared the "danger from the north." As the Sino–Soviet friction expanded into mutual military buildup along the border first and then armed clashes in the late 1960s, Beijing immediately played the "American card." PRC's "Ping-Pong diplomacy" in the spring of 1971 resulted in the normalization of U.S.–China relations two years later and the openly declared opposition of Soviet "hegemony" in the Asia–Pacific region.[47]

While its ability to play in the superpowers' league has been limited, Beijing has wanted to be recognized as an important member of the society of states. This intention is evident in PRC's tenacious efforts to replace the Nationalist regime in the United Nations and other interna-

---

[45] Ibid., pp. 10–11.

[46] Telegram from Mao to the CCP Central Committee (2 January 1950), *Jianguo yilai Mao Zedong Wengao* [Mao's Manuscripts since the Founding of the People's Republic], Vol. 1 (Beijing, 1987), p. 215.

[47] Malinovsky, *Dangdai Zhongguo Waijiao*, pp. 217–224.

tional organizations. More importantly, from the mid-1950s through the end of 1970s, Beijing had devoted most of its attention to the relations with third-world countries. It was China's "international duty," Mao declared in 1956, "to actively support all the national independent and liberation movements not only in Asia but also in Africa and Latin America."[48] Beijing worked hard at portraying itself as a "true and reliable friend" of all the developing countries. During the Suez crisis of 1956, Mao told the Egyptian ambassador to Beijing that China would "do everything possible to support the Egyptian people's struggle to protect their sovereign rights over the Suez Canal." Whatever Egypt needed from China, he stressed, "we will provide if we have, and our assistance has no [political] conditions attached." To support Iraq against possible western intervention under the "Eisenhower Doctrine" in 1958, Mao decided to shell the offshore islands to divert U.S. military strength from the Middle East. Soon after Castro's revolution succeeded in Cuba, Beijing extended diplomatic recognition. To counter the growing threat of American intervention in 1960, Zhou Enlai cabled Castro that "if ever needed, the Chinese people and government will offer all the necessary assistance that Cuban people request for their struggle for independence and freedom." Despite its economic weakness, Beijing had provided a good number of countries extensive economic aid and dispatched a large number of "*yuan wai*" (aiding foreign countries) teams including military advisers, medical doctors, engineers, and agriculture experts.[49]

Beijing has wanted to represent the interests of the weak, the poor, and the oppressed. In the leaders' view, new China's foreign policy would be appealing to all the revolutionaries worldwide and the China factor would have to be counted. China has yet to be content with its influence and prestige in the world politics.

---

[48] Ibid., p. 128.
[49] Ibid., pp.128–134.

In conflict resolution, Beijing has consistently emphasized the demonstration of resolve and strength. Whenever under threat, the CCP leaders tend to act on the basis of "*yiyan huan yan, yiya huan ya*" (an eye for an eye and a tooth for a tooth). To them, China should never hesitate to use force as long as it acquires "*dao*" (justice or moral support). This belief is rooted in the old Chinese teaching "*dedao duozhu shidao guazhu*" (a just cause enjoys abundant support while an unjust cause finds little support). Therefore, CCP authorities have always made setting up political objectives for use of force one of their priorities. "*Kangmei yuanchao baojia weiguo*" (To Resist the United States and Aid Korea) became the political slogan for mobilizing domestic support and soliciting international sympathy during China's intervention in Korea. "*Fan di*" (anti-imperialism) and later "*fan ba quan zhuyi*" (anti-hegemonics) dictated the nationwide political campaigns throughout the 1950s and the 1960s. "*Renwu keren*" (we are driven beyond the limits of tolerance) and "*beipo fanji*" (we are compelled to strike back) served as explanations of Chinese use of force in the border wars with India (1962), the Soviet Union (1969) and Vietnam (1979). Almost every time China prepared to resort to violence in pursuit of foreign policy goals, Beijing would organize a series of public rallies and "mass demonstrations" in Beijing or other major cities to show popular support.

Beijing is inclined to treat international crises as not necessarily bad. The Chinese traditionally view crises in dialectical terms. The term "crisis" in Chinese stands for *shi* (a situation) embodying both *wei* (danger) and *ji* (opportunity). Mao genuinely believed that all crises were dialectical in terms of their strong and weak points, their advantages and disadvantages, their danger and opportunity. Thus, he considered any crisis to be both negative and positive, believing that a dangerous situation could be turned into an advantage. In many ways Mao adopted the Legalist principle "*bupo buli busai buliu buzhi buxing*" (there is no construction without destruction, no flowing without damming and no motion without rest). This preference in part explains

why China initiated the intervention in Korea in 1950 and the Taiwan Strait crises in 1954–55 and 1958. By initiating limited and well-controlled crises, Beijing expected to explicitly demonstrate China's resolve to counter international pressure. Before deciding to shell Jinmen and Mazu in 1958, Mao asserted that the reason why "Dulles looks down upon us [is] that we have not yet completely shown and proven our strength." So the best way to deal with the fearsome United States imperialists was to "demonstrate our boldness."[50] As Mao later explained, the decision to shell the offshore islands was based upon the thesis of "ghost's fear," which he had derived from *Liaozhai Zhiyi*, a traditional Chinese collection of ghost stories. "All the stories tell us only one truth," Mao stated, "that is, do not be afraid of ghosts. The more you are afraid of them, the less likely you are able to survive, and the more likely the ghosts will eat you up. We were not afraid of ghosts; and we bombed Jinmen and Mazu."[51]

The Chinese also have regarded the use—not merely the demonstration—of force as a final resort to international conflict. Although Sun Zi teaches that the best strategy is "to subdue the enemy without fighting," he clearly advocates taking short-term military action (fabin) to prevent the enemy from launching general war (famous). Mao and other CCP leaders perfectly understood Sun Zi's doctrine. Beijing's intervention in Korea, "tension diplomacy" regarding the Taiwan Strait, and Mao's "rope around the neck" strategy all reflected this Chinese calculation that short-term belligerency would serve long-term security.[52] Mao insisted on armed intervention in Korea because he could not tolerate waiting "year after year unsure of when the enemy will attack us." Beijing bombarded the offshore islands not as a prelude to an invasion

---

[50] Mao's speech at the Eighth Party Congress (23 May 1958), *Mao Zedong Sixiang Wansui* [Long Live Mao Zedong Thought], part 1 (Beijing, 1967), p. 217 (emphasis added).

[51] Mao's speech at the Sixteenth Supreme Conference for State Affairs (15 April 1959), Ibid., p. 290.

[52] Zhang, *Deterrence and Strategic Culture*, p. 96.

of Taiwan but to demonstrate that China would never concede United States dominance of the Taiwan Strait. Chinese troops actively engaged the Soviet force at Zhenbaodao in 1969 to send out a message that Beijing would not be bullied by Soviet clamor of nuclear "pre-emptive attack." More recently the Chinese counteroffensive against the Vietnamese was aimed at "teaching the little hegemony a lesson."[53]

Defense Doctrine

China has persistently adhered to the doctrine of "People's War" as the basis of its defense policy. The Chinese have traditionally stressed the importance of human power in war. Inheriting this tradition, Mao and his comrades formulated the People's War doctrine through their armed struggle. The doctrine has incorporated the central elements of guerrilla warfare, the use of protraction, and the political control and indoctrination of armed forces. Attributing its revolutionary victory to the line of People's War, the CCP has little doubt that China would eventually defeat any foreign invaders no matter how powerful they are.[54]

Having tasted modern warfare in Korea, however, from the mid-1950s to the early 1960s the military tended to want more modern technology without abandoning the doctrine of People's War. This new orientation bore the personal imprint of defense minister Peng Dehuai and Chief of General Staff Luo Ruiqing. But shortly afterward, they were accused of being "purely militarists," and had to step down. In 1965, the new defense minister Lin Biao published the essay "Long Live the Victory of the People's War."[55] Lin described the People's War as "a doctrine for the defense of China against various types of war ranging from a sur-

---

[53] Malinovsky, *Dangdai Zhongguo Waijiao*, pp. 106, 122, 285.
[54] Mao, "Our Great Victory in the War to Resist US Aggression and Aid Korea and Our Future Tasks" (12 September 1953), *SW*, Vol. 5, pp.115-18.
[55] Ngok Lee, *China's Defense Modernization and Military Leadership* (Sydney: Australian National University Press, 1989), p.140.

prise long-range nuclear strike combined with a massive ground invasion to a conventional ground attack with limited objectives." The doctrine was "premised on participation of the whole populace and mobilization of all the country's resources for as long as it takes to defeat any invader." The main objective of fighting a People's War against invaders was "to deter potential enemies by making it clear that any invasion of China would be a very expensive proposition and one with no chance of a satisfactory resolution." "*Quanmin jiebing*" (turning the entire population into a military force) had become a central element in China's defense policy through 1970s.

As China's foreign policy changed significantly in the 1970s, so did its defense priorities. Beijing adapted its strategic doctrine to the changing world, consequently constituting the doctrine of "People's War under modern conditions." Still stressing the human factor, the technology has been accorded with much more weight. The leaders have felt it imperative that China modernize its armed forces so as to improve both the conventional and nuclear capabilities. Since the late 1970s this new strategy has slowly but surely reoriented Beijing toward military upgrading. However, Beijing has continued to emphasize the need for relying on active defense in home territory, with greater attention given to an in-depth and three-dimensional defense system.[36] This change, however, entails no fundamental alternation in China's strategic preferences while allowing for changes at operational levels.

Beijing has invariably reoriented its active defense strategy. To the strategists, there should be an effective combination of tactical and guerrilla offense. Mao's principle of "luring the enemy in deep," an integral part of active defense, is still relevant. Nevertheless, modern conditions have made Chinese strategists downplay excessive "hit-and-run" tactics. Now attaching more importance to the defense of cities and

[36] Ibid., p. 148

industrial centers, China may not deploy militia units to surround the cities from the countryside."[57]

Undoubtedly, Beijing still stresses strategic defense in the initial stage of the war, because active defense consisting of positional, mobile and guerrilla warfare will enable the PLA to seize the initiative and reverse the fate of war. No matter how badly Beijing aspires to build a "blue-water navy," the core of China's defense is the nation's inner land with the "Great Southwest" (*da xinan*) as the last defensive line.

Nuclear Weapons

Beijing has maintained a revolutionary attitude toward nuclear weapons. When the CCP took power in 1949, its armed forces consisted of a large number of light infantry troops. Embarking upon its own nuclear program in 1955, the PRC has since become a major nuclear power. Interestingly, Beijing's learning of and attitude toward nuclear weapons have undergone a tortuous path. Mao at first did not believe that nuclear weapons fundamentally changed military and political realities. Proclaiming his famous thesis "All reactionaries are paper tigers" in 1946, he specifically regarded the atomic bomb as "a paper tiger, which the United States reactionaries use to scare people." Although admitting that the atomic bomb was "a weapon of mass slaughter," he maintained that "the outcome of a war is decided by people, not by one or two new types of weapon."[58]

Mao's contempt for the atomic bomb played an important role in China's intervention in Korea. Considering whether Chinese intervention might provoke U.S. atomic attack, Mao asserted in September 1950: "we will not allow you [the U.S.] to use the atomic bomb [against us]. But if you won't give it up, you may just use it." Even if Washing-

---

[57] Ibid., p. 150.

[58] Mao, "Talk with American Correspondent Anna Louise Strong" (August 1946), *SW*, Vol. 4, pp. 100–101.

ton might launch a nuclear attack on China, Mao insisted that "we will respond with our hand grenades. We then will catch your weakness to tie you up and finally defeat you."[59] Mao obviously saw the atomic bomb as having little military utility. The purpose of imperialist policy, he later explained, was exploitation and "the object of exploitation is man. If man is killed, what's the use of occupying soil? I don't see the reason for the atomic bomb. Conventional weapons are still the things."[60]

However, by the mid-1950s Beijing took a serious look at the danger of nuclear war. Mao now felt that nuclear weapons were becoming "real tigers." In 1958 he called for preparations for the worst outcome of a nuclear attack. "We have no experience in atomic war," Mao explained, "So, how many [people] will be killed cannot be known. The best outcome may be that only half of the population is left, and the second best may be only one-third." The party therefore should adopt a scientific attitude toward nuclear threat: "we are afraid of atomic weapons and at the same time we are not afraid of them. We do not fear them because they cannot fundamentally decide the outcome of a war; we fear them because they really are mass-destruction weapons."[61]

To counter the United States nuclear threat, Beijing decided to build China's own nuclear weapons.[62] Mao declared in January 1955 that

---

[59] Mao's speech at the 9th session of the Central Chinese Government Council, 5 September 1950, cited in Division of Military History, the Chinese Academy of Military Science, ed., *Zhongguo Renmin Zhiyuanjun Kangmei Yuanchao Zhanshi* [Combat History of the Chinese People's Volunteers in the War to Resist America and Aid Korea] (Beijing, 1988), pp. 6–7.

[60] Mao's speech at the meeting of regional officials, 12 December 1958, *Mao Zedong Sixiang Wansui*, p. 256.

[61] Commentary of *Renmin Ribao*, "To Watch for US War Preparations" (31 January 1958).

[62] Li Jie, Lei Rongtian, and Li Yi, eds., *Dangdai Zhongguo Hegongye* [China Today: Nuclear Industry], (Beijing: Social Science Press, 1987), p. 4.

"sooner or later, we would have to pay attention to the matter [of nuclear weapons]. Now, it is time for us to pay attention to it."[81] Mao stressed in 1956 that "in today's world, if we don't want to be bullied by others, we should have atomic weapons by all means." To him, "this is an issue of strategic policy." Naturally, Mao reassessed the value of nuclear weapons. "In essence, from a long-term point of view, from a strategic point of view," he believed, "[they] must be seen for what they are—paper tigers. On this we should build our strategic thinking. On the other hand, they are also living tigers, iron tigers, real tigers that can eat people. On this we should build our tactical thinking."[82]

Afraid that the superpowers' confrontations might drag China into war, Beijing's main concern is how to survive a general and nuclear war. China has voluntarily adopted the principle of no first use, and decided to rely on retaliatory second-strike capability. Beijing's "Guidelines for Developing Nuclear Weapons" of 1958 made it clear that China's developing nuclear weapons was "to warn our enemies against making war on us, not in order to use nuclear weapons to attack them;" and to this end, "we have no intention of developing tactical nuclear weapons."[83]

China's development of the bomb also aimed at breaking the nuclear monopoly of the superpowers. "If we are not to be bullied in the present-day world," Mao stressed in 1957, "we cannot do without the bomb."[84] At a special Politburo meeting of 1961, foreign minister Chen Yi insisted that China should develop nuclear weapons at any cost, "even if the Chinese people have to pawn their trousers for this pur-

---

[81] Mao, "On Ten Relationships" (25 April 1956), *Mao Zedong Sixiang Wansui*, pp.45–46.

[82] Mao's speech at a meeting of the Politburo of the CCP Central Committee held at Wuchang, 1 December 1958, *SW*, Vol. 5, pp. 98–99.

[83] John W. Lewis and Xue Litai, *China Builds the Bomb* (Stanford: Stanford University Press, 1988), p. 70.

[84] Mao Zedong, "On the Ten Major Relations," *SW*, Vol. 5, p. 288.

pose." He explained that "as China's minister of foreign affairs, at present I still do not have an adequate backup. If we succeed in producing the atomic bomb and guided missiles, then I can straighten my back."[67]

Mao simply would not accept the two superpowers' nuclear monopoly. In a letter to Khrushchev, dated June 6, 1963, he argued that the Soviet Union aimed at "maintaining dominance over other socialist states" by providing them with nuclear protection but not nuclear technology. "That is why you want to develop [nuclear weapons] alone and prohibit other brother states from building [the bomb] so that all the [socialist states] would obey you and you control [us] all." He thus declared: "The Chinese people will never accept the privileged position of one or two superpowers because of their monopoly of the nuclear weapons in today's world."[68] Learning of China's first successful atomic explosion on October 16, 1964, Mao asked Zhou to immediately release the "good news" to the world that China eventually broke the "nuclear monopoly of the nuclear powers." Beijing claimed that China's success in making nuclear weapons would greatly encourage the revolutionary people of the world.[69]

Indeed, Beijing encouraged other third-world countries to build their own atomic weapons. When asked at a press conference on September 29, 1965 whether China would share nuclear technology with other developing countries, Chen Yi referred to Mao's statement that "China sincerely wishes that the Asian and African countries would be capable of developing their own atomic bomb, [because] the more countries can build the bomb the better." What Mao meant, Chen explained, was that

[67] Cited from Lewis and Xue, *China Builds the Bomb*, p. 130.

[68] The CCP Central Committee to the Soviet Government, 6 June 1963, *Dangdai Zhongguo Waijiao*, p. 121.

[69] Statement of the Government of the People's Republic of China, *Renmin Ribao* (16 October 1964), p. 1. For the English version, see Appendix A in Lewis and Xue, *China Builds the Bomb*, pp. 241–43.

"as soon as the small and weak nations acquire their own atomic weapons, the nuclear monopoly would be broken, the one or two superpowers could no longer wave nuclear weapons to blackmail [us], and the nuclear overlords could not but sob out their grievances in the corner [of the world]."[70]

China's acquisition of nuclear weapons was unmistakably for national security. Mao adopted the conviction that nuclear weapons, with their tremendous psychological impact, were an integral part of deterrent strength. He had long held that a balance must exist between maintaining sizable regular forces to deter or repel conventional attack and building a small nuclear capability to deter nuclear attack. This had become a major theme that Mao stressed over and again through the 1960s. At different points, he stated that China's nuclear weapons "will not be numerous even if we succeed [in the strategic weapons program];" that "the success [of our strategic weapons program] will boost our courage and scare others;" and that "in any case, we won't build more atomic bombs and missiles than others." More important was his statement in the mid-1960s that China would adhere to the principle of "building a few [nuclear weapons] with small quantity but high quality" (*you yidian, shao yidian, hao yidian*).[71] Mao's instructions had been reflected in Beijing's official policies toward nuclear weapons in the 1960s and 1970s, and most of them remain in effect to this day.

Arms Control and Disarmament

Beijing's "revolutionary" attitude toward nuclear weapons invariably affected its policy toward nuclear arms control. Arms control, to the

---

[70] Hu Sisheng, "One Word to Shock the World: Comrade Chen Yi at a Press Conference," in *Huiyi Chen Yi* [Recollections of Chen Yi] (Beijing, 1980), p. 215.

[71] Xue Litai, "Chinese Nuclear Strategy," paper presented at the workshop on Strategic Culture and China, 13 May 1992, Ohio University, Athens, OH, p. 2.

Chinese, is a "game" that Westerners have been playing in various guises and for different purposes. Therefore, they see the concept of achieving formal international agreements on arms reduction as part of the old and conventional world politics. Understanding this issue within the context of "colonialist" or "imperialist" legacies, Beijing has been unwilling to accept any form of nuclear arms control. Strongly believing that international rules and norms have been made by the powerful to control the weak and by the old to control the young, the Chinese would not be a party of any international arms control program unless "the superpowers reduce and abolish their nuclear arsenals first." Regarding arms control merely as a "charade to slap them down and to maintain the status quo," Beijing has not recognized the necessity for formal multilateral nuclear arms control agreements.[72] Instead, it shows preferences for informal and bilateral arms controls.

Conclusion: Change and Peace

In the final analysis, Beijing has maintained a revolutionary attitude and behavior toward threat and use of force. This PRC strategic culture is deeply rooted in the nation's history of warfare, recent experience of foreign "humiliation," rebellious and revolutionary ideology, and CCP's long armed struggle for political power. It definitely bore the personal imprint of Mao Zedong, one of the greatest revolutionary leaders of our time.

The PRC's revolutionary line of warfare has transcended the regime's foreign and defense policy. However, the extent of its impact should be measured not only in terms of Beijing's great power aspiration but also in the context of China's defense posture. Despite its long sustained aspiration to challenge and change the existing international system and play in the great-power league, Beijing has been preoccupied with how

[72] Gerald Segal, *Rethinking the Pacific* (Oxford: Clarendon Press,1990), pp. 268–69.

it could restore an international respect for the new China, best defend itself and survive another general war, probably nuclear. Despite the self-serving nature of the People's War doctrine, the CCP leaders have wanted to make the best of China's natural and human resources which are all they could rely on. Despite its revolutionary rhetoric, frequent use of force to resolve international conflicts, all-out support to third-world countries' national liberation and vigorous pursuit of nuclear weapons, Beijing has adhered to a defensive posture and relied on deterrence by denial of victory to aggressors.

Beijing's oversensitivity of foreign dominance has geared the country toward the construction of national security. From 1949 to the present, the CCP launched numerous political campaigns partly because of its concerns over external threat. The "Three-Antis, Five-Antis" of 1951–53 aimed at mobilizing the nation's resources for the war in Korea. The Great Leap Forward and People's Commune Movements in 1958 intended to further release the productive energy of the society so as to "*chaoying gaomei*" (overtake Britain and catch up America) in industrial production. CCP's call to "*ge ban minbingshi*" (organize contingents of the people's militia on a grand scale) and "*quanmin jiebing*" (to turn every citizen into a soldier) was to prepare the nation for potential nuclear attacks. This was reinforced by the slogan of "*Beizhan beihuang weirenmin*" (be prepared against war, be prepared against natural disasters, do everything for the people) in the early 1970s. As a result, the bulk of resources—human and natural—were devoted to arms expansion and modernization. Indeed as political control and indoctrination has extended to every corner of the society, the whole society and economy was virtually militarized.

China now no longer believes that war is imminent. Its reliance on peacetime war preparation indicates that China takes a more optimistic, yet realistic, view toward probable threat to national security. Ding Xiaoping's assertion of the early 1980s that global war would break out for the rest of this century set the tone for the post-Mao foreign and

defense policy.[1] Beijing continues to stress independence and self-reliance, thus distancing itself from alliances that may cause shifts in the global strategic balance. The current regime seems apt to utilize international interdependence as a means of maintaining the regional stability, and justifies its open door policy by claiming that it serves "the fundamental interests of the people."[2] Stressing the need for military modernization, China restructures the armed forces, purchases advance technology and equipment from the West, and enhances the troops' ability to fight in a modern war.

Nevertheless, power changes but historical consciousness persists:

(1) *The CCP's sense of insecurity remains strong.* While talking about the peaceful international environment, Beijing emphasizes that China could no longer remain poor, weak, and backward. In addition, it must not waste time in the pursuit of "Four Modernizations" (industrial, agricultural, science and technological, and military) so that China could retain its "*qiu ji*" (membership in the community of states)

(2) *Beijing's perception of threat continues to be shared by the image of foreign pressure.* Much less vigilant toward external threat, China has been closely watching the potential dangers of the United States as a global policeman, Japan as a military power, Vietnam as a regional hegemony, India's expansion, and even the rise of Russian influence. Beijing's strategic priorities bear the memories of foreign challenges in the recent past.

(3) *With China's geographic map in mind, Beijing keeps worrying about the vulnerability of China's coast.* Keenly aware that foreign invasions almost all had come from the sea in the past century, the Chinese military vigorously calls for the strengthening of maritime defense. Unsatisfied with China's coastal defense capability, the Peo-

[1] Lee, *China's Defense Modernization*, p. 121.
[2] Ibid., pp. 122–23.

ple's Navy in particular aspires to become a "blue-water" navy. China, it claims, will no longer be "*youhai wu fang*" (possessing waters but with little coastal defenses).

(4) *The CCP's ideology and political traditions remain dominant in the military.* While pushing for military modernization, Beijing has no intention to professionalize the armed forces. The party's control and political indoctrination have been intensified especially after the crackdown of the democratic movement in the summer of 1989 and the collapse of the Soviet Union in 1991. The principle of "*dang zhihu qiang*" (only the party commands the guns) has been recently reconfirmed by the CCP leadership as the only guidance to the civil–military relationships.

(5) *While calling for peaceful resolution of international conflict, Beijing would not hesitate to resort to violence to protect its interests.* Increasingly concerned about Taiwan's independent tendency, the CCP leaders have constantly signaled that force will be used to prevent that possibility. With the tensions along the northern border (with former Soviet states) relaxed, the PRC has strengthened the western borders defense. The forces stationed along the southern coast have maintained a high level of alertness to further development of the conflict concerning the islands in the South China Sea. Taking "face-value" rather seriously, however, Beijing will find justifiable causes before using force.

(6) *China will remain a nuclear power.* Originally aiming to break the superpowers' nuclear monopoly, though, Beijing may not actively participate in the nuclear arms race. Given its intention to maintain minimum but sufficient nuclear deterrent capability, the PRC adheres to the principle of "no first use," and continues to stress its ability to survive major nuclear attacks and conduct a protracted war under nuclear conditions without surrendering. However, Beijing watches closely Asia's nuclear proliferation. India's nuclear programs and the likelihood that North Korea, Japan and even the former Soviet states in

Asia become nuclear seem in particular worrisome. These concerns may compel China to join the international arms control efforts but toward bilateral and small-scale multilateral agreements.

Although the current regime stresses the need to "connect China's track with that of the world's" (*yu shijie jie gui*)—although not necessarily toward common security—the PRC strategic culture will continue to shape China's foreign and defense policy. Beijing's persistence on a Chinese-style modernization makes it unlikely that the spread of modern technology and western civilization would alter China's strategic culture.

Discussion

The discussant for the presentation was **Professor Jon Sumida** (Department of History, University of Maryland at College Park [UMCP]).

Sumida said that his talk would address three topics: the *utility of historical analysis* with respect to the consideration of current policy; the *relevance of the Japanese experience* in the first half of the 20th Century to the question of whether China will become a serious threat to American security; and *Zhang's historical review* of strategic culture.

Sumida entitled his first topic "Policy and Prediction" and presented as an example the case in which William Pitt, the British Prime Minister, in February 1792 predicted in an address to Parliament that the next fifteen years would be ones of peace. He was resoundingly wrong, as the French Revolution began two months later. He followed with other examples, also illustrating the *errors that can be made when mirror imaging and historical analogy are used to predict when one is in the midst of a significant shift in paradigm*. He likened this to the evaluation of a potential opponent without understanding that the game is changing from basketball to soccer.

On the *relevance of Japan* as a case study, Sumida pointed out that Japan is often perceived as a backward country that suddenly modernized to become a threat to world powers. He said that certain qualifications must be kept in mind when considering that characterization. First of all, Japan was actually culturally very advanced in the 19th century, with a coherent national authority, high literacy, considerable urbanization, and public works. Second, Japan's early military success was in part due to British financing and arms, as the British saw Japan as a client serving British security interests in the Far East. Third, Japa-

nese xenophobia was based on a perceived threat to its cultural identity, not just its military and political security.

The ideology of "techno-nationalism" was derived in part from samurai tradition, which supported a military disciplined to the point of fanaticism, enormous economic and personal sacrifices, and the ability to accept large losses of forces. Up to 1918, Japanese victories were over second-rate military powers; from the 1930s on, they were facing an initially weakened Britain prior to the mobilization of the United States in World War II. The increases in military and economic power in the 1930s were extremely rapid, but in 1937, its war potential, although larger than Italy's, was on a manufacturing base smaller than Italy's, and was based on high and unsustainable amounts of borrowing and a very low standard of living of its population. Thus, the *circumstances under which Japan rose quickly to prominence were complex and specialized, and this fact limits the relevance of the Japanese experience to other situations*

Commenting on Zhang's paper, he found most illuminating the characterization of Chinese strategic culture as having two poles, the *Legalist* and the *Confucian*. The Legalist tradition may be similar to the Japanese techno-nationalism. In conclusion, Sumida suggested thinking predictively not only about capabilities, but also about the *changing nature of how states interact with each other*. For example, whether China will be a military threat to the United States depends on the nature of the (now evolving) world order, and how the Chinese perceive that order.

A long discussion followed. Much of it centered on whether the offensive or the defensive side of China's strategic culture should be seen as dominant.

William Niskanen (Cato Institute) brought up the differences between Han and Mongol cultures: the first never sent forces across borders, while the second sent major forces to the Middle East and Eastern Europe. **Zhang** agreed that the Han culture was primarily defensive, and

said that the Mongols, also the Manchus, were assimilated by the Hans, with the result that defense was the primary stance in northern China, but there was expansion in the south.

Martin Whyte (Department of Sociology, George Washington University) said that since 1949 there have been instances where the Chinese could have resorted to force but did not, where their behavior has been more cautious than their rhetoric. He did not see intensified militarization occurring in China at present.

Li pointed out that economic objectives do not require military action in order to be achieved. **Zhang** mentioned that there had been a plan to take Hong Kong by force, but China preferred to use it for economic reasons. It is considered important, however, to protect China's sea lanes, and that could in principle involve force. **George Quester** (Department of Government and Politics, UMCP) pointed out the need to differentiate between the policy and the actions of the Chinese military. For instance, the PLA may be more interested in joint economic activities in South Korea than in defending North Korea in case of another Korean conflict. **Roger Cliff** (RAND Corporation) emphasized that strategic culture can be multifaceted, and that military actions can be used to make political statements as well as determine actions. He added that China's emphasis on self-sufficiency may make it more likely that China would take an aggressive military posture. He pointed out that the claim to the Spratly Islands is legitimate and hardly "expansionist," but is linked to China's future dependency on imported oil and its perceived vulnerability in this regard.

There was further discussion of China's offshore military aims. **Erland Heginbotham** (Institute for Global Chinese Affairs, UMCP) pointed out that the greater dependency on Middle Eastern oil that would result from greater economic growth would make the Straits of Malacca increasingly important for China and possible conflict with Indonesia a greater possibility. **Thomas Schelling** (School of Public Affairs, UMCP) said that the Chinese fleet would be counterbalanced by U.S.

naval power, which would enforce freedom of the seas for all. **Zhang** said that the navy will take the lead in military development in China: there have been a series of conferences in Beijing about the future of the navy. The coastal area is the richest in China, and trade, investment, and even migration to Southeast Asia makes it imperative to protect the coastal area and the seas around Southeast Asia. There is a consensus in China that Taiwan's value is strategically related to the need to safeguard southern expansion.

Niskanen asked whether the mainland Chinese link with the overseas Chinese is strong enough to counter antipathy to the Chinese in Malaysia, Indonesia and the Philippines. **Cliff** insisted that there were no Chinese territorial ambitions beyond the Spratly Islands and Taiwan. However, overseas Chinese visiting China are treated differently from other foreigners. **Douglas Nyhus** (INFORUM, UMCP) said that the ability of the Chinese military to get the resources they need was subject to different conditions than in Japan in the 1920s and 1930s, where the Japanese military could veto government decisions and appoint their own ministers; they even assassinated a Japanese Minister of Finance opposed to expanding their resources. The PLA, in contrast, was partly self-supporting, which moved them partly beyond the purview of the central government. **Zhang** said that the army in China has always been economically self-sufficient throughout its history, but that the Communist Party still controls the army now.

Chapter V
Summary Discussion

Thomas Schelling

Professor Schelling (School of Public Affairs, University of Maryland at College Park [UMCP]) was the final speaker. He suggested several topics for further discussion, pointing out that most of the time had been spent talking about military intentions rather than military capacity. He suggested *focusing on the capability of countries to cause headaches for the major powers*. Between the United States and China, Korea is the most likely area of confrontation (the entire postwar period was slanted by MacArthur's mistake of pushing to the Yalu River.) One has to think out particular scenarios and what kind of Chinese capabilities they imply. Among relevant questions are the following: What are we most afraid of China doing? What does the United States want to do in the Far East that China would interfere in? What might China do to intimidate Taiwan or get Taiwan to surrender? Would the United States ever have reason to attack Chinese bases? Do we have to worry about Chinese submarines, mines laid, air capability? What actions would we expect of China if they ever felt compelled to deter military action by the United States? Would China ever attack U.S. forces? The U.S. homeland? The Japanese homeland? Kazakhstan? Malaysia or Indonesia? For all these questions, one would need to figure out the capabilities required to carry out such actions, or to deter the United States from effectively interfering with their plans.

Schelling also suggested that it was very important to ask whether the Chinese government, given nuclear weapons, would *share the apparently universal taboo* on their use.

Prompted by discussions of discipline as a cultural attribute, he asked what it would take for China to develop a *blue-water navy* — whether a tradition could be built up quickly, or whether the appropriate respect for command would need to be cultivated over several generations.

Schelling's final point was also inspired by the idea of deeply rooted cultural traditions, and in particular by S. L. A. Marshall's reports of significant variation in the fractions of infantrymen of different nationalities who ever fired their weapons during World War II. He questioned whether the existence of *ethnic minorities in western China*, which may have different traditions, would make it more or less likely that China could launch an invasion of its neighbors from that region. Also, were there ethnic groups in China either particularly good at fighting or unwilling to fight?

In the discussion that followed, the question of willingness to fight was followed up by others. **George Quester** (Department of Government and Politics, UMCP) said that high-tech warfare might make the ability to fight less crucial. China does not have a strong military tradition, unlike the Indian army, where soldiering passed from generation to generation, and the Nepalese Gurkhas, who had a special tradition of ferocity. **David Segal** (Center for Research on Military Organization, Department of Sociology, UMCP) and **Jon Sumida** (Department of History, UMCP) said that there had been questions raised about S.L.A. Marshall's data. **Sumida** pointed out that cultures of fighting change over time: for example, kamikazes would now be impossible in Japan. **Schelling** pointed out that the absence of kamikazes in the United States doubled the need for fuel for its airplanes in World War II.

On strategic aims of China, **David Li** (Department of Economics, University of Michigan) said that the Taiwanese issue was the most dangerous, while there was little Chinese interest in North Korea or in defending the overseas Chinese, and the chances of conflict in Kazakhstan seemed remote. **Shu Guang Zhang** (Department of History, UMCP) said that the danger of the Taiwanese situation was that China

was not so much threatened by Taiwanese independence per se as by the possibility that an independent Taiwan could offer use of its ports as bases for other powers (United States, Japan). This possibility could lead to a pre-emptive strike by China and United States retaliation. The Chinese leaders also thought that creating economic interdependence with the United States and keeping U.S. forces in the Western Pacific meant that the United States was more vulnerable. **Anthony Lanyi** (IRIS Center, UMCP) asked why this did not make the Chinese equally vulnerable. **Zhang** answered that it was because the United States valued the lives of its personnel more than the Chinese did.

Roger Cliff (RAND Corporation) and **William Niskanen** (Cato Institute) raised the issue of how Great Britain at the end of the 17th century and France at the end of the 18th century were able to revolutionize their ability to organize themselves for war by borrowing large amounts of money. **Mancur Olson** (IRIS Center, UMCP) said that in the case of Britain, this was because of the shift from Stuart absolutism to control by the moneyed classes through Parliament. With regard to intentions, Olson said further that it was difficult to imagine adventurism by the Chinese government, but the Saddam Hussein episode did make one worry about the possibility of a completely unpredictable, mad dictator taking control.

SECTION THREE

ORGANIZATIONAL CAPACITY AND MILITARY DEVELOPMENT

- ***Chapter VI: Military Involvement in the Civilian Economy***

"The PLA and the Private Economy"
Presented by Professor George Quester, University of Maryland at College Park
Professor Dali Yang, University of Chicago, *discussant*
Professor Hongying Wang, San Diego State University, *discussant*

- ***Chapter VII: Societal Factors in Developing Military Capacity***

"Social Trends and Military Capacity in China"
Presented by Professor Martin Whyte, George Washington University
Professor Richard Samuels, Massachusetts Institute of Technology, *discussant*

- ***Chapter VIII: Summary Discussion***

Chaired by Professor Stansfield Turner, University of Maryland at College Park

Chapter VI
Military Involvement in the Civilian Economy

The PLA and the Private Economy

George Quester

Americans, and many other people in the outside world, are understandably concerned about the future military policies of Communist China. The spread of democracy is now generally taken to be a reassurance against military confrontations and conflict, but such a reassurance is not yet at work for mainland China, since the political process in Beijing continues to be monopolized by the Communist Party, so that the People's Republic of China is thus still very far from being a political democracy.

There are grounds for optimism in the economic liberalization that has occurred since Deng Xiaoping succeeded Mao Zedong, as the PRC has shed most of its Marxist ideology on how an economy should be run. Such a liberalization and restoration of markets is welcome because it greatly enriches the quality of life for ordinary Chinese, and because it may well, over time, bring about a political liberalization as well. Mainland China is already today a much freer place than it was in the days of the Great Leap Forward or the Great Cultural Revolution.

Yet the same economic growth can be harnessed to military power, rather than to consumer spending. Those concerned about China as a possible future adversary need only project forward the economic

growth rates that have been achieved under Deng, and to note how the expenditures on the People's Liberation Army, the Chinese Communist armed forces, will also now be growing.

If mainland China becomes militarily much stronger as part of becoming economically richer, and if it does not evolve into a democracy in the process, the risk is that all of China's neighbors, and any power with responsibilities in the Far East, most importantly the United States, will be confronting a serious military threat.

One can thus find analyses that project a very major security problem for the future, in confrontations between the United States and mainland China, based on the growth of the Chinese economy, and consequent growth in the strength of the PLA. Even if the Chinese Communists shed their Marxist ideology, they may now try to base their monopolization of political power on Chinese nationalism, reactivating old grievances that most Chinese may feel about the days of imperialism, setting stages for military crises even where there are no ideological issues of class struggle involved anymore.[1]

One can also find contrary analyses that dismiss such alarm as badly founded, pointing out how technologically backward the PLA has become in the 1960s and 1970s, noting that the PLA has actually been declining in the fraction of the Chinese economic total at its disposal. The GNP of mainland China is growing, and the nominal military budget of the PLA is growing, but the latter is growing at a slower rate than the former.[2]

We indeed hear PLA officers regularly complaining that in terms of salary and such things as general living standard and quality of housing

---

[1] For a worrisome analysis, see Richard Bernstein and Ross H. Munro, *The Coming Conflict With China* (New York: Knopf, 1997).

[2] A more reassuring view is presented by Andrew J. Nathan and Robert S. Ross, *The Great Wall and the Empty Fortress* (New York: Norton, 1997).

they and their soldiers are falling dramatically behind their countrymen, behind their high school and college classmates who went into the burgeoning Chinese private sector, rather than into the military.[3]

Chinese military planners may indeed be planning to enhance their future ability to do battle, to liberate Taiwan, and to defend islands disputed with Vietnam or Japan. But at this stage they may also be very intent on enhancing their comparative purchasing power, and their ability to recruit officers and enlisted men, against the competition of the opportunities opening up in the deregulated private economy of the Chinese mainland.

The Issue of Private Business Activity

Having said this much in summary of a larger debate about the future of Chinese foreign and military policy, the purpose of this paper is to sort the implications of a very particular aspect of the PLA's development. To be specific, the PLA has become a major participant in the private economy, involved in a great number of business ventures that have little or no relationship to preparedness for armed combat.[4] This participation of the PLA in private business had the support and encouragement of Deng Xiaoping, at least at its early stages. The Chinese military leaders, complaining of their lack of funding and inability

[3] Data on the incomes and living standards of PLA personnel is offered in David Shambaugh, "China's Military in Transition," *China Quarterly* 146 (June, 1996): pp. 265–290.

[4] For some overviews of the PLA's involvement in nonmilitary business ventures, see Paul Humes Folta, *From Swords to Plowshares: Defense Industry Reform in the PRC* (Boulder, Colorado: Westview, 1992), and Tai Ming Cheung "Elusive Ploughshares," *Far Eastern Economic Review* (October 14, 1993): pp. 70–71. See also Solomon M. Karmel, "The Chinese Military's Hunt for Profits," *Foreign Policy* 107 (Summer, 1997): pp. 102–113.

to purchase the latest in military technology, were told that they could have more if they earned the hard currency to pay for it.

This entire, possibly bizarre, development is nicely encapsulated by a quote from a PLA General's speech exhorting his officers, the capstone sentence being "Any army that can't make money isn't a very good army."

Outside observers might have welcomed such a formula for most of the other institutions coming out from under the Marxist ideological straightjacket, for example, the steel industry, the railroads, or the agricultural sector. But one gets into a very different set of considerations when the object of "deregulation" or "privatization" is the core of the state, the capability for armed conflict.

As the PLA's involvement in business threatened to get out of hand, the central authorities in Beijing have at several points issued orders to curb it and rein it in, apparently with uneven success. Beijing imposed new rules in 1989, and then a "rectification" in 1993, requiring that some ventures be transferred over to the ownership and custody of local governments, and that such ventures not be undertaken at any levels lower than that of an army division.[5] The evidence is uneven on whether this directive has been so very effective. By some accounts, about one-third of the existing ventures (perhaps some 5,000 separate firms) were closed down as a result. Yet the actual numbers of firms in which components of the PLA had invested have all along been vague, and the gains, open or corrupt, of making money in such ventures continue to be great.

---

[5] On these efforts to rein in the PLA, see Min Chen, "Market Competition and the Management Systems of PLA Companies," in Jorn Brommelhorster and John Frankenstein, eds., *Mixed Motives, Uncertain Outcome: Defense Conversion in China* (Boulder, Colorado: Lynne Reinner, 1997), p. 208.

The Extent of the Activity

The involvement of the Chinese military in nonmilitary business very much outstrips what one has seen in the other powers that one ever worried about as a military threat. We shall at the end of this analysis look at some possible parallels abroad, for example, the military's business role in Indonesia or Argentina, or the activities within the United States of our own Army Corps of Engineers, or the Japanese Self-Defense Force's ownership of very nice hotel space in Tokyo.

The PLA indeed owns hotels, a fair number of them, and it is producing men's clothing, and it owns a chain of Baskin-Robbins ice cream outlets. It is involved in the production of goods that *might* have military use, for example, motor vehicles or pharmaceuticals, but it is very heavily involved in the production of goods that could be described as military only by the wildest stretch of the imagination.

Some of the transformations have been fairly straightforward, as Chinese Air Force aircraft are used to fly passengers (in a venture labeled "China United Airlines"), and Chinese naval vessels deliver private cargoes, and military hospitals admit privately paying patients. But other ventures involve a substantial shifting of capital resources, or the retraining and refitting of military personnel for very nonmilitary duties. There are estimates that the PLA has indeed been involved in some fifteen to twenty thousand of such separate business ventures.* The real totals, as with many other details and facts about the Chinese Communist military, are difficult to pin down (the official Chinese government figures speak of only 10,000 such business ventures involving the military), and it is not easy to tell what size some of these smaller businesses will be that have been purchased, wholly or partly, by the PLA. But few outsiders would have guessed at totals anywhere near so large.

* Estimates of the totals of such business partnerships can be found in Karmel, op. cit., p. 105, and Shambaugh, op. cit., p. 277

There are estimates that in 1979 some 8 to 10 percent of the PLA's total activity was devoted to producing nonmilitary products, but that this had passed the 50 percent level by 1987, and was up to perhaps 80 percent by 1994. Again, while the exact numbers are not easy to calculate, and the importance of a particular index may be difficult to judge, the overall drift of what has been happening here would seem to be quite staggering.

In another index which is again difficult to measure and corroborate, the income flowing back to the PLA from the profits of such business ventures has sometimes been calculated to be larger than their actual appropriations from the state (some of us might sense almost an eerie resemblance to a state university which gets more of its operating funds from private grants than from state appropriations).

What will follow now is an attempt to draw together all the possible implications of this "privatization" of the Chinese Communist armed forces. We will be watching for the clues this development might offer on the bigger question concerning us from the outset, whether the PLA will be a major threat to the outside world, and to the United States in particular, in the future.

But Americans historically have not only been concerned about China as a potential power adversary, for there is a long tradition of altruistic concern for the welfare and happiness of the Chinese people themselves. We will thus also be looking for clues about what this development might predict for the political, social and economic development of the mainland.

The venture into private economic dealings, authorized and encouraged initially from the very top of the Chinese Communist leadership, was intended to increase the total budget of the PLA, without drawing more on the national budget of the PRC in general. To the extent that the business ventures have been successful, one might then conclude that this has occurred.

It has always been difficult to pin down what the real budget of the Chinese military has been, with the officially declared figures substantially understating what is happening.[1] The addition of revenues not in the budget, the profits and returns of the investment, would, at least over the longer term, add to the discretionary funds that the military leadership can apply toward modernization.

But, at the same time, one must take into account the ongoing commitment of PLA resources, human capital and other capital to the businesses involved, not just in owning and managing such businesses, but in operating them. This would mean that the percentage of the total of PLA personnel actually ready for anything like combat would have to be reduced, as someone engaged on a day-to-day basis in the selling of ice cream or production of men's clothing does not enhance military capabilities.

Also affected here would be a broader (and slightly more difficult to define) dimension, that of military professionalism. "Professionalism" can mean many things, as the contexts of discussion vary, including absences of corruption, and absences of temptation to interfere in political decisions. More positively, it would also mean that the military

[1] The difficulties of assessing Chinese military budgets are outlined in Wang Shao Guang, "Estimating China's Defence Expenditure," *China Quarterly* 147 (September, 1996): pp. 889-911.

officer can be counted upon to be psychologically and physically attuned to possibilities of warfare, rather than being distracted by other vocational specialties.

To offer a homely example, away from our subject, a dentist who spends most of his time authoring detective stories would be viewed as less professional by his fellow dentists. Similarly, an infantry officer who spends most of his time operating a hotel would be less impressive professionally as an infantry officer.

The difficulty of assessing the true budget of the PLA has confounded analysts, to the point where estimates range from 1.5 times the declared budget to 15 times this budget.[8] In addition to the officially stated figures for defense spending, one must include "off-budget" spending by the national government and provincial governments dedicated to the military. And one must now also include that part of the returns from the PLA's private investments that flow back to become available for national defense purposes.

Included in the latter would be the gains from barter agreements with other portions of the Chinese economy, in which goods or services are exchanged for inputs enhancing military strength, and similar barter agreements with foreign countries, for example with Russia, by which modern aircraft or other forms of military hardware are obtained. Yet it has to be noted that the trend toward marketization in China, and around the world, is also a trend toward the avoidance of barter agreements, the agreements that were so characteristic of the old Communist economies.

The PLA will find it more difficult now to acquire weapons by means of barter arrangements. And, domestically within China, it increasingly

[8] On the range of budget realities, see James Harris, "Interpreting Trends in Chinese Defense Expenditures," in *China's Economic Dilemmas in the 1990s*, Vol. 2 (Washington: U.S.G.P.O., 1991).

is required to purchase the inputs to its military readiness on the market at market prices, rather than being guaranteed such resources automatically by state decision.[9]

The move toward a market economy in China thus may hinder the PLA's combat readiness more than it helps, even when the military is able to exploit this market somewhat by participating so actively in it.

The returns from the PLA's investments in private business can indeed move toward as many as five destinations. As noted, they can be used as fungible resources for the production of a military end product, increasing the ability of the PRC to engage in combat. Such returns can also be reinvested in the businesses from which they are derived, perhaps generating larger income flows for the PLA into the future. Similarly, such returns can amount to a capital accumulation utilizable for other investments.

Such resources also can be used (and the evidence is that this may indeed have become the principal use) to enhance living conditions for the personnel of the PLA. Where housing and other benefits would otherwise have declined (or would have relatively declined, compared to the dramatic rise in living standards for the Chinese outside the military) such a compensation for the officers and personnel of the PLA might be seen as an indirect reinforcement for combat readiness, or at least a barrier to excessive decline, as otherwise it would become still more difficult to recruit quality personnel for the PLA. But the net impact on combat capability might not be so very positive, if the money is being spent mostly on such things as family housing.

---

[9] The importance of the marketization of the PLA's normal procurement process is noted in "PLA Logistics Department Rationalizes Supply," *China News Service* (15 October 1994); *Foreign Broadcast Information Service* (1 November 1994).

Finally, much of the income from the PLA's investments may be going elsewhere than to where the rules and laws would have provided, as one more form of corruption shows up in the new China.

Again, if the only way to keep competent officers in the PLA is to allow them to augment their income illegally, this might still be construed, in a worrisome threat assessment, as a way of increasing China's military capability. But one must be skeptical on whether the *net* benefit of such illegal diversions of income is really to increase the PRC's ability to wage war, rather than to decrease it, given the impact of such corruption on the normal measures of professionalism

It is moreover not always so clear that the PLA's ventures into the business world will be a net source of economic reinforcement for the military. If Chinese military aircraft are being used to run an airline (China United), it is not easy to tell, because of all the difficulties of accounting and bookkeeping, whether the returns outweigh such things as the running down of the aircraft involved, and the reallocation of the military personnel. What looks like a "profit" may be a net loss, even if nothing is being skimmed off in the patterns of corruption.

One can more broadly generalize about the kinds of ventures into which the PLA has been involved by sorting these into three sectors: agriculture, heavy industry, and a "tertiary" sector more involved in the service industries.[10]

The involvement in agriculture is of the longest standing, as the PLA was engaged in producing much of its own food even back in the days of the Chinese civil war against the Kuomintang. Here the involvement might be regarded as generally profitable in the net, a net contribution to the overall resources and strength of the PLA, even if this slice of

[10] The breakdown is outlined in Tai Ming Cheung, "The Chinese Army's New Marching Orders: Winning on the Economic Battlefield," in Brommelhorster and Frankenstein, op. cit., pp. 181–204.

Chinese agriculture is less efficient than the portions that have been returned to more of a private profit motive, by the "individual responsibility" system Deng instituted in the 1970s.

The involvement in heavy industry includes some defense-specific facilities that would inherently have been connected to the PLA (although many of these are not owned and administered by the PLA, but by COSTIND, a separate state defense-supply organization, with whose products the PLA has regularly been quite unhappy). Where the PLA has become involved with such heavy industry, either long-term or more recently, it has often been engaged in money-losing operations, as these display the same characteristics as the economic dinosaurs in the rest of state-owned industry in China. This second sector is thus hardly a reinforcement for the PLA's ability to be ready for war.[11]

The tertiary sector is much more market-oriented and competition-driven, and hence displays (subject always to the difficulties of accounting noted) more efficiency and profitability. It is from this third sector, where the PLA's involvement is more recent and dynamic, that one might expect more resources to flow.

Changes in Outside Control over the Military

The financial independence that the PLA may achieve by being so entrepreneurial would seem to leave the military less under the control of the civilian leadership in Beijing. The army does not have to beg as much for particular appropriations. The civilian leaders may not even know in detail what the military is undertaking as investments, or what return it is extracting therefrom.

---

[11] On Chinese heavy industry in general, and the PLA's share of it, as compared with the PLA's more profitable ventures, see ibid., p. 194.

The influence of the Communist Party over the army would similarly be reduced, because the PLA does not need to mobilize the influence of party officials as much, and because the entire nature of capitalist market activities is, to say the least, at odds with the ideology of the party. One will, of course, find attempts by Communist Party officials and components to cash in themselves on the returns that can be won in the consumer market, but the party, for a variety of reasons, is more restrained here than the agencies of the government, and in particular the military.

There has long been a debate on how ideologically committed the military has been in Communist states, with the institutions of commissars being credited with precluding insubordinate and independent actions by the professional soldiers. As Communist ideology wanes in its influence more generally, one would have to question whether the controls over the PLA will remain effective. And the substantial plunge of soldiers into business activities would seem to pose new questions here.

Changes in Corruption

There have been many comments of regret that the liberalization of the mainland Chinese economic and political system has been accompanied by such extensive corruption.[12] But realists about domestic political development might have warned that this was inevitable, given some of the traditions of the region (where family connections were so much more important than formal legal distinctions), given the absence of any rule of law in the days of a more totalitarian Communist morality, and given the enormous temptations of making a profit.

[12] On the general corruption phenomenon, see Julia Kwong, *The Political Economy of Corruption in China* (Armonk, New York: M. E. Sharpe, 1997).

Some of the corruption is actually desirable, where bad laws and regulatory structures are simply barriers to the efficient pursuit of market solutions. The Chinese economy, like all the Marxist economies, was vastly overmanaged and overregulated for a long period of time, and there are still entrenched bureaucracies which too much enjoy having to give their permission for the simplest of undertakings. Where a bribe bypasses what otherwise would have been a cumbersome process, this may simply be the equivalent of a small tax in an efficient economy.

Yet, when silly laws are ignored, the good and necessary laws may also be ignored, and the bribes may be used to deliver shoddy goods, or to violate contracts, or to move favorites forward ahead of the lowest and most efficient bidders.

The PLA's active participation in such extensive business activities surely works to enhance the corruption of China in general, because budgetary categories are being deliberately and arbitrarily twisted and redefined, thus reducing the respect anyone in the system has for the written law.

Conversely, the corruption of the PLA itself is also increased, because they have to wink at the same directives as to how trucks or airplanes were meant to be used, and because the very process of trying to make money is at odds with the purer and more public-spirited motives that one traditionally associates with being a soldier, in any country of the world, not just a Communist country.

There was a time when the seeking of personal profit by *anyone* would have been regarded as corruption in China, just as in any other Communist country. The world would regard the change of attitudes here, for someone in agriculture or the chemical industry, as entirely healthy, rather than as corruption *per se*.

But even the most committed supporter of market approaches might regard the profit motive as per se "corruption" for some professions, for clergy, for police officials, and for professional soldiers.

To return to the homely analogy with American universities, we might be only slightly shocked to hear someone say, "Any University of Maryland that can't make money isn't a very good university." But we would be totally shocked to hear, "Any College Park police force that can't make money isn't a very good police force."

Where the Chinese military engages in smuggling, one comes close to seeing it as dysfunctional, unless the tariffs being evaded are some bizarrely counterproductive barrier to trade. Where the PLA Navy is accused of being in complicity with high-sea pirates, the deviation from a proper role would seem to be total.[13]

Impact on PLA Attitudes about the World

The negative side of the PLA's ventures into business might be viewed as corruption, and cynicism. The positive side would, of course, be that the experience will make the officers and enlisted men involved much more worldly and openminded, as they come into contact with a much larger slice of their countrymen, and into contact with a fair number of foreign nationals.

If all the Chinese officer knew in the past was Marxism and soldierly virtues, he now has experience with the practices of buying and selling, with the principles of consumer sovereignty, and the changing fashions of consumer preferences.

[13] For accusations of cooperation with pirates, see Karmel, op. cit., p. 112.

Besides acquainting these officers with more information about the outside world, the experience is very likely to wear away the ideological zeal that was assumed to be activating such people in the part, and even the nationalistic zeal that is now sometimes put forward as a dangerous new source of motivation, as we close out the century.

We are dealing here with the strength of feeling that the PLA in particular will experience with regard to Taiwan, or the Spratly and Senkaku Islands, or to the rebellious regions of Tibet and Xinzhiang, and the disputed boundary with India, or to the troublesome neighboring situation in Korea.

It would be a mistake to attach any total influence over motivation to the new pursuits of the Chinese military. People are complicated, and may retain some important ideological biases or nationalistic sentiments, regardless of what new opportunities they have found to augment their income. And a substantial portion of the PLA will still be actively involved in traditional military operations, ready to fight and perhaps die, against one enemy or another.

Yet another slice of the PLA is now involved in business ventures that involve partners from outside Communist China, and by now there are even ventures tying the PLA together with investors from Taiwan. The question would thus still remain of how intense the PLA's alleged zeal for the recovery of Taiwan, perhaps by force of arms, or at least by the implied threat of a use of arms, can be, if the same Chinese military is regularly interacting with business partners from the Republic of China (ROC).

Seeing how efficient, and how prosperous, the partners from Taiwan have been, the typical Chinese on the mainland, whether in the military or anywhere else, will surely realize that the Taiwan model has a lot to offer, and that the Maoist model was fundamentally flawed. If the concern on the mainland, in particular in the military, were rather that Taiwan was deviating away from Chinese national unity, the regular

contacts with businessmen from Taiwan offers a human reassurance that Taiwan is indeed still "very Chinese."

The Republic of China government in Taipei has expressed a nervousness about the extent of Taiwanese investment on the mainland, urging its businessmen to diversify with movements of capital to other locations, perhaps to Indonesia. Yet the typical Taiwan entrepreneur continues to look to the Chinese mainland, because this is where the good investment opportunities are to be found, and also because he finds it easier to do business and develop partnerships with fellow Chinese.[14] In some cases, distant cousins are involved, exploiting the traditional bonds of family ties in the Confucian tradition. In other cases, it is simply the shared culture that makes partnerships easier. Most officials in Taipei would deny that there are any such joint ventures with the PLA itself. But one occasionally then hears admissions that there are indeed partnerships here as well.

On its side, in turn, the PLA is also attracted, in the pursuit of monetary profits, to dealing with fellow Chinese on Taiwan, rather than with Japanese or Indonesians, all things being the same, on the same advantages of working with ethnic kinsmen.

The PLA has been accused of being more hawkish about Taiwan than other parts of the Beijing decision process. Perhaps this is so because the PLA is looking for a mission, hoping to get larger appropriations as it can advertise air and naval and ground augmentations required to liberate Taiwan (or at least required to deter any Taiwanese moves toward an explicit declaration of independence). Or this might also be because military establishments in many countries, Communist China included, tend to be more patriotic and nationalistic than the average for

[14] On the ROC's attitudes about Taiwan investments on the mainland, see Willem Van Kemenade, *China, Hong Kong, Taiwan, Inc.* (New York, Knopf, 1997)

adult citizens, given that they would be called upon to risk their lives first in an armed confrontation.

Yet the additional fact that the PLA has gone so much into business, including business with Taiwan firms, undercuts this image of PLA hawkishness, or at least modifies it somewhat.

The PLA business partnerships with firms from Taiwan are not yet a firm assurance that the same PLA is not planning for, and lobbying for, an invasion of Taiwan. But it makes the fervor of any such lobbying less, and it reduces the likelihood that any such invasion will occur, or that the PLA in the net would favor it.

Were the PLA to have been discovered to have launched joint ventures also with Tibetan monks and the Dalai Lama, one would similarly have expected a diminishment of its intensity of feelings about protecting Chinese territorial integrity in Tibet. But such ventures are of course inherently much less likely than the ventures with Taiwan, and also unlikely would be any such business deals with Muslim partners in Xinzhiang.

The general distractions of "being in business for itself" can be expected to cool down the PLA's patriotic zeal everywhere somewhat, but there would not be the special conflicts of interest that emerge from particular business partnerships.

Some of the PLA's ventures will include Japanese partners, and this would supply an additional motive for restraining Chinese nationalistic sentiments about the disputed islands between Okinawa and Taiwan, called the Zenkakus by the Japanese and Diaoyutai by Chinese. The Beijing regime itself, requiring Japanese loans and Japanese investments more broadly, has been embarrassed by the zeal of demonstrators in Taipei and Hong Kong in protesting the Japanese claim to these islands, and has had to head off the development of more vehement anti-Japanese student protests at campuses around mainland China.

It will be more of a stretch to expect investment partnerships between mainland China and Communist Vietnam, such as could cool the disputes about the Spratly Islands (Nansha to the Chinese) in the South China Sea. Yet there are now extensive Taiwanese investments in Vietnam, and the Chinese businessman from Taiwan could easily enough be a go-between for ventures involving both mainland China and Vietnam. Once again the net of the tendencies involved would be the same: to complicate, and thus to cool the ardor of, the disputes between Beijing and Hanoi, and to complicate the otherwise patriotic feelings of the PLA.

It has to be stressed that the Senkakus and Spratly Islands disputes amount to examples of economic issues not so necessarily reducing military tension. For most of the rest of China's relations with its neighbors, the interactions of trade are very likely to reduce the risk of war, as each side to a potential dispute has a great deal to lose if conflict ever breaks out, in the lost deliveries of the next round of trade goods, for example. The interdependence that has entangled China with all its trading partners accounts for the rapid economic growth that the entire region has been experiencing, and also for the surprisingly low amount of military tension after 1975. And the PLA's involvement in these entanglements of trade mostly reinforces this.

But the economic side of the particular disputes about sovereignty in the islands is much more of a zero-sum exchange. If China gets title to the islands, it wins whatever energy sources are to be found on the ocean floor surrounding them, relieving its own energy shortage and providing an additional source of foreign exchange, while Japan and Vietnam and the Philippines lose. If other countries instead get the title to such islands, they gain the energy and foreign exchange, and it would be China that loses.

A mercantile, "in search of plenty," orientation may thus make China more cooperative on many fronts, but not on the disputes about island

sovereignty in which the PLA Navy and other armed forces may play an important role.

One might return to speculate about the impact of mercantile dealings on any lingering "comrades in arms" feelings that the PLA leadership might still have for North Korea, the only ally with which it has fought side by side in combat. The answer here might seem obvious, given the strange and bizarre orthodox Marxist path to which the Pyongyang regime has continued to adhere. The PLA, by getting into business, has been reveling in the very kinds of activities that Kim Il-sung and Kim Jong-il have found so reprehensible.

And again some of the major business partners of the PLA will now indeed be South Korean, giving the PLA one more sample of the contrast between Marxist and non-Marxist approaches, producing a respect for the South Korean model of economic and political development. If Chinese military officers now regularly have South Korean business partners, one could, in the worst of one's fears, see this as part of an intelligence effort to prepare to assist a North Korean attack on the Republic of Korea (ROK). But such fears are surely to be discounted, and overwhelmed, by the obvious bonding of outlooks and personal interest that emerge between the PLA and the South Koreans, and the obvious erosion of any lingering comradely bonds, ideological or military, between the Chinese and the North Koreans.

There are many other reasons why the average Chinese, or the average Chinese Communist soldier and officer, would today no longer feel any particular bond of affection for the North Koreans. But the business of operating hotels or trading ventures has to reinforce this sense of alienation from the Democratic People's Republic of Korea (DPRK), an alienation that might well keep the PRC or the PLA from being involved, if North Korea collapsed, and the South Koreans felt they had to come to the rescue.

The Impact on Efficiency

We are speculating here about the likely impact of the entry of the PLA into various business ventures that in a normal economy would have been left entirely in private hands. We will shift now to possible changes in the efficiency of the economic processes involved.

With regard to the overall efficiency of the PLA itself, it could be argued that the impact would be positive. Rather than remaining in the command-economy monopoly mode that is normal for any military service or police force around the world, the officers and men of the Chinese military would be getting into competition against other firms, would be getting into the day-to-day assessment of what customers want.

The internal processes of almost any military, whether it be in a "socialist" country or a "market" country, are typically devoid of the goads toward efficiency that market processes, and the workings of supply and demand, generate.

As noted above, one can indeed conclude that the overall military professionalism of the PLA is reduced by getting into carrying passengers in the running of an airline, and perhaps that the readiness for violent conflict is reduced by the distractions of seeking profits in peaceful pursuits. But the processes of having to seek such profits make one much more attuned to the assessment of costs and the exploration of alternative ways of doing things.

Yet if the efficiency of the PLA is thus increased, the efficiency of the entire economy is by the same measure reduced, because one has infected the market processes, in the running of hotels or selling of ice cream, with some of the bad habits and practices of the public sector, and because the accounting for inputs and resources is much less rigorous, with much of such accounting in fact reflecting the needs to get

around regulations, in bursts of subterfuge that may make it difficult for *anyone* to judge whether a particular venture is generating a net gain for the economy.

Before one concludes that the PLA is going to be a major contributor to the market economy that is producing China's economic growth, and/or a beneficiary of that growth, one might try to sort out the possible "advantages" the PLA has in the economic arena, compared to other firms, to see which of these are indeed real.

There are situations where the PLA firms will "out-perform" other firms simply because they have a de facto monopoly in some economic sector in some region. Examples would be in mining, or ownership of air bases and other transportation facilities, and communications infrastructure."

There are other cases where the PLA is bringing to bear the benefits of military research and development, without having to pay for such technological inputs, or where (as noted above) it is utilizing military tools and personnel, again without having to pay for them. Here the profit margin might again be misleading, as the free access to these inputs gives PLA-owned businesses an unfair advantage in competition, but their "profits" may not be so in the net.

PLA ownership also tends to free firms from local government interference, bypassing some of the more cumbersome bureaucracy and regulation that might otherwise delay operations, and escaping taxation in other cases. Where the regulation that is being bypassed is of the useless type that so much held back the economy before Deng's reforms, this kind of "corruption" is actually beneficial for the Chinese economy overall, and thus potentially also increases China's future military strength. Where the PLA's profits are instead basically an evasion of the taxes that would have sustained local or central governments, it is less clear that they are an increase of efficiency.

" On the PLA's monopoly privileges, see Min Chen, op. cit., pp. 212-213.

Even less clearly of advantage to the economy is the fact that the PLA's ownership of business ventures will inevitably entail some greater centralization of management than would have applied to such ventures otherwise, with all the loss of flexibility this imposes on the pursuit of targets of opportunity. And the inherent uncertainties of legality and constitutional status for such ventures may introduce a different kind of uncertainty to the economic processes involved.

The least efficient management of the resources of China almost certainly came when *all* economic decisions were made by central management. A system where private entrepreneurs are allowed to function, and where state firms have to compete in the marketplace, is surely more efficient than this. The most efficient system will come when most or all of the state-owned firms are privatized, and where the government no longer tries to make decisions about what goods are to be produced.

Having the PLA in the business of producing goods for the market is thus a step backward from full efficiency of the market, because like other state-owned firms, it can not really be tested on whether it is making good use of resources. Indeed, because of the inherent secrecy with which the military can shroud itself (a secrecy that every military of the world must maintain somewhat, lest possible enemies learn too much for use in future battles), it may be even more difficult to judge the relative cost-effectiveness of PLA-run businesses than other state-run ventures.

Changes in Chinese Imports

Because the PLA now depends for its budget in part on private profits, with some of the business ventures here being cooperative with foreign

firms, this enhances the extent to which China is dependent on foreign goods and inputs.

Outsiders might generally welcome this increase in interdependence, on the straightforward argument that a China that depends on the outside world for the shipment of spare parts and other goods, month after month, is much more likely to be deterred from launching military aggressions, and is even perhaps vulnerable to a certain degree of "compellence" by threats of economic sanctions, vulnerable to pressure to free dissidents or relax repressions of human rights.

Pessimists about the economic growth of China sometimes draw analogies with Nazi Germany, noting how the German economy was growing under Hitler, and noting how Beijing is relying more and more on a nationalistic ideology to retain any support from the Chinese people. Yet Nazi Germany after 1933 moved very much in the direction of autarky, discouraging individual Germans, and German business firms, from developing any ongoing dependencies on foreign inputs.

Hitler was planning for war. Some analysts now see the Chinese leaders planning for war, but the PRC is adopting trade policies very different from Hitler's Germany.
This is not to suggest that trade considerations will be an insuperable deterrent to aggression. Cutoffs in trade are always a double-edged sword, as the western firms supplying the goods being purchased by the PLA will be just as reluctant to see a trade cutoff as will the recipients in China. An American president can threaten to punish a Chinese human rights violation, or a Chinese transborder aggression, by a cutoff of trade, but going through with such a threat, where the Chinese transgression is more graduated and minor, may be very difficult in terms of domestic politics.

One also always has to be concerned, of course, that the processes of trade will too much enhance the militarily relevant technology available to the PRC, and here the active involvement of the PLA in what seems

to be "private" business might be made to look much more sinister. Given the dual-use nature of so much of technology today, one could imagine the PLA acquiring some very militarily relevant equipment or techniques, even while it was officially in the process of running a hotel, or an air freight operation.

The advanced technology that *any* Chinese firm acquires can always, in principle, be applied to military uses, whether that firm is owned by the PLA or not. Perhaps this will be easier in today's market economy in China if the firm is owned by the military, but the government could still always direct any other firm to put its resources to work enhancing China's military strength.

Yet the assessment here will have to be one both of capabilities and actual practice. When a PLA-owned firm acquires facilities within the United States itself (as has already now several times happened),[18] will this mainly be a conduit for technology transfer back to China, and the strengthening of PRC military power? Or will it instead be mainly a way of making money, and in the net a distraction from more patriotic orientations for all concerned, i.e., a net reducer of Chinese readiness for combat?

What we know about the PLA's ventures into business suggests that there is something more happening here than a mere cover for the pursuit of technology transfer, or a move to lull foreign governments into allowing dangerous technology to be sold. But as we assess the impacts of what is going on, this would have to be included on the list.

The PLA's involvement in business may be part of a larger process by which China is made less *willing* to initiate a war. But it might at the same time, in some ways, help to make China more *able* to do so.

---

[18] For citations of such investments, and American Congressional concern, see ibid., p. 219.

Trade relationships are a two-way street, or a double-edged sword. The foreign suppliers of goods consumed by anyone in China, including by the components of the PLA, will, as noted, be reluctant to see such trade relationships broken off, and will become a lobby for holding back on any economic punishments of Beijing.

Also reluctant to get into economic warfare will be all those consumers in the outside world who become accustomed to the goods made in China, ranging from textiles to cameras, goods very high in quality, available at a substantial reduction in cost.

As the PLA has become a source of some of these Chinese exports, as well as a customer for imports, we can speculate a little about some of the choices it faces, and about what this all does to the power or the belligerence of China as a whole.

One could assume that the PLA, on its own, or under the leadership of the Beijing civilian leadership, would apply a grand strategy to its portfolio of exports, stressing the goods that would most increase the consumer dependency of Americans, and thus most undermine American resolve in a crisis. By the same logic, the PLA would, having bought into key industries, thereby apply one more kind of central management to keep Chinese inputs from strengthening the military capabilities of the United States, or of any other potential adversary.

To return to the analogy with Nazi Germany, Albert Hirschman's analysis published in 1945,[17] argued that Germany (in addition to maximizing its own freedom to aggress—without suffering economic damage in

[17] Albert O. Hirschman, *National Power and Structure of Foreign Trade* (Berkeley: University of California Press, 1945)

economic sanctions), had restructured its trade agreements with Eastern Europe to make these governments and consuming publics increasingly dependent on the goodwill of Berlin: Nazi Germany, in addition to reducing any inhibitions imposed by the import side, had used the export side of the trade arrangements as a way of enhancing its political power.

In retrospect, one might question whether Hirschman was not giving Berlin more credit than it deserved for having an economic master plan, as some of the international contracts that were negotiated by Hermann Goering and others were tuned more to parochial interests within the undercentralized Nazi bureaucracy, and less to any overarching German national interests.[9] But the important difference remains, of course, that the German policy was one more generally of limiting imports and trade in general, while the Chinese policy today is one of expanding trade.

The actual trade role of the firms in which the PLA has been investing in China is hardly so easily related to any master plan of advancing Chinese power, either by holding back outside world power, or by increasing outside world dependence on Chinese inputs. The technological underpinnings of the U.S. military would never have been particularly dependent on the kinds of technology that China exports in any event, but there is no evidence of any kind of Coordinating Committee on Multilateral Export Controls (COCOM) structure on the Chinese side, carefully scrutinizing Chinese exports to make sure the United States or the Japanese or some other potentially opposing military does not benefit therefrom. (Indeed, in an important point to which we shall return directly, the major outside world complaint would be that the PLA's involvement in the export of militarily-usable products

[9] On the uneven German readiness for World War II, see Burton H. Klein, *Germany's Economic Preparations for War* (Cambridge: Harvard University Press, 1959).

is *not controlled enough*, creating serious proliferation problems around the world.)"[19]

And there is no evidence that the PLA is part of some grand strategy of supplying the outside world with goods for which the demand, once established, will become urgent, with an array of Chinese products discouraging the United States or some other powers from reacting if Beijing were to take some dangerous military initiative. This is the kind of leverage that the OPEC countries once, willy-nilly, achieved; but, attractive as Chinese products may be, one does not fear any imminent political intimidation of the United States by the prospect that the American public's supply of Chinese goods might one day be cut off.

The overall pattern of the PLA-penetrated portion of the private sector in China is thus like the rest of that private sector, namely geared simply to "making money," to the pursuit of profits, the pursuit of plenty rather than national power.

Chinese Military Exports

Yet the injunction to the PLA to "make money" does indeed have one particular impact, compared to the rest of Chinese industry, since the PLA started out with an ownership of, or at least jurisdiction over, the production of weapons within China.

It is more surprising, but also more benign, when PLA-owned factories produce men's clothing for the export market. It is less surprising, but also much more worrisome, when PLA entrepreneurs sell missiles or other military weapons to foreign countries.

---

[19] On China and the weapons proliferation problem, see John W. Lewis, Hua Di, and Xue Litai, "Beijing's Defense Establishment: Solving the Arms Export Enigma," *International Security* 15(4) (Spring, 1991): pp. 87-109.

Some analysts would simply see such sales as part of higher-level Communist Chinese policy, as weapons are supplied to such traditional allies as Pakistan or North Korea. Some of such weapons transfers are in violation of explicit promises made by the government in Beijing to the United States, and to the rest of the world trying to establish barriers to the proliferation of various kinds of weapons systems. The more worried analysts of Beijing's foreign policy intentions find a reinforcement for their fears in these violations of agreements, since deceit has always been a part of aggressive foreign policies in the past, as the outside world is tricked and lulled, perhaps until it is too late.

But there are cases where the weapons being transferred are very difficult to relate to any grander political aims of the PRC, and where the explanation for violations of international agreements may well be that Beijing does not have adequate control over what lower-level bureaucracies are doing. The lower-level agents negotiating weapons sales, or other military-related sales, are often, but not always, components of the PLA. In each case, they are pursuing the general instruction that is so widespread today all across China, to "make money."

Some of the cases of Chinese sales furthering weapons proliferation around the world may lie between the two extremes, of central regime duplicity, and lower-level insubordination. The PRC indeed wants to earn foreign exchange abroad more generally, and wishes the PLA to be able to purchase more modern equipment; more generally it wishes the commanders of the PLA to be more happy with their lot.

Under such circumstances, it may have tolerated arms sales that violated pledges made to the United States, without officially signing off on such sales, or even fully knowing about them, achieving a "credible deniability" that in the past also allowed heads of governments to officially disapprove of what their intelligence services had done.

But there have been other sales that would actually have run counter to the national interests of China. One can find two blatant examples in the

nuclear field, where the culprits were not in the PLA, but where the explanation is basically the same, that a subordinate was told that he would be doing a bad job if he could not find ways of making foreign sales to make ends meet, and where that subordinate was otherwise not very closely controlled or guided on what sales were allowable.

There were persistent reports in the 1980s that the PRC had sold enriched uranium to the white regime in South Africa.[20] Given the outrage the black African states would feel when such transactions were discovered, it would have been folly for the Beijing regime to agree to such sales. Rather the most likely explanation is that Beijing was not consulted, and that some official in the Chinese nuclear program accepted the purported destination of the equipment involved as being the final destination, even though a more suspicious analyst would have seen that the materials would move along elsewhere.

There are similar reports from the 1980s of an even more dangerous transaction, of Chinese sales of sensitive nuclear materials to India facilitating an expansion of the total of Indian plutonium production, and thus increasing the number of nuclear warheads in the Indian "bomb in the basement" stockpile.[21] One can imagine almost no scenarios by which the PRC comes out ahead by increasing the total of nuclear destruction that India could inflict. Again, symptomatic of the other smaller transactions in which the PLA is rumored to be involved, the likelihood is that the nuclear official here also took at face value the "Swiss" destination of the heavy water noted on the documents, and, intent on earning the foreign exchange involved, restrained his curiosity about the real destination of the material.

---

[20] The accusations about transfers of uranium to Pretoria are outlined in Leonard S. Spector, *Going Nuclear* (Cambridge, MA: Ballinger, 1987), p. 231.

[21] See Leonard S. Spector, *Nuclear Ambitions* (Boulder, CO: Westview, 1990), p. 213.

The same pattern very probably has applied to the multitude of the arms deals in which the PLA has been involved, selling to Saudi Arabia as well as to Iran and Iraq, cooperating with Israel, and on and on. The outside world has probably overestimated the centralization of "Communist China," assuming that all decisions have had to be ratified in Beijing itself, when the PRC regime, even in the days of Mao, and especially now in the new atmosphere of economic and political liberalization, has actually been relatively uncoordinated and decentralized.

To repeat, the outside world would have recommended a decentralization of the Chinese system a long time ago, and indeed generally welcomes it now; but this outside world would hardly have begun its recommendations with the armed forces and the deadly technologies at its disposal.

One of the more serious arms control disputes between the United States and China has thus pertained not to what equipment the Chinese are acquiring for themselves, as part of some sort of arms race with the United States, but rather to the seeming irresponsibility of Chinese arms transfers and militarily relevant technology transfers to other countries, in particular countries like Iran and Iraq.

The net impact of the PLA privatization is hardly very good on this particular dimension of how the United States regards China, since the desire to earn hard currency, and indeed the urgent necessity of the PLA to earn its own hard currency, will increase the transfers that get approved, or that get made even without approval.

It is almost inevitable that the most deadly technologies in the possible sales inventory of the PRC will be those controlled by the military, since it is normal for the defense establishment of a country to have jurisdiction here. It is one thing when the aviation technology of the Chinese military gets used to run a private airline, or to produce aircraft for the civilian airlines of other countries. It is far more worrisome

when the same technology gets used to bolster the air forces, or rocket forces, of a potential "rogue state."

A Wild Prediction: Future Sales to Taiwan?

As noted, some of the weapons that have been sold by China amounts to poor arms control, in that weapons of mass destruction, or other deadly weapons, are spreading to countries that *everyone* has to fear. The Islamic militants of Iran, or the dictatorial regime of Iraq, pose risks not just to the United States, but to China as well.

Yet such sales have continued, sales which it is difficult to fit into any diabolical Beijing master plan, but which make sense easily enough if one assumes that the weapons sellers, PLA or otherwise, are simply pursuing the short-term accumulation of profits and hard currency, and shrugging off the longer-term risks.

Much of what has been going on here, in the PLA venture into business, or in the business ties generally between the PRC and Taiwan, would not have been predicted twenty years ago; if anyone had made such a prediction, he would have been dismissed as wildly unaware of the fundamental principles governing Communist China.

One might entertain a similar wild prediction here, that we shall, before another decade is out, see reports of weapons technology or actual weapons slipping from mainland China to the Republic of China on Taiwan. While the PRC indignantly denounces any weapons sales by the United States or France or the Netherlands reinforcing the military defenses of the ROC, it has all along been difficult to gauge how serious the Beijing vehemence here is, whether it really pertains to the material degree to which Taiwan's defenses are augmented, or pertains instead to the symbolism by which Washington or Paris are treating the ROC as if it were a sovereign country.

Yet "money talks" here, and one has already seen projects floated for the joint Taiwan-PRC production of airframes (admittedly civilian jet airliners, but the distinction between military and civilian jet aircraft technology is not so very deep and clear-cut). Just as some venal suppliers of high technology in the West have been inclined to redefine what is militarily relevant, narrowing the list so that a sale could go through to the Soviet Union or to China, so the same venality may show up among the PLA entrepreneurs we are contemplating here, indeed is very likely to show up.

There is no long list of military technologies or hardware, where anyone on Taiwan would actually prefer what comes from the Chinese mainland to what can be obtained elsewhere. But, as a mere symptom of what is going on in the PLA, it may not be such a wild bet that an example of this kind of a transfer will show up in the news as we enter the next century.

Analogies to Other Countries

Other serious militaries around the world have sometimes gotten into operating hotels, or commissaries, or similar nonmilitary projects, but not to the extent of total effort that one now sees in China. The United States has for a long time been encouraging some of its friends in the world, for example, the governments and armies of Latin America, to get more into "civic action," into building highways and local hospitals, thus winning local villagers over to a positive image of what these institutions can do. Such Latin American armies have been urged to learn from the U.S. Army Corps of Engineers, a large portion of which has for many decades been engaged in such basically civilian tasks as improving river flows, opening canals, and preventing floods.

To have the military engaged in what other societies would regard as civilian public works, i.e., as another kind of governmental public-

sector activity, is thus not so unusual. But the question is one of extent. As the world emphasizes the desirability of "conversion" in the post-Cold War world, a conversion from deadly weapons to civilian products, it is only appropriate that some of this be handled by people who remain in uniform, while their roles in the meantime change.[22]

As illustrated by the analogy with the U.S. Army Corps of Engineers, some of the shift of PLA activities may be nothing more than the exercise of what have come to be seen as natural government functions around the globe, the maintenance of highways and canals, ferries, and so on. The intervention of the state in the market in other kinds of business ventures has not been limited to Communist-governed countries, of course, as many democratically governed countries have experimented with such things as state management of airlines.

If we now conclude that most such state attempts to operate businesses have been failures, because of the misalignment of incentives that accompanies this, the PLA example is not per se something so startlingly new. What is indeed more new is the fraction of the military's time and effort that are involved in such activities, suggesting that the original core function of the military, to defend the nation, and to be the bedrock of domestic law and order, may be compromised.

One might thus be astounded at the extent of the transition, at the conversion of what political scientists often regard as the core of sovereignty and political power—the armed forces—into such a major player in the private economic sector.

Advocates of extensive reliance on the marketplace still typically would want the capabilities for violence to be held in the public sector; the

[22] A general discussion of possibilities and problems of conversion can be found in A.L. Bachr Brunn and H. J. Karpe, eds., *Conversion: Opportunities for Development and Environment* (Berlin: Springer Verlag, 1992).

model of what an economic libertarian favors has been phrased in the past as "anarchy plus a constable."

When the government gets heavily into the private sector, one has all the problems of distorted incentives and mismanaged economic decisions that one typically associates with socialism. When the private sector correspondingly takes over the forces that are the underpinning for law and order, one risks more than corruption, for there are possibilities of a loss of the central constable function, a loss of the benchmarks of law and order.

The nature of Communism in the Soviet Union and in other former members of the Warsaw Pact sometimes produced a parallel gap in the central government function, in that tax revenues were not sufficient to maintain government services. In the days when all industry was owned by the government, taxes were not really needed to support government functions. In the days when all wages were supposedly set justly, in accord with the moral standards of the socialist society, there was no need for income taxes or other taxes to exist as a mode of redistribution.

Thus one saw the post-1991 Russian government unable to pay its bills, because it lacked what any government in the capitalist world would automatically have required, the ability to tax sufficiently to cover its expenses, with the result being a runaway inflation based on the printing of additional money to pay bills.[21]

The Chinese Communist government has also been facing a shortage of revenues, for somewhat similar reasons, as it has liberalized the Chinese economy, since it also did not rely very much on taxes for its opera-

[21] On the Russian fall into printing press inflation, see Christine I. Wallich, "Reforming Inter-Governmental Relations: Russia and the Challenge of Fiscal Federalism," in Bartlomiej Kaminski, ed., *Economic Transition in Russia and the New States of Eurasia* (Armonk, New York: M.E. Sharpe, 1996), pp. 252–276.

tional expenses in the past, but rather the revenues from state-owned businesses. Provincial authorities have also taken a larger share of what taxes are in place (a pattern also showing up in Russia), and the result of all this has included the mandates directing the PLA to seek more of its own funding.[34]

It might seem somewhat bizarre for the western market-oriented world to be recommending an *enhancement* of the state in any of the Communist and post-Communist societies, but the previous totality of the state's role indeed may require such an enhancement now, as the shift to private-sector market approaches leaves an actual void in what inherently should be the state sector.

Some Conclusions

At the end of this discussion, there may be two questions that most need to be answered. What has the PLA's participation, in what we normally would regard as private business activities, done in the net to its ability to be effective as a fighting force, i.e., to Communist China's military power in confrontations with other powers in the outside world? And what has this participation done to the distribution of influence within Beijing as to who makes the decisions about domestic and international policy?

As noted, there are ways in which one could worry that these developments are part of some master plan to advance Chinese power internationally. But, in the net, it is much more likely that most of these business investments reflect a search for personal and private profit, a search for plenty rather than power, and that they have thus been a massive distraction for the pursuit of Chinese national military strength.

[34] The PRC approach to a shortage of fiscal revenue for the central government is discussed in Shambaugh, op. cit.

The army that assigns so much attention to the making of money will not be maximizing its ability to fight, or to threaten to fight.

If this is the conclusion on the PRC's *ability* to fight, one must still address the impact on its *willingness* to fight.

Identifying the relative strengths of factions within the decision-processes in Beijing is always a difficult exercise, given how closed these processes are, with occasional clarifications in the jousting of major Party Congresses.

The PLA's influence has often been painted in outside analyses as likely to be troublesome rather than helpful, for instance as the leaders of the military will be more adamant about Taiwan, or more anti-American in their rhetoric. The investments in business, as noted, may be symptomatic of both decreased influence and increased influence for the PLA leaders, decreased in that their normal appropriations have been cut, so that they must fend for themselves, increased in that they have been *allowed* to fend so extensively in the economic arena.

If these investments indeed generate a large net positive flow of funding for the PLA, this presumably increases the military's independence and influence, and reduces the controls over the military imposed by civilian government officials and Communist Party officials.

But, to repeat a theme outlined above, if the increasingly independent and increasingly influential PLA is also increasingly oriented toward the outside world in business dealings, the net impact may not make China more belligerent, but rather less.

Discussion

The first discussant was **Professor Dali Yang** (Department of Political Science, University of Chicago), who began with the comment that the Chinese police are also heavily involved in private enterprise, especially in the security industry. He then *challenged the idea that the military plays a large role in the overall Chinese economy*. The decision of the central leadership not to finance the expenditures of the PLA has resulted in a weakened military over the past few decades. The actual role of the PLA is diffused within a large economy, and as a result, is not very powerful.

Yang suggests that the diversified interests of the military have been *the result of slack demand for its traditional products*. The PLA has therefore been forced to expand into the civilian sector in order to maintain employment for its personnel. He sees its involvement in the service sector as being essentially for the purpose of job placement.

The general discussion of the role of the PLA, and Quester's paper in particular, suffer from a *failure to define terms precisely*. Yang feels that Quester overstates the influence of the military by including enterprises which are related to, but not necessarily part of the military, an error analogous to including Boeing as part of the U.S. military.

Yang claims that most *PLA enterprises are probably not making any money*, and haven't been since the 1989 economic downturn. For example, of the 34 Chinese airlines, only a few are profitable. He feels that the military's involvement in the economic sector has improved competition. In particular, its entry into telecommunications broke up a monopoly in that field.

The *net benefit to the PLA's capability* of having to raise its own revenues is *unclear*, although Yang's sense is that it is probably negative. He suggests looking directly at the data available for those enterprises that are listed on the stock exchange for evidence of whether the PLA's investments are paying off. Researchers can also learn more from primary literature, foreign broadcast news, and data on the Internet.

While Quester suggested that increased economic ties between China's military and its foreign adversaries will tend to soften any hostile intentions on the part of the PLA, Yang *questions whether Chinese aggression is really an issue*. He notes that a number of large-scale public infrastructure projects are currently being built—the Three Gorges Dam, for example —that would be sitting ducks for military air strikes against China. This strongly suggests that China is counting on peace with its neighbors for quite some time.

In sum, Yang agrees with Quester that Communist Party control has declined over the years, and points out that military morale is a problem. He likes Quester's analysis of the situation, but feels that his grand trade strategy comments don't mesh well with the rest of the paper.

Professor Hongying Wang (Department of Political Science, San Diego State University) was the second discussant. Professor Wang addressed what she regards as *Quester's two main questions*: whether the PLA's participation in business has increased or reduced China's threat to other countries, and whether that participation has enhanced or undermined the Chinese economy.

As did Quester, she breaks the first question into two parts, China's capacity to be threatening and its intention to do so. She agrees with Quester that the *net impact on capability* is not entirely clear. In terms of money, the official budget of the PLA is $7 billion, while business activity is estimated to bring in $25 billion. Loss of professionalism within the army by those persons involved in commerce is a serious problem, especially if it involves more than the one million (out of 2.5

to 3 million) troops who are *directly* involved in business. She expands on Quester's claim that entrepreneurial activity has resulted in an erosion of the chain of command between the PLA and the Central Party, by suggesting that the chain of command *within* the military has been eroded, as well. This may have even more serious repercussions when the army is called upon to provide internal law and order. The importance of both issues to overall capability depends in large part upon *how widespread is entrepreneurial activity* within the PLA and whether those engaged in business are segregated from the rest of the military.

Wang agrees that the PLA's ideological commitment to Communism has decreased as a result of its involvement in business, but she claims that *nationalism, rather than ideology, is what motivates troops in war.* The decision to go to war depends on foreign policy, which is essentially unaffected by the sentiments of the PLA. With regard to the argument that economic interactions may make a country less likely to go to war with another, Wang points out that increased resources going to the army during wartime may offset any commercial losses that the Chinese military may face. She adds that business dealings are not necessarily pleasant, and may in some cases increase hostile feelings.

Wang acknowledges Quester's point that market participation has probably enhanced the internal efficiency of the PLA. However, internal efficiency is not the main issue since the PLA's job is to provide order and security; more important is *how business dealings have affected the PLA's effectiveness as part of the overall institutional infrastructure in China.* These institutions are in transition, which has led to uncertainty about economic activities. Although resources are no longer entirely allocated by a central planner, political clout still matters in deciding who has access to important inputs. In a similar way, influence is used to avoid problems resulting from an inadequate legal structure for protection of property rights, contract enforcement, and dispute settlement. Rather than pushing for better defined economic and legal institutions, foreign business interests have often tried to circumvent the problems through partnerships with well-connected actors, prominent among

them the PLA. The more business is governed by connections, the less incentive there is to reform the institutional environment. By participating in these arrangements, the *PLA undermines the development of crucial market institutions.*

In conclusion, *the ability of the PLA to engage in entrepreneurial activities has made it easier for the military to adjust to its diminished support by the Central Committee.* Its special role as a state entity has given the army advantages in the economic arena, mainly in terms of political connections. Unfortunately, because the PLA benefits from the lack of institutional arrangements guaranteeing the rule of law, it is likely to oppose the reform of those institutions.

A discussion followed the presentation.

George Quester (Department of Government and Politics, University of Maryland at College Park [UMCP]) in reply said that details on the military's economic activities were hard to obtain, and were not available to the central government. The shortage of fiscal resources was the main motivation for the PLA's activities, rather than "demobilization" or "conversion" of the military to civilian pursuits. Some military participated part-time, others full-time, and others not at all in the civilian economy.

Robert Michael Field (INFORUM, UMCP) called for more data: on the value of output of military-owned enterprises and the ratio of military to civilian output; profits and losses (tax data by type of enterprise, showing profits if possible); and cross-tabulations of industries based on the 1995 census of industry.

Quester added that if the data weren't clear, maybe looking at trends would be helpful. PLA civilian economic activity went up rapidly in 1978–88, and since then the Communist Party has tried to cut it back, without much effect.

Richard Samuels (Department of Political Science, Massachusetts Institute of Technology) noted that there were two alternatives: civilian economic activity was a distraction from military activity, or it enhanced the efficiency and capability of the military. In addition to Quester's list, he could think of three more ways in which capability might be enhanced: (1) knowledge acquired or generated (in Japan, the same companies make products for both military and civilian uses); (2) economies of scale (expanding the supply base, for example); and (3) training in modern business methods and other skills (such as pilots flying planes more often). In analyzing this area, one should perhaps separate the navy from the army, since Deng increased the navy's role.

Roger Cliff (RAND Corporation) asked whether the $25 billion cited by Professor Wang was for all defense industries or all PLA-run activities. The revenues of defense industries don't go to the PLA, necessarily, even when civilian goods are being coproduced. Only profits from owned and owned-operated industries help the PLA. He cited some of the downsides of such activity. Many enterprises have been banned by the central government but are still in operation: this undermines command authority and discipline. In addition, the ethos of the military officer is not the same as that of business, and it is that ethos that holds a military together. Finally, commercial and political alliances resulting from business networks might encourage regional factionalism.

Jon Sumida (Department of History, UMCP) noted the importance of not merely looking at aggregate data, but of examining its smaller components. He cited the case of Britain, which between 1912 and 1914 put relatively small amounts of money into developing an alternative naval technology. The Germans noticed only the aggregate picture, which was that Britain continued to build its traditional large battleships.

Andrew Marshall (Office of Net Assessment, U.S. Department of Defense) pointed out that the writings of some Chinese military officers are focused on future high-technology warfare, unlike the military

literature generated in most other countries. **Quester** said that maybe learning about business and computers makes for a more efficient army, but he wondered whether this was the intention of the PLA.

Mancur Olson (IRIS Center, UMCP) alluded to lessons learned from the recent East Asian financial crisis. In some of these countries, at the beginning of the growth process, a well-advised dictator freed things up and moved toward a market-based economy with selective government intervention to strengthen the economy, acting on a discretionary basis—the opposite of the rule of law. As time passed, young dictatorships evolved into old, bureaucratic oligarchies. This is, in the end, no way to run either an army or an economy.

Yang commented that corporations in China now face the "rule of law," while the professional army is mainly insulated from economics and domestic politics. A state police force was created after Square to deal with domestic unrest, freeing the PLA from that responsibility.

Chapter VII
Societal Factors in Developing Military Capacity

Social Trends and Military Capacity in China

Martin Whyte

In recent years China's robust rates of economic growth and truculent behavior in her foreign relations have given rise to debates about the "China threat" potential. Although there are various versions of the "China threat" scenario,[1] all raise the possibility that China could use its growing economic and military strength to challenge the global system and threaten neighbors and others involved in strategic arrangements in the Asia–Pacific region, perhaps even leading to military confrontation with the United States.

In addition to the simple facts of China's rapidly growing economic capacity and military modernization, several other trends receive attention in these debates. China's longstanding historical sense of grievances against Western industrial powers, stemming from the "century of humiliation" inflicted upon that proud civilization beginning with the Opium War of 1839–42, is often seen as fueling a nationalistic drive to regain dominance in East Asia. Since the nations that are constantly telling China she must accept the existing system of multilateral arrangements and change her behavior to satisfy the requirements of the

[1] One of the most influential of such statements is Richard Bernstein and Ross Munro, *The Coming Conflict with China*, (New York: Knopf, 1997).

global system are the latter-day descendants of the powers that repeatedly humiliated and tried to colonize China earlier, national pride is seen as demanding that the global system instead change the rules of the game to meet China's needs and requirements, with China prepared to force the issue if necessary.

Another contributing trend is the rise of nationalistic sentiments among the Chinese people. There are a number of signs that in the post-Tiananmen era, Western countries are losing their luster in the eyes of many Chinese as a source of inspiration and progress. Perceived attacks on Chinese national dignity, such as the failed Chinese bid for the Olympics in 2000, arms shipments to Taiwan, and defeats in international athletic competitions, periodically set off demonstrations and even riots. The United States is understandably targeted as the primary source of continued threats to Chinese national pride, with many Chinese assuming that the United States is surreptitiously pursuing an effort to block China's effort to become an economic powerhouse and political superpower, the present United States administration's profession of a policy of "constructive engagement" notwithstanding.[2]

A number of Chinese intellectual forums in recent years have promoted themes that have echoes of fascism, stressing the need to strengthen national spirit, enhance national cohesion, and safeguard the glories of Chinese culture among the descendants of the Yellow Emperor. One recent study described conferences held during the early 1990s by organizations such as the Association for the Study of Chinese National Cohesion, the Association for Promoting Chinese Culture, and the Chinese Yellow Emperor Cultural Research Association, the latter a national organization reportedly receiving financial backing from the P.L.A.[1] Participants in these conferences sounded themes diametrically

---

[2] See, for example, Geremie Barmé, "To Screw Foreigners is Patriotic: China's Avant-Garde Nationalists," *The China Journal* 34 (1995): pp. 209–234.

[1] See the discussion in Victor Shi, *Contemporary Chinese Nationalism: Motives and Mechanisms of Ideological Transformation*, unpublished senior honors

opposed to those emphasized in the controversial *River Elegy* television documentary of 1988. While the latter stressed the need for China to reorient itself to the "blue waters" of the outside world, China's newly vocal "organic nationalists" emphasize the need for China to defend the "yellow soil" of its traditional culture against foreign influences. In these discussions, themes related to socialism and Marxism are notable by their almost complete absence.

For the most part, top party and military leaders provide encouragement and support for such rumblings of popular nationalism. Indeed, it is often suggested that in the wake of the more or less total loss of legitimacy of Marxism–Leninism–Mao Zedong thought (even with the theories of Deng Xiaoping recently added to the formula), China's leaders feel they must increasingly encourage nationalism (or some amalgam of nationalism and Confucianism) in order to legitimize their continued rule. Several important military and civilian leaders have, in fact, participated in or provided laudatory statements in support of the chauvinistic intellectual forums mentioned above.[4]

However, playing the nationalistic card is a tricky game, since popular protests can arise spontaneously against leaders and a Party that are not seen as doing enough to defend China's interests. On several occasions, for example, actions of other nations claiming the disputed islands in the South China Sea have provoked spontaneous demonstrations in China and in Hong Kong, with demands for stemer action by China to defend her sovereignty. Even though China is very far from being a democratic political system, public opinion has escaped from official control during the reform period, and the leadership increasingly feels constrained by popular sentiments (and particularly by the threat of

---

thesis, George Washington University, 1997, especially Chapter 3 ("Organic Nationalists").

[4] For example, central leaders such as Bo Yibo and Ye Xuanping attended or sent congratulatory telegrams to the "organic nationalist" forums discussed in Victor Shi's honors thesis, ibid

open protests and demonstrations). Those popular sentiments may increasingly favor nationalism rather than democracy. In the case of the "Taiwan problem," in particular, China's leaders may feel that they must stick to their pledge to use military force to prevent Taiwan's independence in part out of fear for the popular outrage that would be directed at those seen as having "lost Taiwan" if the rulers of that island openly declare independence.

In some versions of the "China threat" scenario, possible parallels with Japan in the 1930s and 1940s are stressed. In Japan a longstanding set of grudges against the Western powers, growing economic and military power, and heightened popular nationalism and militarism contributed to Japanese military aggression against its neighbors and even the United States. Initially Japan's military campaigns were very successful, and only after incredible destruction and a World War was Japanese militarism finally subdued. Can we expect to see a similar, dark scenario played out in China in coming decades?

A Focus on the "Human Element" in the Military

A large number of factors play a role in determining the likelihood that a nation will resort to military aggression, and in influencing the success or failure of acts of aggression. Most of such factors are outside of the scope of the present discussion, which necessarily has a much narrower focus– the impact of recent and foreseeable social trends on China's military potential. Furthermore, even within that delimited realm the present essay will not attempt to be comprehensive. For example, one major subtopic, the impact of the PLA's growing role in the economy, and the growing corruption involved in this trend, I will leave to George Quester in today's conference. I also will not discuss here such topics as the role of increases in education in China in producing a PLA that can use sophisticated weapons and adopt complex, multiforce military tactics. Instead I will limit my focus to the likely impact of social trends on the "human element" within the PLA—on those social and psycho-

logical traits that are more and less likely to produce Chinese soldiers who are brave, disciplined, cooperative, zealous, and patriotic fighters.[5]

A focus on the human element is adopted because the most outstanding feats of the PLA in earlier times, those recorded in the anti-Japanese, Civil, and Korean Wars against much better armed foes, are generally attributed to the considerable skill and success of the Chinese Communists in emphasizing the human factor in military training and organization, and as a result producing highly motivated soldiers. Treatments of Japanese militarism in the 1930s have similarly emphasized the importance of developing an intense martial spirit and discipline that made Japanese soldiers unusually brave and determined, not to mention vicious.[6] Are social trends in China likely to heighten or weaken the ability of the PLA to field troops who are the equals of their counterparts in these earlier examples?

There is not space here to systematically describe the classic, Maoist military model which stressed man over weapons as a way of enabling the PLA to defeat better armed opponents. Nor is there a need, since a

[5] It is worth noting the interesting historical and linguistic fact that the phrase, "gung ho," which is often used to describe the sort of fighting spirit desired in the U.S. armed forces, entered American parlance from Chinese (where the phrase *gonghe* means unite together or cooperate together) via United States Marines who were serving in China during World War II. The spirit of workers in primitive industrial cooperatives behind Japanese lines inspired American observers to emulate the same fighting spirit. See Chen Hansheng, *Gung Ho! The Story of Chinese Cooperatives* (New York: Institute of Pacific Relations, 1947).

[6] See, for example, the recently published work by Iris Chang, *The Rape of Nanking* (New York: Basic Books, 1997). A somewhat more complex portrait of the motivating spirit of Japanese soldiers is presented in Robert Edgerton, *Warriors of the Rising Sun* (New York: Norton, 1997).

variety of extensive discussions of the subject exist.[3] However, a number of key features of this classic model need to be highlighted here.

The first point to note is that Mao and other architects of that military model were not so much building upon a glorious Chinese military tradition as trying to create a new and stronger military ethos. Although China's rich culture and history contain heroic elements and legendary generals, and Mao's close study of the military classics by Sun Zi has often been noted, on balance military life was not held in high regard. In the formal status structure of official Confucianism, soldiers ranked "off the scale" below the ranked social categories of scholars, farmers, craftsmen, and merchants, and the popular saying had it that "you do not make good iron into a nail, and you do not make a good man into a soldier."[4] Given this cultural context, families following proud traditions of military service from generation to generation were rare. Furthermore, the immediate context in the first half of the twentieth

[3] For my purposes the best such account is Alexander George, *The Chinese Communist Army in Action: The Korean War and its Aftermath* (New York: Columbia University Press, 1967). See also Harvey Nelsen, *The Chinese Military System* (Boulder, CO: Westview Press, 1977).

[4] Here the contrast with the case of Japan in the 1930s seems particularly sharp, since China lacked the samurai class and the *bushido* martial spirit that helped provide a basis for Japanese militarism. It is hard to imagine a Western observer of pre-1911 China expressing the sentiments contained in Francis Xavier's 1552 remark about the Japanese: they "prize and honor all that has to do with war, and there is nothing of which they are so proud as of weapons." Quoted in Richard Samuels, *"Rich Nation, Strong Army": National Security and the Technological Transformation of Japan* (Ithaca: Cornell University Press, 1994) p. 94. It should of course be noted that Confucianism was one of the central contributing elements to the *bushido* ethos. See the discussion in Inazo Nitobe, *Bushido: The Soul of Japan* (Rutland, VT: Charles Tuttle, 1969 [1905]). As Richard Samuels pointed out in his discussant's remarks on the present paper, the political changes in Japan in the 1930s and 1940s altered the *bushido* code from its earlier emphasis on courtesy and honor to a heightened stress on bravery and a warrior spirit.

century was one in which warlords and later the Kuomintang (KMT) often resorted to forced conscription and cash payments in order to secure enough unwilling and unlucky soldiers, sometimes leading conscripts off in groups with their necks tied by rope. Given this context, the discipline of the resulting troops was highly problematic (outside of special elite units).

To counter this prevailing lack of élan and martial spirit, a large number of specific practices were developed in the Chinese Red Army and its successors.[9] Volunteers rather than conscripts were sought, with patriotic and social justice appeals used as primary aids to recruitment.[10] Simple disciplinary rules and slogans were endlessly repeated to drive home the message that the army should remain close to the people, and officers close to ordinary soldiers. In the latter case ranks and other visible signs of status distinction between officers and soldiers were eschewed, beatings by officers were forbidden, and channels were created for soldiers to voice complaints about mistreatment by their officers.[11] At the same time extensive efforts were made to raise the

[9] For simplicity I will usually refer hereafter to the various incarnations of the CCP's military force as the PLA, rather than using the changing terms used in different time periods up through the Korean War.

[10] The Eighth Route Army during China's civil war (1946–49) made much of the proclaimed policy of giving captured KMT troops an option—to go over to the CCP side and remain in military service, or to go home, with a modest travel fund provided. However, it should be noted that the CCP often mobilized recruitment campaigns in the areas it controlled, and "volunteering" during such campaigns, as in post-1949 China, was often the result of social pressure as much as individual desire.

[11] It is interesting to note that similar emphases developed in the Japanese military early in the 20th century. One of the leading figures in the promotion of Japanese militarism, Tanaka Giichi, argued that one of the fundamental reasons for Japan's victory in the Russo–Japanese war of 1904–05 was the social and communications gap between noble officers and peasant-origin soldiers in Russia. The closer relations between officers and men in the Japanese military should be further developed, Tanaka argued, by such measures as

prestige and material and psychological security of the troops, as by staging local sendoff banquets for new recruits, providing symbolic and other rewards to families that supplied soldiers, and ensuring a reliable supply of basic food, clothing, and other provisions for the troops.[12] The prestige of military service was also enhanced by the cultivated message that soldiers of humble circumstances could rise within the military and anticipate a responsible and prestigious job after demobilization. Indeed, it is a common observation that the post-Korean War demobilization conveniently provided seasoned ex-soldiers who filled many rural village and Party leadership positions and helped make possible China's relatively smooth agricultural collectivization drive in 1955–56.[13]

Much more was involved in producing effective discipline and military élan than innovative public relations practices. The CCP also imple-

---

having officers live in the barracks with their subordinates. See the discussion in Richard Smethurst, *A Social Basis for Prewar Japanese Militarism* (Berkeley: University of California Press, 1974), pp. 13–14. Also see Sheldon Garon, *Molding Japanese Minds: The State in Everyday Life* (Princeton: Princeton University Press, 1974).

[12] One manifestation of these practices was the special provisions in the 1950 Marriage Law of the PRC that divorce requests could not be filed against serving members of the PLA unless the soldier involved consented. In later years the links between soldiers and their home communities were to have fateful consequences. Minister of Defense Peng Dehuai's criticisms of the Great Leap Forward in 1959 were based largely on the negative impact on the PLA of soldiers anxious about their emaciated families or even wanting to desert to help out at home. Mao's angry counterattack at the Lushan Plenum in that year prolonged the Leap and increased its horrific death toll.

[13] Here the contrast with weak rural Party strength and collectivization disaster in the Soviet Union after 1929 is particularly sharp. See the discussion in Thomas Bernstein, "Leadership and Mass Mobilisation in the Soviet and Chinese Collectivisation Campaigns of 1929–30 and 1955–56: A Comparison," *The China Quarterly* 31 (1967): pp. 1–42; and Vivienne Shue, *Peasant China in Transition* (Berkeley: University of California Press, 1980).

mented a much more thorough political indoctrination and control system than had been followed in the Soviet Red Army. Not only were there political officers assigned to every unit to watch over military commanders and soldiers for signs of disloyalty, regular political study and group criticism rituals were a fundamental part of military training, designed to enable the CCP to control information and ideas and to mobilize group pressure on behalf of the official line. Building upon ancient Chinese practices of utilizing mutual surveillance for social control, these rituals were designed to make each soldier feel that any lapse of discipline or lack of bravery would be detected and reported by his comrades.[14] Positive inducements to soldiers were thus backed by extremely effective organizational practices that helped to maintain discipline even under duress.[15] All of these elements were, of course, backed up by a strategic doctrine which stressed to the troops that the keys to military victory by the PLA were the flexible and selective deployment of highly motivated troops in guerrilla warfare, rather than the numbers of troops employed in positional warfare or the amount and sophistication of weapons employed. As the Korean War dragged on and the PLA increasingly resorted to positional warfare and "human wave" tactics, the disjunction between strategic theory and practice

[14] See the discussion of these practices in George, *The Chinese Communist Army in Action*, chapters 5–8. For a more systematic exposition of the role of group study and criticism rituals in enforcing totalitarian control throughout Chinese society during the Mao period, see Martin Whyte, *Small Groups and Political Rituals in China* (Berkeley: University of California Press, 1974).

[15] Although the political indoctrination activities were aimed at creating "true believers" in CCP doctines and military missions among the troops, they did not depend upon successful conversion to be effective. Rather, the group rituals utilized were aimed at convincing each soldier that whatever doubts and fears he might hold were not shared by his zealous comrades. Group surveillance appears to have worked well to produce high levels of military discipline during the Korean War even among troops who originally came over from the KMT, but upon capture and incarceration the system collapsed, thus helping to explain the high levels of refusals of repatriation among Chinese POWs who had fought so effectively.

became increasingly apparent. Still, even today the emphasis on "man over weapons" and other aspects of the emphasis on the human element have not been completely discarded from Chinese military doctrine.

Obviously the PLA has not been engaged in any extended period of full-scale warfare since the Korean War, but a number of features of the social order helped produce highly motivated soldiers during the period from the 1950s through the 1970s. The first feature to note here is the nature of the system of recruitment of ordinary soldiers. Although on paper China has a system of universal conscription, in fact the PLA throughout was highly selective in picking among the millions of youths volunteering to serve. The great majority of new recruits were selected from the countryside, rather than from urban areas.[16] In addition to the highly laudatory picture of the PLA presented in official mass media, several features of China's social order helped make military service especially attractive to rural youths during the Mao years. After the 1950s a very strict system of migration controls made it almost impossible for rural youths to escape a life of agricultural labor and relocate to an urban area.[17] The two possible outlets for upward mobility were university admission and service in the PLA, and only the latter was a realistic possibility for most rural youths.[18] The physical examination

[16] This statement is the conventional wisdom among PLA observers, although I have not been able to find any specific statistics on the origins of new recruits in any period. So it is not altogether clear whether Chinese soldiers are more rural in origin than the underlying population (still about 70 percent rural in the 1990s), or whether preferential rural recruitment reflects a considered strategy of the PLA or CCP leadership or simply greater enthusiasm for joining the PLA in the countryside.

[17] The literature on the system of migration restrictions in China is extensive. See, for example, Martin K. Whyte and William L. Parish, *Urban Life in Contemporary China* (Chicago: University of Chicago Press, 1984); and Kam Wing Chan, *Cities with Invisible Walls* (New York: Oxford University Press, 1994).

[18] Far fewer youths were admitted to the universities each year than into the PLA, and urban youths relied on the superiority of their secondary schooling to occupy a disproportionate share of university enrollments.

and other types of screening of volunteers for military service were very rigorous, with only a small portion of those volunteering for service accepted.

One work on China's military published in 1977 captures the situation in these terms, "the PLA is one of the most attractive ladders of success in Chinese society. Living conditions are better in the army than on the rural communes and families of recruits get special treatment while their sons or daughters are serving their country. Upon release, PLA veterans are usually assigned higher paying or more responsible jobs than the average citizen can obtain. There is a much higher percentage of Party members in the PLA than in society at large; if a young recruit acquits himself well and is selected for reenlistment, he has a chance of becoming a Party member. Understandably, there is fierce competition to enter the ranks of the PLA."[19]

The sense of pride of ordinary soldiers was enhanced by the constant mass media bolstering of the PLA's image as a spartan force with a glorious tradition, an army that contributed in major ways to the welfare of the population. Images of soldiers growing some of their own food and helping flood-stricken communities, and annual campaigns for the people to love the army and the army to love the people (and from the early 1960s, for all civilians to "learn from the PLA") helped to maintain the appeal of military service—maybe good men do become soldiers after all!

The patriotic and martial inclinations of rural recruits were also reinforced by several other features of the village political order. Regular indoctrination activities were conducted by village party leaders, official controls on information prevented any alternative messages from being spread, and wired broadcasting systems blared martial music and party exhortations to villagers as they worked in the fields or relaxed in their homes. Rural youths were organized into "people's militia" para-

[19] Quotation from Harvey Nelsen, *The Chinese Military System*, p. 18.

military units which engaged in drills and guard duty, sometimes with locally based PLA units providing guidance. Through a variety of means, the message was conveyed that China was a country surrounded by enemies and threatened with invasion, and that each individual had to be ready to defend the motherland against its foes.[20] There are obvious parallels here with the military-sponsored effort in Japan in the 1930s and 1940s to create an intense spirit of militarism and preparation for war in Japanese villages, and also in the fact that rural youths were the major source of recruits for the Japanese army prior to and during World War II.[21]

The preponderance of relatively poorly educated rural youths who saw military service as a great chance to make something of themselves and benefit their families and who had grown up in an atmosphere of intense patriotic indoctrination tended to produce recruits who were both highly enthusiastic and also psychologically malleable. These recruits were then exposed to the powerful indoctrinational and disciplinary systems that had been developed within the PLA in earlier years. Military training consisted not simply of acquiring proficiency with weapons and battlefield tactics, but also in competing to display loyalty to the CCP and its doctrines and to Mao personally. Regular political study and group criticism rituals were used to reinforce the desired attitudes and to make the sharing of complaints and disaffection close to impossible. In the Cultural Revolution decade the PLA (as well as civilian society) was increasingly pressured to operate as a "virtuocracy," with willingness to enthusiastically respond to ideological slogans used as the basis

[20] See the discussion in Whyte, *Small Groups and Political Rituals in China*, Chapter 7; and Richard Madsen, *Morality and Power in a Chinese Village* (Berkeley: University of California Press, 1984).

[21] See the discussion in Smethurst, *A Social Basis for Prewar Japanese Militarism*. The central organizational device used in the Japanese case was the general organization in Japanese villages of the Imperial Japanese Reserve Association, supported by several related, military-sponsored organizations at the grass roots.

for evaluating individual performance.[22] Many of those ideological slogans emphasized that China under Mao's leadership was involved in a glorious but arduous and prolonged class struggle against hostile elements trying to undermine the construction of Chinese socialism. In the official framework of "contradictions" promoted by Mao, any individuals or groups who were labeled as being part of the "enemy classes" rather than the "people" should be dealt with by any means necessary, with no mercy shown. In the intense, pressure-cooker atmosphere produced by this indoctrinational system, high levels of positive motivation and hatred were generated. Within the PLA specifically, military officers were in a position to utilize the combination of status-striving and virtuocratic competition to mobilize soldiers to be ready to battle declared enemies.

However, that was not the role that the PLA was called upon to play during the Cultural Revolution. Rather, the PLA was for the most part charged with trying to restore and maintain order as Red Guard and rebel groups engaged in ferocious factional battles.[23] The Cultural Revolution was in some ways the apogee of the totalitarian mobilization of intense martial sentiments of loyalty and hatred in preparation for battle, even though it was mainly civilians rather than soldiers who actually engaged in Cultural Revolution battles. However, the Cultural Revolution also began a process that would make it more difficult to achieve such mobilizations in the future.

---

[22] See the discussion of virtuocracy in Susan Shirk, "The Decline of Virtuocracy in China," in James Watson, ed., *Class and Social Stratification in Post-Revolution China* (Cambridge: Cambridge University Press, 1984).

[23] It is one of the ironies of the Cultural Revolution that many of the civilian combatants in these factional battles took the PLA as their model, in keeping with the recurrent calls to "learn from the PLA." They dressed in military-style clothing, used weapons stolen from armories, and saw themselves as Chairman Mao's loyal soldiers, even as the PLA remained the one disciplined organizational force left in Chinese society and attempted to restrain the combatants.

Post-Mao Social Trends and their Implications for the Military

Even though to the outside world the Cultural Revolution appeared to epitomize a totalitarian system gone mad, the weakening of thoroughgoing regime controls over information and communications can be traced to this period (particularly the years 1966–69). With the CCP and other forms of organized authority under attack and moribund and the PLA the only remaining disciplined force in society, the regular political study, group criticism, and other indoctrinational rituals ceased temporarily. Millions of Chinese, particularly young people, were free to travel around the country to "exchange revolutionary experiences." This freedom was an eye-opener for many, with the realities of rural poverty, official venality, and factional violence contrasting sharply with earlier indoctrination and propaganda images. With political controls shattered, people were free to share information and rumors, and to develop a much more skeptical attitude toward official pronouncements. The prestige of the CCP suffered a blow from which it never recovered.[24] In the closing years of the Mao era attempts were made to "put Humpty Dumpty back together again" by reinstituting intense indoctrinational activities and political controls in restored organizational systems, but the damage could not be fully repaired.[25]

---

[24] It is hard to know the extent to which the prestige of the PLA suffered during this period as well. The fact that the PLA was the one force holding society together and limiting the chaos might have contributed to a positive image of the military. However, the fact that the PLA was being used to side with particular factions and repress others during the Cultural Revolution, and then was providing ultimate authority for such unpopular measures as the campaign to send urban youths to resettle in the countryside (which affected over 17 million urban youths in the decade after 1968) may have had the opposite effect. In any case, the weakened prestige of the CCP meant that the Party's efforts to portray the military in glorious terms were probably viewed more skeptically than in the past.

[25] The spontaneous popular demonstrations in the Tiananmen Incident of 1976 and subsequent developments, such as the Democracy Wall movement of

In the reform era a large number of developments helped to further weaken the systems of totalitarian control over information and communications. Central to these developments was the effort led by Deng Xiaoping and others to shift from mass campaigns and class struggle to modernization and economic development as the primary goals of society and the central basis for legitimacy of the CCP itself. The CCP also retreated from the Mao-era effort to micromanage every aspect of people's lives and allowed a wide spectrum of unorthodox ideas and organizations to emerge (or reemerge), ranging from Confucian study societies through Christian churches to ancestor worship.[20] Large numbers of victims of the campaigns and purges of the Mao years were also rehabilitated after 1978, and many of these individuals obtained positions as teachers, journalists, and writers, positions from which they could impart their bitter experiences and critical modes of thought to others. The open-door policy was also a major contributor to these trends, with foreign contracts, travel abroad, foreign broadcasts, the rise of exposé reportage and "scar" literature, and other developments helping to counteract the formerly monochromatic view of the world conveyed by the official media.

As a result of these and other trends, the political matrix in China has been fundamentally changed, even though the CCP still rules. In most organizations the political indoctrination rituals are now more occasional and perfunctory, and when attempts are made to reemphasize ideological controls (as in the aftermath of 1989) they are notably ineffective.[21] Individuals have access to a variety of sources of ideas and

---

1978–79, testify to the extent of mass discontent and fear that lay under the surface of the restored political control systems.

[20] The one major exception to this trend toward self-imposed restraint in controlling people's lives concerns family planning, where official controls and coercion have actually increased sharply since the Mao era.

[21] Observers report that the population treats most such attempts, such as renewed attempts to get people to "learn from Lei Feng" (a model soldier who

information against which to compare the official line, and for the most part they can discuss unorthodox ideas and grievances with friends and colleagues without the constant fear of activists and informers that was a hallmark of the Mao era. As a result of these developments, public opinion has arisen as an autonomous force in society that China's rulers must reckon with, as mentioned earlier in this paper.

One way in which these changes have been characterized is to say that China has changed from a totalitarian into an authoritarian political system. There are a variety of problems with this formulation, including the fact that the CCP still does not allow as fully autonomous organizations and associations as garden variety authoritarian states do and that in the realm of family planning totalitarian tactics still reign.[28] However, this way of describing the situation does at least help to capture the sense that today's young Chinese are growing up in a very different political and cultural atmosphere than did earlier generations. Instead of calling on them to be vigilant against class enemies the dominant slogans from on high encourage them to get rich and to produce more widgets for sale at lower prices; they can tune out the martial tunes left over from the Mao era in favor of pop music from Hong Kong and

---

was made a national model for emulation in the 1960s), with derision. In the aftermath of 1989 students admitted to a few "trouble spot" universities were required to undergo a year of military and political training before starting their academic coursework. Reportedly the experience made those students more alienated and critical than their predecessors, and the practice was abandoned after a few years. Also in the wake of Tiananmen, individuals who had openly voiced support for the demonstrations or participated in them were mostly able to escape the subsequent crackdown with at most perfunctory self-criticisms, with sympathetic colleagues and supervisors helping to shield them from the hardliners.

[28] One additional consideration is that to a considerable extent the "liberalizations" undertaken since 1978 have been initiated by the CCP, rather than extracted from the CCP by the force of popular opposition. Given this circumstance, there is always some doubt about whether the self-imposed limits on the CCP's totalitarian inclinations might be rejected in the future.

Taiwan, and in place of proletarian novels they can now choose from detective stories, science fiction, translated Western works, romance novels, and many other alternatives.[29] They have leaders who do not inspire awe and fervent loyalty, but indifference or even derision.

In addition to these changes, the reform era has also led to a number of other important shifts with potential implications for the type of individuals who become soldiers and their orientations. First, there has been some effort to increase the number of soldiers drawn from urban areas as part of the effort to build a more highly educated army capable of using modern weapons and engaging in sophisticated military operations.[30] Despite China's general economic improvement, there have actually been significant declines in secondary (upper middle) school completion in the reform era, with a higher portion than in the Mao era of those completing this level of schooling being urban youths.[31] However, to the extent that this shift is successful, it may bring into the PLA urban recruits who are more independent-minded and less malleable than their rural counterparts. If, as one source suggests, the shift to urban recruitment mainly involves the officer corps, the caste-like status

[29] As one indicator of these generational contrasts, questions asked in a survey the author directed in Baoding, Hebei in 1994 revealed that grown children differed from their parents quite sharply in a number of realms of attitudes and cultural preferences. For example, they were much less likely to feel that comradeship was a higher form of social relations than friendship, and also less likely to agree that society needs a unitary set of values enforced over all in order to avoid chaos. See Martin Whyte, "The Fate of Filial Obligations in Urban China," *China Journal* 38 (1997): pp. 1–31.

[30] David Shambaugh, personal communication. I have been unable to locate any statistics to judge the extent of this shift. See the discussion in "More graduates enlisted for army," Xinhua News Agency Report, Beijing, 30 November 1997, translated in British Broadcasting Company, *Summary of World Broadcasts, Far East*, 4 December 1997, no. 3093, pp. G 8–9.

[31] See the statistics presented in Martin Whyte, "City versus Countryside in China's Development," *Problems of Post-Communism* 43 (1996): pp. 9–22, especially Table 1.

barrier between rural and urban residents in China will be a new element weakening ties between officers and the men they lead."

Even with regard to the rural recruits that still predominate in the PLA the changes of the reform era pose challenges. Most of the structural features that made military service so attractive to ambitious rural males in the Mao era, as described above, have been weakened or eliminated. The post-1978 rural reforms restored the farm family as the major unit of production, thereby enhancing the importance of deploying limited family members to maximize family earnings. The explosive growth of township and village enterprises (estimated to employ over 125 million in the mid-1990s) made non-farm employment available close at hand in many rural areas. The weakening of the restrictions on migration made it possible to resume the pre-1958 pattern of migration into the city in pursuit of economic opportunity, with an estimated 80–100 million people joining this "floating population" at any one point in time. The improvements in living standards in rural areas during the reform era mean that service in the military for meager wages no longer looks so attractive, and the PLA has had to implement wage increases in order to combat growing difficulties in finding youths willing to serve. In short, there are now multiple paths to increased income and status available to ambitious rural youths, and military service no longer has the luster it did during the Mao era. There are even reports that women increasingly prefer to marry successful civilians rather than soldiers, with problems in the marriage market being an additional indicator of the PLA's fall from social grace."

"The new urban recruitment bias for PLA officers is noted in Charles Lovejoy, "China and Its Military Modernization: The Problem of Perspectives," in Charles Lovejoy and Bruce Watson, eds., *China's Military Reforms* (Boulder, CO: Westview, 1986), p. xviii. The caste-like status barriers between rural and urban date from the Mao era, not pre-1949. See the discussion in Martin White, "City versus Countryside in China's Development."

" See the discussion in Roxane Sismanidis, "National Security," in Robert Worden and Andrea Savada, eds., *China: A Country Study*, revised edition

These developments suggest that the image of military service may be reverting to its traditional Chinese mode, where it becomes the resort of those rural males who are closed out from other alternatives. And there is reason to doubt that even those village youths who do end up joining the PLA will be as malleable as their predecessors. As the reforms have heightened mobility and created new commercial opportunities for rural cadres and peasants alike, regular political indoctrination and discipline in the countryside have atrophied. Wired broadcasting systems of the Mao era no longer operate, with the existing lines often vandalized and sold for the copper they contain. The radios and televisions that are increasingly available in rural homes have advantages compared to the old wired system—they have knobs that can be turned off, and even when they are on they purvey a much more varied fare. Furthermore, recent research suggests that villagers are increasingly becoming obstinate and critical in the face of established authority, rather than obedient and timid, causing severe problems for those who try to lead them.[34] The declining prestige of the CCP in rural areas and the collapse of many local Party branches are major sources of the official drive since the late 1980s for village elections, but it remains to be seen whether this important local political reform will reverse recent trends and restore respect for authority among villagers.

Two additional developments contribute to the generally less favorable atmosphere for military recruitment than in the past. The first and most obvious is the PLA's role in the Tiananmen Square crackdown in 1989. That event sharply called into question the carefully crafted image of the PLA as a glorious organization dedicated to serving the people. Many Chinese, who had assumed that the PLA would never fire in anger against "the people," were severely shaken by the events of June

(forthcoming), and Yao Yunzhu, "Chinese Women's Role in the PLA," unpublished paper

[34] See the discussion in Lianjiang Li and Kevin O'Brien, "Villagers and Popular Resistance in Contemporary China," *Modern China* 22 (1996): pp. 28–61.

4th. Presumably this negative reaction was strongest in the cities, as the demonstrations of 1989 were predominantly an urban phenomenon.[35] However, even in the countryside the prospect of possibly having to face orders to fire on Chinese civilians may add one additional element to the declining allure of military service.[36]

A final potential contributor to the PLA's recruitment problems involves the implications of China's one-child policy, in force since 1979. Whereas in previous generations families usually had three to six children and in most cases more than one son, now increasingly families are having only one or two children, and rarely more than one son. In recent years close to 90 percent of families in large cities are stopping after one child, and even in the countryside, where a de facto two-child limit has been allowed since the mid-1980s, coercive enforcement in recent years has reduced the number of rural families going on to have third and higher order children, and has produced an overall fertility rate below replacement level.[37] As these birth cohorts approach conscription age, it is plausible that families might have considerable worries about

[35] Although the main event in 1989 took place in Peking, demonstrations were also reported at that time in more than eighty other Chinese cities. See the discussion in Jonathan Unger, *The Pro-Democracy Protests in China: Reports from the Provinces* (Armonk, NY: M. E. Sharpe, 1991).

[36] Partly in recognition of the "image problem" created by the events of 1989, in subsequent years there has been a major effort to expand and improve the People's Armed Police as the primary force assigned to deal with domestic disturbances. A good share of the demobilizations and reductions in force levels of the PLA during the 1990s have involved diversions of military personnel into the PAP. See the discussion in Tai Ming Cheung, "The People's Armed Police: First Line of Defence," *The China Quarterly* 146 (1996): pp. 525–47.

[37] See the discussion in Griffith Feeney and Yuan Jianhua, "Below Replacement Fertility in China? A Close Look at Recent Evidence," *Population Studies*, 48 (1994): pp. 381–394; also James Lee and Wang Feng, *Malthusian Mythology and Chinese Reality: The Population History of One Quarter of Humanity, 1700-2000*, unpublished manuscript.

having their only son placed in harm's way.[38] In addition to the traditional concern rural families have about continuing the family line, there is still no old age safety net available beside that provided by a grown son.[39] And insofar as parents tend to so cherish their only children or only sons that they treat them as "little emperors," even those who do volunteer to join the PLA may not make the bravest and most disciplined soldiers.[40]

Even with these multiple changes in the atmosphere surrounding PLA recruitment, given China's huge population it seems unlikely that there will be severe difficulties meeting recruitment targets for new soldiers in the years ahead.[41] However, the declining luster of military service

[38] A recent Chinese media account detailed the special efforts and inducements required in order to secure military enlistment from what is described as the first concentrated cohort of only children. See "More graduates enlisted for army," op. cit.

[39] In the traditional set of values, not having male descendants was considered the most severe violation of filial obligations, and sons were depended upon to provide old age support, to conduct ancestor worship rituals for deceased parents, and in many other ways. The old age support obligation remains crucial in rural China today, since daughters almost always marry out and have no further obligations to support their own parents. In urban areas the existence of pensions, changed patterns of coresidence, and other patterns have eliminated the essential requirement that a family have at least one son, and this development has helped to make stopping at one child, regardless of the sex of that child, more acceptable there than in China's villages.

[40] Within China there is a widespread popular assumption that today's only children tend to be pampered and spoiled, and as a result are turning out more selfish and obnoxious than the siblinged children of earlier generations. To date, however, there is no rigorous evidence from psychological surveys to substantiate these beliefs. See the discussion in Dudley Poston and Toni Falbo, "Effects of the One-Child Policy on the Children of China," in Dudley Poston and David Yaukey, eds., *The Population of Modern China* (New York: Plenum Press, 1992).

[41] Even if China has the world's largest standing army (at least, before the latest rounds of Chinese troop cuts), the number of men under arms compared to the total population is relatively low. One source cites the following soldier/total

does mean that the PLA will no longer be able to recruit the best and the brightest of rural youths as they could during the Mao era. And those who do join the military are likely to be less highly motivated, susceptible to discipline, and devoted to their nation's leader than were the recruits of the Mao era.

Conclusions

Given the trends discussed in this paper, it seems increasingly problematic whether the PLA in the future will be able to create as intense a martial spirit and willingness to make the ultimate sacrifice as in earlier times. The trends reviewed here can be grouped into two types of influences: those that weaken the allure of the PLA among potential recruits, and those that reduce the likelihood that the PLA will be able to mold recruits with the kind of totalitarian indoctrinational atmosphere that would produce the intense levels of morale and discipline desired. If these suppositions are correct, then China's military and political leaders should be less confident than in the past of their ability to rely on the "human element" to win military battles.

By the same token, these trends make the contrasts with the case of Japanese militarism in the 1930s much more striking than any parallels. Despite some recent stirrings of popular nationalism in the PRC, there is simply no sign of the intense grass-roots indoctrinational effort, rising militaristic spirit, and enthusiasm for opportunities to test one's bravery in battle against enemies that were characteristic of pre-war Japan.[42]

---

population ratios for selected countries: North Korea 1/20, Israel 1/31, Taiwan 1/47, Russia 1/79, United States 1/149 and China 1/389. See Yitzhak Shichor, "Demobilization: The Dialectics of PLA Troop Reduction," *The China Quarterly* 146 (1996): p. 359.

[42]The best summary available of the mechanisms used to produce these motivations in pre-World War II rural Japan, once again, is Smethurst, *A Social Basis for Prewar Japanese Militarism*.

It might be argued, however, that this analysis focusing on the development of the "human element" within the PLA is increasingly anachronistic and irrelevant. Indeed, Chinese military doctrine has gone through major changes in the last two decades that imply a reduced emphasis on "man over weapons" and related core ideas from Maoist military doctrine. A number of good reviews exist of these changes in proclaimed doctrine—from "people's war" to "people's war under modern conditions" and then in turn to "limited war under high technology conditions."[43] These changes involve a growing (although still disputed) consensus that future wars in which China may be involved will require different kinds of military operations, and therefore different kinds of military personnel and training, than in the Mao era. With sophisticated weaponry, high technology communications, and complex, multiforce operations increasingly called for, producing zealous soldiers may no longer be the key to victory. As a consequence of this recognition, the PLA has been swept by growing emphasis on professionalism, the restoration of ranks, an effort to expose most officers to training in military academies, foreign weapons purchases, the formation of elite units, and other developments that depart from the traditions of the Mao era.[44]

As is the case in the rest of Chinese society, such changes imply a heightened emphasis on meritocracy, and therefore a reduced stress on the virtuocratic ethos of the Mao era. One would expect that among

[43] See, for example, Nan Li, "The PLA's Evolving Warfighting Doctrine, Stategy and Tactics, 1985–95: A Chinese Perspective," *The China Quarterly* 146 (1996): pp. 443–63; and Paul Godwin, "People's War Revised: Military Doctrine, Strategy, and Operations," in Lovejoy and Watson, eds., *China's Military Reforms*.

[44] The restoration of the system of ranks, for example, was proclaimed as a goal at the end of the 1970s but took nearly a decade to accomplish, apparently due to internal resistance and disputes about how to evaluate and classify military personnel into the restored system of ranks. See the discussion on Harbaugh, "National Security."

ordinary soldiers, status and reward increasingly would be seen as linked to the mastery of specific military skills, rather than martial spirit and fervent loyalty to political doctrines and the leaders who expound them. As such these changes in military strategic doctrine are one additional important force weakening any effort to develop an intensive collective zeal for battle within the PLA. Or to state the case another way, it is not plausible that China's military leaders can "have their cake and eat it too" by combining an increasingly modernized and professionalized army with a Mao era-style stress on the "human element" as the deciding factor in warfare. All of these shifts imply a military that increasingly operates in ways similar to its counterparts in other countries, rather than proudly proclaiming that it is following an alternative model in which the spirit of its soldiers can overcome superior weaponry and manpower.

Insofar as these trends continue and are consolidated, with their consequences understood by China's leaders, they have a number of implications. Calculations of military advantage vis-a-vis adversaries must increasingly be made in conventional force size, weaponry, and military operations capabilities terms, rather than adding in an assumption of China having an additional "secret weapon" based upon superior mobilization of the human element. China may still pose a military threat to some of her neighbors in the future, since China would have the advantage compared to many neighboring states in these conventional metrics of military power.[45] However, in the case of the neighbor facing the most serious threat from China, Taiwan, it is highly doubtful that China's leaders would feel that the human element would weigh in their favor in the event of an attempted invasion or other form of full-scale combat. And in any future conflict involving the United States the prospects for military success would look even more forbidding. If the

[45] However, China's unimpressive performance in the brief 1979 border war with Vietnam may still give China's leaders worries on this score. Clearly in that conflict Deng Xiaoping and others were expecting quick and decisive victories which never came.

admittedly fairly speculative analysis of this paper is correct, the primary conclusion of this paper is that social trends in China imply that when facing future potential military conflicts, that nation's leaders are more likely to see the "human element" as a neutral or even negative factor. If that is the case, then China's leaders are less likely than in the cases of Japan of the 1930s or China of the 1950s to risk war—certainly against the United States, and even perhaps against some of her neighbors.

Discussion

Professor Richard Samuels (Department of Political Science, Massachusetts Institute of Technology) served as discussant for the paper. Samuels addressed the issue of *how the Chinese military today*, as analyzed by Whyte, *compares to the Japanese military of the 1910s and 1920s*. He points out that the wartime Japanese army had clear antecedents going back to its aggression against China in 1895, but that the United States was extremely slow to perceive Japan as a military threat. In fact, Americans had a sort of love affair with Japan in the early years of the century, establishing institutes devoted to the study of Japanese culture. They regarded Japan with a sense of *optimism about commercial possibilities*, much as Americans today see China.

He divides his comparison of wartime Japan with present-day China into three categories: situations for which there are clear sharp similarities, those for which there are near parallels, and those where differences are clearly defined.

Among the *clear similarities* is the *rural base of support cultivated by both militaries*. China and Japan mobilized entire villages, using existing social organizations to encourage nationalist values. In Japan, however, this rural focus did not diminish over time as it did in China. Another commonality is the way in which *both countries embraced a grievance against the outside world*, encouraging xenophobia.

Near parallels include the *extreme nationalism*, even fascism, of both countries, although by the 1930s this sentiment was long established in Japan. Samuels feels that nationalism is still developing in China today. Another quasi-similarity is the *cult of the fighting man* that pervades both militaries, which in Japan was a reconstruction of the Bushido code, initially chivalrous but which turned aggressive. Japan tradition-

ally has accorded somewhat greater value to fighting technology than has China.

An important *difference* is that *in Japan, the military always has been given high social status* as heir to the samurai tradition, while the merchant class was disdained. This has not been the case in China. A difference that Samuels regards as more consequential lies in the way that the Chinese state backs away from micromanagement of reform, while in the 1930s, *Japanese bureaucrats intruded into every aspect of life*.

Samuels concludes by noting that although China and Japan may look alike as authoritarian states at a point in time, it is *important to consider the dynamics* of the situation. Inter-war/Depression-era Japan was becoming poorer economically as its government moved from liberalism toward authoritarianism. China moved toward authoritarianism from a failed experiment in totalitarianism, and its economic power is improving as it goes through that transition. Hence, the two situations fundamentally are very different.

The question and answer session was led off with a question from **Hongying Wang** (Department of Political Science, San Diego State University) on why China is perceived as a threat at all by Americans. **George Quester** (Department of Government and Politics, University of Maryland at College Park [UMCP]) noted that Japan in the early 1900s, like China today, was deeply involved in world trade. He wondered whether anyone had done a study for Japan analogous to what he was asked to do for China; in other words, has anyone considered whether Japanese business contacts in California in that period had any impact on their military intentions.

Jon Sumida (Department of History, UMCP) challenged the idea that the United States didn't take the Japanese threat seriously. He noted that Admiral Mahan saw a problem with Japan already in 1902. Japan was making war plans in 1908–09 that presaged the First World War. Its

program in 1917 already foresaw Japanese naval expansion. The book by Barnhart, *Japan Prepares for Total War*, saw how WWI was fought in Europe, that in a future war Japan would engage in total mobilization of the population. There was no popular perception of the Japanese threat in the United States in 1900–20. But there were West Coast immigration restrictions. Mahan saw the connection: one would need naval forces to defend California. Nevertheless, in 1905–10, Japan looked like Italy, a budding democracy. Reischauer, in *Silken Samurai*, showed no backlash toward Japanese businessmen in the United States in the late 19th and early 20th centuries.

Samuels argued that there was nothing after the Russo-Japanese War (1905) to suggest Japan's later aggression, until the 1930s.

William Kelly (Kelly, Wooden & Associates) suggested that now that the Chinese Communist Party has benefited from improved economic growth and from not having to support the PLA, it may be willing to put resources into building up the PLA as a much more powerful force.

Dali Yang (Department of Political Science, University of Chicago) said that China was the largest developing country and an authoritarian one. A democratic China might fight wars, too. A fall in civilian employment would only temporarily increase the allure of the military. People don't want their only son fighting.

Robert Michael Field (INFORUM, UMCP) noted that the policy on children differed among provinces; in some, two only children were permitted to have two offspring.

Roger Cliff (RAND Corporation) questioned whether the psychological traits that recruits bring to the military are necessarily very important in defining the characteristics of that army, pointing out that new personnel are symbolically as well as actually stripped of any baggage they bring with them. Perhaps the success of an army depends on more straightforward considerations, such as how well soldiers do their job.

He wondered whether there were issues for which China could be mobilized. **Martin Whyte** (Department of Sociology, George Washington University) responded that such issues would include a direct attack on China itself, but doubted that people would respond as well to military adventures beyond China's borders. He added that it is unlikely that personnel can be totally remolded, and that the PLA today is probably even less able to reform recruits than it was in the past.

Samuels said Japanese firms recruit, train and mold new employees who are willing to make sacrifices to their employer.

David Segal (Center for Research on Military Organization, Department of Sociology, UMCP) and **Field** pointed out the growth in national pride in China.

Wang noted generational change in the PLA. Before, there was loyalty to a particular army, but since the reform process started, officers have been professionally trained and owe their career to performance.

Cliff said that old army associations have persisted within the government. For example, every general owes his promotion to Jiang Zemin.

Mancur Olson (IRIS Center, UMCP) pointed out a parallel between Japan after the Meiji Restoration and Germany after the reforms of the mid-nineteenth century. Both countries did extremely well under liberal market economies with good government, as well as any economies have ever done. Both, however, ultimately fell under the rule of a madman, with extremely bad consequences. The lesson, Olson claimed, is that anything can happen, and when it happens to such powerful nations, the results can be disastrous.

Kelly added that when rapid economic change generates a large group of losers, the potential for bad leaders to come to power increases. There was a large group of losers in Germany after World War I, when Hitler came into power. There are currently many losers in Russia. In

China, there may be considerable unemployment, which could lead to problems. **Anthony Lanyi** (IRIS Center, UMCP) also suggested that Hitler was not a random phenomenon, but a product of huge social and economic upheavals in Germany. **Samuels** elaborated on that idea for the case of early twentieth century Japan, and challenged Olson's characterization of that country during the Meiji period. He said that in Japan in 1890 the military could hold cabinet posts and people were regarded as subjects, not citizens. Social control and regimentation were the norm, liberalism was not. The Home Ministry was immensely powerful. Japanese fascism was therefore not that large a change from the political foundations already laid.

bate that point of view, arguing that if a society is going to support it, a military must reflect that society.

Kelly asked about the effectiveness of the National Guard. **Turner** said it depends on how well-managed the one million troops are. **George Quester** (Department of Government and Politics, UMCP) said that nobody in Beijing knows. There, people are more interested in the Revolution in Military Affairs.

In response to a question on why the Chinese have become "RMA-oriented," **Andrew Marshall** (Office of Net Assessment, Department of Defense) suggested that because the Chinese evidently are interested in becoming a great power in the future, they have looked to the United States, and in particular to the performance of the United States during Operation Desert Storm as a measure of what they must accomplish. Few countries have actually tried to compete with the United States.

Kelly and **Michael Pillsbury** (Department of Defense) noted that the Soviet machine tool industry had tried to compete, but after the USSR fell, decided to import various components.

Richard Samuels (Department of Political Science, Massachusetts Institute of Technology) noted that it would be enlightening to know more about the acquisitions process for systems equipment in China—whether they buy licenses for entire systems or only for parts—as a way of estimating the size of Chinese military capability. He noted that the Japanese will only license a military system if it is built with Japanese capital equipment, and wondered if the Chinese followed a similar procedure.

Roger Cliff (RAND Corporation) responded that the Chinese were trying to deepen their technological capacity. They can produce advanced microchips, but can only do so with imported equipment.

Chapter VIII
Summary Discussion

Stansfield Turner

A general discussion was led off by comments from **Professor Stansfield Turner** (School of Public Affairs, University of Maryland at College Park [UMCP]). He pointed out the importance of debates such as the current one, because they affect policymakers' decisions about where to put their defense expenditures. Huge uncertainties surround the question of whether China should be considered a serious threat to the United States, and so the probability that the PLA will be turned into a powerful fighting force must be assessed.

Recruitment was discussed, as well as the impact on the PLA of the reversion of Hong Kong. **William Kelly** (Kelly, Wooden & Associates) noted that as living standards rise for ordinary Chinese, the PLA may have to struggle to keep compensation for its troops in line.

Turner said that shortage of money can lead to less training and tactics development. The PLA hasn't fought since the Korean War, except for a small 1979 war with Vietnam.

David Segal (Center for Research on Military Organization, Department of Sociology, UMCP) elaborated on the interrelationship between the civilian and military sectors, in the United States, and in general. While the boundaries often become blurred, as they have in the issue of the PLA and its business interests, many, including Huntington, feel that it is important to insulate the military from civilian trends. Others de-

Dali Yang (Department of Political Science, University of Chicago) said that because of foreign exchange constraints, they usually buy only parts of systems. And because the Chinese government is more fragmented than Japan's Ministry of International Trade and Industry, it divides grants among several competing factories—which is suboptimal since no one firm is producing the whole product. This often leads to the inefficient situation in which entire systems are idled for lack of a few crucial parts.

The discussion turned to whether the Chinese army or navy is currently being favored by the leadership. **Samuels, Yang** and **Jon Sumida** (Department of History, UMCP) agreed that the navy is favored over the army. According to **Yang**, there is the perception of an increased need for coastal defenses. **Sumida** pointed out that the Japanese bought naval equipment and capital equipment, but with RMA one would need highly paid technicians.

Cliff then pointed out that, unlike many other countries including Japan, China does not idolize the warrior so much as the strategic thinker, and that this tradition of looking for a more clever way to do things is reflected in their current military planning. **Yang** expanded on this, noting that Deng and others since him have tried to modernize the military by recruiting better-educated personnel. After Desert Storm, there was another dramatic shift toward improved quality and more competitive technology.

Hongying Wang (Department of Political Science, San Diego State University) asked again what China has to gain by military conquest.

Mancur Olson (IRIS Center, UMCP) asserted that the current mix of business and military appears to be bad for both the military and for economic development. Businesses have ill-defined budget constraints, which lead them to be inefficient. Unless the Chinese reform their economy, their military will never be more than a paper tiger.

In response to Wang's question, **Anthony Lanyi** (IRIS Center, UMCP) recalled the previous conference in which some of China's potential strategic interests were discussed—access to shipping lanes, for example.

Robert Michael Field (INFORUM, UMCP) suggested that the distinction between inefficient state enterprises and private enterprise may be a false dichotomy, obscuring the fact that inefficiency is spread throughout the entire system. **Yang** agreed with him, and added that currently only 30 percent of the 500 largest state-owned enterprises were losing money. Returning to the larger issue of whether China is a threat to the rest of the world, he pointed out that while the newest generation of military leaders are more cosmopolitan and more technocratic and therefore less likely to be dangerous, no one can rule out the possibility that an evil genius will come to power.

Pillsbury reported that many Chinese authors of the RMA school predict major wars in the future, and although these wars will not directly involve China, China should be prepared to defend itself from collateral involvement. These writers fear that an evil genius will come into power in Japan, India or Russia. However, this is only one school of thought: the National Defense University of China concentrates on destroyers and conventional naval capacity. United States policy toward China most recently has focussed on transparency—which is not working very well, either because China is embarrassed about how backward it is, or because it has something big to hide.

This reminded **Turner** of an old London play with Alec Guinness, in which the chief scientist of an ant colony invented DDT and the ant-general saw himself going out of business.

SECTION FOUR

TECHNOLOGY AND MILITARY CAPABILITY

- ***Chapter IX. Strategic Factors in Decisions to Acquire Advanced Military Technology***

"China's Threat Environment: Implications for Defense Development and Procurement"
Presented by Professor David Shambaugh, George Washington University
Professor Michael Nacht, University of Maryland at College Park, *discussant*
Dr. Michael Pillsbury, Department of Defense, *discussant*

- ***Chapter X. The Capacity to Deploy Advanced Military Technology: Institutional and Organizational Factors***

"China's Potential for Developing Advanced Military Technology"
Presented by Dr. Roger Cliff, RAND Corporation
Admiral Stansfield Turner, University of Maryland at College Park, *discussant*

- ***Chapter XI. Concluding Discussion***

Chaired by Professor Thomas Schelling, University of Maryland at College Park

Chapter IX
Strategic Factors in Decisions to Acquire Advanced Military Technology

China's Threat Environment: Implications for Defense Development and Procurement

David Shambaugh

I think that the Office of Net Assessment, as usual, in looking forward into the future, has identified some key factors that are going to impinge upon the PLA and China's military modernization program. It is very important, I believe, to look at broad, systemic and contextual factors, rather than simply pure military factors, as PLA analysts often times do.

I am a political scientist by training. I am not a military specialist. I started looking at the PLA, in fact, as a graduate student 20 years ago and have had a more or less enduring on-and-off interest in the PLA ever since.

But I am a student of Chinese politics and Chinese foreign affairs and Chinese domestic affairs primarily. So I welcome this series, in a sense, as a way to look at some of the broader contextual and systemic factors that are going to impinge, already do impinge, have impinged upon China's military modernization program.

I would like to discuss some of the external forces—systematic international and regional forces—that are going to impinge upon and affect

China's military modernization at present and into the future. I do not have the kind of long-range vision that the Office of Net Assessment does. Five years is about as far as my imagination can stretch.

Since the other papers have tried to look at the PLA from within China, I thought it might be useful to have some discussion that contextualized China externally. The proposition I would like to advance is pretty straightforward: that China's external threat environment has never been better in 150 years. There is no direct military external threat at present to Chinese national security planners.

We can examine that proposition, and I will have a few things to say about the subject of perceptions towards the end of my presentation. That is, in fact, something which I think we ought to discuss here—in other words, how they look out at their region.

Let's start with the external environment first. Compared to the past, and I am not just talking about the Opium Wars, but the period of time—almost half a century now—in which the People's Republic of China has existed as a nation state, which has been a very troubled period for China. They have felt encircled, contained all around their periphery for most of this period of time. They have had border disputes with virtually every one of their neighbors, and they have fought border wars with several of them. And, in fact, I think it is accurate to say that they have fought more border wars than any country on earth in the last half century. There may be some exceptions somewhere in Africa or Central America, but they have had problems around their periphery, and therefore, one important point to put on the table straightaway is that they are highly sensitive to encroachment to their periphery. The question is, how does one define their periphery? They have had border conflicts with India, Vietnam and the Soviet Union, but have had antagonistic relationships with a number of countries around their periphery over most of the last half century. One need only recall the two-decade-long period in the 1960s and 1970s in which they faced dual adversaries;

dual superpower adversaries to the north, to the east, to the south, and indeed, India to the southwest.

At the height of that tense time, of course, the Sino–Soviet frontier was the most heavily fortified frontier in the world, even more so than the NATO–Warsaw Pact border. I may be wrong about that, but there were 44 heavily armed motorized rifle divisions on the Sino–Soviet frontier. The Soviets threatened surgical nuclear strikes against China in the 1968–1969 period. I remember a study Michael Pillsbury wrote called "Salt and the Dragon," I believe, a number of years ago during that time.

And those were credible threats indeed.

One can historically debate the role that the Nixon Administration played in deterring those threats, but nonetheless, China was on the verge of getting nuked in the late 1960s and was on the verge of getting nuked in the early 1950s by none other than the United States, had President Truman not sacked MacArthur. President Eisenhower also came dangerously close to a nuclear strike on China in 1955. This is a country that has had to face the Seventh Fleet, the Vietnam War to the South, American forces around its eastern periphery from Japan and South Korea on down, SEATO for a while, and so on. I am trying to get you inside the Chinese mind-set. As they look out, they have felt nothing but containment and pressure, backed up by profound military force, for most of the history of the PRC. They have also feared what they call peaceful evolution, from the Dulles period to the present subversion of their regime and their system by hostile western forces; certain hegemonies; and they have been, like all Chinese leaders since time immemorial, absolutely fixated on internal security.

They are constantly fearful that their country is about to erupt domestically, splinter, fragment, or have internal rebellions of one sort or another. And when such occurs, their history tells them that foreigners take advantage. This is what the Chinese call *nei luan, wai huan* (inter-

nal chaos, external pressure). So they believe that the way to reduce external pressure is to maintain internal stability. And indeed, if you look at the word in Chinese for security, *anquan*, that means "complete stability." It has a very different connotation than it does for westerners who think about security in external and largely military terms. They do not think of it in external or military terms at all. They think of it in internal, social and cultural terms.

Therefore, I think, when we have so-called strategic dialogues with the Chinese, we are frequently just talking right past each other. Westerners do not fully appreciate the orientation and the feeling of fragility that Chinese leaders have about their own internal society. Again, that is not unique to the Chinese Communists. Chinese leaders have felt this for a long time because they have indeed, historically, been plagued by internal rebellions and "splitist" tendencies, as they would now call it, for very many years.

At any rate, since the Cold War ended, (recognizing that there are still a couple of lingering factors, such as the divided Korea on their periphery) their external threat environment has been totally transformed and China now has cooperative, normal, diplomatic and trade relations with virtually all countries on their periphery. When one thinks back, only a decade ago or less, this was not always the case. China only normalized diplomatic relations with Indonesia, Singapore, Israel and other countries in the 1990s. They have put in place a series of CBSMs with India and Vietnam—Vietnam, a country with whom less than 20 years ago they fought a border war, and India with whom they fought one in 1962. Now, Sino–Indian relations are still tense as seen from both sides. If you talk to Chinese thinkers about national security, India ranks high in their fears. And, if you talk to Indian national security experts, particularly the Institute for Defense Studies and Analysis (IDSA), in New Delhi, they are absolutely fixated on China. The Chinese fear Indian domination (regional hegemony) of the South Asian region, aspirations to establish a presence in South East Asia, east of the Malacca Straits, which they consider to be their natural hegemonic sphere, and to sup-

port Tibetan independence. But generally speaking, there is this sense that India is an aspirant regional power certainly, and perhaps more. That gives the Chinese real trouble, as does Japan for the same reason. There is different baggage in each case. The Indians have an aircraft carrier. The Chinese do not. That really irks them. The Thais have an aircraft carrier. They do not like that either. So, there is ongoing insecurity, inferiority and a sort of aspiring regional hegemonic psychology in their thinking about India

Anyway, despite that and the frozen relations for a very long time, the two countries have in this decade, since Rajiv Gandhi's visit, really begun to relax tensions, and institute a variety of border CBSMs, demarcation talks, military exchanges, state visits and so on. It is a really improved atmosphere, but underneath it is a lot of distrust. (NOTE: This presentation was given prior to the May 1998 nuclear detonations by India). The same depiction would apply to Vietnam, as I know Vietnamese relations. But nonetheless, on the surface, China has correct and more cooperative improved relations with those two former adversaries, and they have established diplomatic relations with South Korea. If they have a problem with a country on their periphery right now, it is North Korea

The Sino–Russian relationship has been completely transformed. I do not read too much into the so-called strategic partnership in strategic terms, but if one looks beyond that in economic terms and, for our purposes here, military terms, there is quite a lot of substance to that relationship.

So the point is that China has a very relaxed security environment and by its own doing. I think Chinese diplomats, Qian Qichen in particular, have to be credited with pacifying their peripheral relationships and turning them positive over the last decade or so. This is very markedly different from the 1970s and from the 1960s, when China was trying to subvert these governments.

China, I would argue, in its region, is now a status quo power with one or two major exceptions, which I will get to, and that is in its views of the United States and Japan.

If one assumes that the status quo in East Asia includes 100,000 American forward deployed forces and American bilateral defense treaties in the region, then China is not a status quo power because they do not accept that status quo. We can go into that. They have toned down their rhetoric on this issue in the last six months, largely because I think a number of Americans have told them that it is not going down well. But that does not mean they have changed their view.

They would like an Asia free of American military forces, I think, pure and simple. Does that mean so that they can dominate the region? No. I do not think that is a causal linkage that one should make. And one should be careful in depicting potential Chinese "hegemony" in East Asia. One must distinguish among several different types of hegemony: benevolent hegemony, coercive hegemony, condominium hegemony and hierarchical hegemony. China could exercise hegemony in a number of different ways. It doesn't have to be coercive. Nor is hegemony a bad word in IR theory. It is a good word. It means leadership. We would not dispute American hegemony in the Bretton Woods post-war financial system. That brought stability to the international financial system. So it is Henry Kissinger and the Chinese who have given the term hegemony a negative cast. Do the Chinese aspire to regional hegemony? Yes, but not in a coercive form, in a hierarchical form that might be, as I argued in one of my articles, a kind of latter-day version of the tribute system—a pyramidal kind of system in which China is at the top. In essence, it would be a patron/client system where everybody knows their place, as a in good Confucian society they should. The patron provides what we would probably call "extended deterrence" to the clients, as well as trade favors. In return, the clients pay obeisance to the patron, the hegemon China in this case, and it supplies various raw materials and other inputs to the Chinese modernization program. It is not a coercive hegemony where China bullies its neighbors; where

China absorbs its neighbors; where China invades its neighbors. Not at all. It is similar to the way the United States operates with Latin America. I think that is the model on which the Chinese would aspire to having relations with their region.

Well, there are two problems with that. The United States is in the way and Japan is in the way. So, that brings me back to the point about getting Americans out of Asia. For this kind of relationship to evolve, the Americans have to withdraw from the region, and the Chinese are quite explicit in their writings and in their private comments about that. I think it is a source of great concern, and *precisely* what strategic dialogue between our two governments should be about.

To be sure, this is a non-status quo element to their regional policy, and their views that Japan should be kept in the box is also non-status quo. I do not think that is sustainable over the long term in Asia. Japan deserves and should play a greater regional role. The question is how, over what time period and how other Asian concerns about that can be accommodated.
With regard to Japan and the United States, I would say China has non-status quo aspirations in the region; toward the rest, though, China is much more status quo oriented than ever before.

Another element of China's increased status quo behavior in the world has to do with it having joined a number of IGOs and NGOs. Mike Lampton gives a figure in one of his recent articles of 700-plus NGOs. And they have joined just about all of the major intergovernmental organizations, including, very importantly, the key security regimes. They have been a member of the Conference on Disarmament for a number of years, but have acceded to the CTBT, the NPT, the Chemical and Biological Weapons Convention, and the Zanger Committee on Export Controls more recently. They have expressed their willingness to sign the covenant on political and civil rights of the United Nations. This is a major step forward. So, China no longer stands outside these regimes, and it is no longer hostile, necessarily, to these regimes. It is

indeed a member and has not violated these regimes. Then there is the MTCR. They are not a member of the MTCR, but they have, in essence, in the last couple of years, abided by MTCR guidelines. The point here is, again, that they have become much more "accommodation-ist" towards their region, towards the international system and perhaps even towards American alliances in the region. Perhaps they are beginning to realize, first of all, that they pushed to abrogate these alliances but that nobody else in Asia endorsed it. Several countries supported the alliances, and Singapore and others have taken steps to increase the American presence in the region. So I think the Chinese pushed the envelope a little bit, realized the rest of the region did not want any change, and so they are now accommodating themselves to the reality and trying to build their own military-to-military ties with Japan and with Australia. Again, this is a major change. Is it tactical? Is it strategic? Is it longer term and short term? I do not know. We can debate it, but it is happening.

Thus today China has a different, much more peaceful environment around its periphery. It is itself responsible, in large part, for that because it has put bad relationships right. It has done that, I think, for one reason above all: their preoccupation with domestic development and their fears of domestic social instability. They need a peaceful external environment if they are going to maintain their high levels of economic growth. This is a conclusion they came to before the Asian currency crisis. It has only been strengthened, though, as a result of the crisis, and there are a lot of issues therein about potential for instability in China.

But the Chinese leadership is determined that they need good relations with other nations, including the United States, and one sees them putting a lot of capital and time into that, including improving those relations with Japan and the United States.

Now, is this external environment reflected in the disposition of Chinese military forces? Do we see any demonstrable change in the deployments of those forces as a result of this new relaxed security environment?

Since the end of the Cold War we see almost zero evidence of redeployments or regarrisoning of forces, conventional forces. There has been no change in deployment of conventional forces, and by this I mean air as well as naval forces.

They are still deployed for three principal reasons. One is to defend the capital and key northeastern and industrial centers, still according to an in-depth defense doctrine, rather than the new peripheral defense doctrine. Second, they are still deployed near key internal lines of communication and transport, particularly rail junctions. And third, they are in optimal locations for internal security deployments. I do not see, given the increased investment that they have made in the last four or five years in upgrading barracks and bases and the livelihoods of their soldiers, that any massive redeployment is being contemplated. Indeed, they have consolidated deployments. There have been some, I should note, within the Shenyang military region, Liaoning military district, to be precise. They have moved the headquarters of three group armies. That's the only one I've been able to ascertain. What they have done is to downsize significantly. They demobilized close to a million soldiers between 1986 and 1996, and they are now in the midst of another half million demobilization, of which 250,000 have already been redemobilized and redeployed.

When the Chinese streamline something, you had better look carefully because there is more smoke and mirrors than reality to it, and I would suggest the same thing is going on with the current state council restructuring right now. Why? In the case of the demobilization a good number have gone into the People's Armed Police. Ten years ago the People's Armed Police was a very small force of about 150,000. Today it is 800 million strong. Where do those people come from? The PLA, in large part, with some recruitment, but largely with lateral transfers. Last year they transferred 14 entire divisions of PLA regulars and moved them laterally in the PAP. They intend to demobilize and downsize to 1.9 million soldiers by the year 2000, but maybe one mil-

tion of them have simply changed their uniforms and gone from the PLA into the PAP.

But there has been no significant regarrisoning and major redeployments as a result of the change in the external security environment. One would expect, given their tensions over Taiwan, the South China Sea and more general worries about Japan, redeployments in those three theaters. One does not see it on a conventional side. It is not there. The Nanjing MR has not been appreciably beefed up since the Taiwan issue has heated up. Similarly, the Guangzhou MR, vis-a-vis, the South China Sea. We have not seen a larger shift of naval assets down to Zhanjiang, to the South China Sea fleet from the east and the north fleets. They are ll still deployed essentially as they have been for a decade or more. That does not mean that they cannot be moved. The Chinese are very capable of moving large numbers of troops by rail rather quickly.

Does one see this new security environment being manifested in procurement? On the conventional level, no. One does not see—I do not anyway—any kind of crash indigenous development program, driven by any particular external threat. What one does see, and I think is pretty clear, is external acquisitions from Russia being driven by one particular threat or contingency (a better word, contingency, than threat): Taiwan. I doubt very much that the Chinese would have been interested in Sovremenny destroyers before 1996, until they had to start contemplating American carrier battle groups in the Taiwan scenario. So they have gone out and purchased two Sovremennys, but these have not been finished, as I understand it, much less delivered yet. As for SU-27 aircraft, they have 48, are waiting for another 24 to be delivered and have the license to co-produce 200 more in China. But one has to be careful about the co-production. My understanding of this is that they are kit assembly, and the Russians are not transferring production know-how to the Shenyang, Xian or Chengdu Aircraft Company, wherever these things are going to be manufactured. But they have an agreement, under license, to assemble 200. How long will it take them to do that?

Probably a decade. It would be my guess that they would be lucky to get 15 off the line every year.

They have also bought Kilo-attack diesel submarines, surface to air missiles and other systems from the Russians. And they have examined a great deal. The press is rife with speculation about purchases of Mig 29s, Mig 31s, TU-22 backfire bombers, all kinds of things. But, none of it has happened, and unfortunately a lot of analysts link these press reports together and create very scary scenarios.

So the Chinese are window shopping. They window shopped in NATO in the 1970s extensively and wound up buying very little, in fact. One has to pay for this stuff. Right?

One of the major impediments is going to be simple foreign exchange. Another major impediment is western embargoes on platform transfers and dual use and defense technology transfers to China post-1989. I do not see these being lifted any time soon in the United States, for political reasons, although I do sense that there is pressure building in the American defense sector to get into the China defense technology market. Not end-use items, but dual use and defense technologies.

Where foreign exchange is more likely to be relaxed is in Europe, where there is a very different system. There never was an official embargo. There were individual EU member states, which agreed on a program of self-restraint, basically. That is the way the EU works. It is a very odd organization. In the last year or so, a number of items are beginning to be sold to the Chinese, such as Searchwater radars from the UK. And the French and the Italians, in particular, are pushing to lift or recategorize the nature of this self-restraint so that they too can get into the tech transfer, and indeed, even platform transfer business with the PLA. If that happens—and I suspect it is really a question of when, not whether—then the pressure in this country is going to build very quickly indeed, and I think it is going to sneak up and bite the administration in the behind, because they are not thinking about it. As soon

as European defense contractors get the green light to go ahead and start negotiating multibillion dollar deals with the Chinese, Raytheon and everybody else is going to say, "Excuse me, President Clinton. What about us?" And then, the Pentagon or the president is going to have to say, "Well, yes, we do have a strategic dialogue with China. We have a strategic relationship with China. We have an extensive mil/mil exchange program with the PLA, but we do not want to sell them weapons." It is going to be very awkward. The Chinese, of course, will push hard from their side, saying "You Americans. We never did trust you. We know what your intent is: to weaken us, not to strengthen us." I think that we've got to start thinking through, on a policy basis, our responses to that eventuality. We should contemplate potential sales, and if so, in what areas?

In conventional Chinese procurement, domestically, one sees very incremental improvements, driven, I would argue, by a combination of two things: follow-on systems, such as any good bureaucracy will build, and doctrinal requirements.

The new doctrine of limited war under high technology conditions (peripheral war), has indeed placed greater revenue in the coffers of the Air Force and the Navy at the expense of the ground forces. So we do see doctrine as a driver of procurement. I do anyhow. I do not see external threat as a driver of indigenous procurement, however, and I would emphasize that the PLA's conventional order of battle—air, ground and naval – remains 20 plus years behind the state of the art and still considerably behind the qualitative levels of most of China's neighbors in East Asia and, to a certain extent, even India and Russia.

So I am in the school of analysts that says this is a military going nowhere fast, on the indigenous and the conventional level; however, if one looks at ballistic and cruise missiles, you have a very different story, and indeed, on the nuclear side as well. The gap is narrower. The Chinese have real pockets of excellence and strengths, and they are putting a lot of investment and energy into R&D in these areas. They

are putting their money into information warfare, laser guided munitions, electronic counter measures, ASAT weapons, PGMs, microwave weapons, GPS and satellite photo recon, over-the-horizon sensors, phaser radars and other things associated with high tech warfare.

We have to focus on this, but I think we have to understand two things. One is just how backward the conventional capabilities are and the fact that they are not putting money into building up their conventional services. You know, they are trying to plug the most critical gaps through external purchases, but otherwise, they have just sort of thrown up their hands and said, "we can't catch up." And they are, therefore, trying to concentrate their resources in other areas. Throw massive resources at a strategic project and you develop that pocket of excellence. That is how they got where they are today in ballistic missiles, starting in the late 1950s. So they are throwing massive amounts of money apparently at research in these areas. Does that mean, however, development? This leads to my second caveat. I think that we, and all people who study the PLA, should follow one basic cardinal rule: Do not confuse ambition with capability, or research with procurement. Do not confuse ambition with even the ability to test, develop prototypes, much less deploy and integrate into the force structure. Each of those stages are finite stages, in which the Chinese have experienced major problems. Take the Air Force, for example. The F-10, which is not a high tech weapon, is still in prototype stage after more than a decade of development. They just flight tested it this year. This is a reverse-engineered version of the F-16AB essentially, with Israeli Lafe avionics married into it. Even if and when they can get the plane off the ground and, perhaps put it into production, they are still eight to ten years away from deployment.

The aircraft industry may not be the best example because it has been fraught with so many problems over the years, but I think it is indicative. We have to remember that the Chinese record at reverse engineering has been abysmal, particularly in the aircraft area. They have just had problem after problem after problem. Even if they can

develop the plane, indigenously, integrating it into a force structure, in a combined force structure, it is a very difficult thing to do. Then, if you have Russian systems as part of your force structure, perhaps some French materiel, some American equipment, you are going to have a very eclectic force that is not very well integrated on a hardware level, much less on a command and control level.

So I do not see the external environment as driving procurement policy—except for Taiwan where the purchases from Russia, I think, are geared towards having the capability, seven or eight years from now, of bringing a credible threat to bear on Taiwan, if so ordered by the civilian elite. Right now, they do not have that. They do not have it amphibiously, they do not have it in air terms, they do not have it in naval terms, or subsurface terms. Any military commander's nightmare is that civilian leaders will order them to do something that they do not have the capability to do. The big lesson of 1995 and 1996 for the Chinese is just how little ability they have militarily, except for the ballistic missiles, to influence the Taiwan situation, much less if American carriers are involved.

So these purchases from Russia are, I think, geared toward having that ability in 2007, 2008, or 2010, somewhere in there. If the leadership said we have no other choice but to bring force to bear on the island, they would be in a position to do so. Other than Taiwan though, I do not see their indigenous or exogenous procurement driven by particular threats or contingencies.

These are objective measures. You can also see where they have deployed their forces; what they are spending; what they are procuring; how much flight time an SU-27 has, for example. But it is very important to study perceptions. I have spent a good part of my life studying perceptions. I think it is the key variable in international relations. You can bean count until the cows come home, and it does not tell you much about intent. That is where I think Michael Pillsbury's research—and others—these days is so important. By reading what the Chinese write

to themselves, not in journals and books that are geared towards us, one can probe as close as you can get to Chinese intent. It is very hard to talk to them. We have all had our frustrating conversations with PLA generals. They just are very frustrating because they will not even admit things that are already very well known.

If you read their national security analysts' writings about their region, you get the following picture: the United States and Japan are potentially threatening Chinese national security interests and have hostile intent towards China. Russia is now a benign and impotent power, although there is some interesting writing in certain military journals about changes in the Russian military. They are following the Russian military very carefully. Third, especially after 1995—and this is very important—they have begun to endorse the ASEAN Regional Forum and regional cooperative security. They have come 180 degrees on this issue, but they are very transparent about the reasons for it, because they see this as a good way to constrain American power in East Asia, pure and simple. If your objective is to get the American military out of Asia, this is a good method.

It is unclear and not probable that they buy into the norms that underlie these regimes. I do not think they do. They want to set the agendas of these regimes, and the ARF is one of them. So they figure, well, it is easier to set the agenda from within than from without. So they get in, but they have their own agenda, and it is not one that is necessarily compatible with an American agenda. Fourth, they see the Korean situation as essentially nonthreatening, again, very much at variance with American and Japanese assessments of the North Korean situation. Fifth, they view India with strong suspicion, despite the CBMs and the rapprochement of recent years. Sixth, ASEAN is seen as a new and nonthreatening regional power in East Asia, and they equate it on a power level. ASEAN is described as a pole in East Asian relations. Interestingly one finds in these journals, particularly military journals, but civilian too, no mention of Taiwan or the South China Sea as a national security concern.

So when you juxtapose the data on deployments and procurement, you see essential consistency. No direct immediate military threat to China, and accordingly, no need for an immediate defensive military action or crash program of procurement is required. The threats that China thinks it confronts are the United States and Japan, in a strategic and diplomatic way more than a military way; Taiwan, in potentially a military way, and these analysts in China argue, therefore, that the one way to counter the American threats is indeed multilaterally. It sounds contradictory, through Chinese thinking, which is usually excessively bilateral or unilateral, but that is the new thrust in the writings that I have picked up on in the last couple of years.

Discussion

The first discussant of Shambaugh's paper, **Professor Michael Nacht** (School of Public Affairs, University of Maryland at College Park [UMCP]), *challenged the assertion that the Chinese military attitude toward past and potential adversaries is generally benign.* He pointed out that some of Shambaugh's observations late in his presentation that China sees the United States and Japan as potentially threatening—are somewhat inconsistent with Shambaugh's paper and the earlier part of his discussion, and should be weighted more heavily. Nacht's own experience meeting with the Chinese together with President Clinton and Secretary of Defense William Perry reinforces his belief that the Chinese are in fact actively concerned with what they perceive to be United States attempts to contain their influence in their own region. There is a literature suggesting deep concern about the United States and Japan, and the leadership expresses deep concern about Japan.

Nacht discounts Shambaugh's claims that unchanged troop deployments are meaningful signals of policy, since those forces can be moved so quickly elsewhere, and he suggests that China's participation in international organizations should not be interpreted necessarily as a willingness to cooperate with those groups. He points to consistent violations by China of the Nuclear Non-Proliferation Treaty, which it signed, as evidence that *China's actions often betray its words.* More important indicators of intent might come from examining the positions of key players in the PLA leadership, the National Defense University, the Politburo, and the IAPCM (the Chinese equivalent of Los Alamos).

In contrast to Shambaugh's claim that China accepts a status quo relationship with Korea, Nacht suggests that China's apparent acceptance of Korea may instead be a prelude to a Sino–Korean alliance directed

at ending the U.S. Korean Security Treaty. Such *pessimistic interpretations of Chinese intent should be at least considered*, Nacht feels.

Nacht said that he would like to see Shambaugh *develop more completely the idea of asymmetric capabilities*. Shambaugh discussed briefly Chinese investment in the development of high-tech weapons, but failed to point out that this policy may be aimed at denying or thwarting American capability rather than at emulating that capacity. In other words, Chinese procurement may seek to cripple U.S. maritime capability, even without a bluewater fleet of its own.

Nacht would like to know more about the status of debate on RMA in China. The Chinese thought the United States would be throttled in Iraq, but were traumatized when they saw the United States force actually deployed: this triggered the RMA debate. More discussion of how China can leapfrog, where it makes sense to focus their military efforts, and how the Chinese really regard their partnership with Russia are all important questions.

The second discussant was **Dr. Michael Pillsbury** (Department of Defense). Pillsbury began his discussion with reminiscences about his work with Mancur Olson and with AID over the years, and expressed concern that *no one could fill Olson's role as an internationally recognized advocate for AID taking an institutional approach to international economic development.*

Pillsbury then addressed the *difficulty of figuring out what the Chinese military really thinks*. Official spokesmen give one story, writers such as Hu-Hsin describe other scenarios, but still there is the sense that the truth lies obscured in a "big black box." He commended Shambaugh's approach of looking at the evidence objectively, but also agreed with Nacht that other indicators may be more important.

Pillsbury suggests looking at *air and naval redeployments*, which he argues have taken place. The Chinese bought billions of dollars worth

of fighter planes from Russia in recent years, and put them on airbases near Taiwan. Their newest ships are located in the south, as is the recently revived Marine Corps.

Other important indicators of military readiness are the *improvements made to the highway and railway systems*. It is now possible to move several hundred thousand troops long distances overnight.

Part of the reason that so little is known about China is that the U.S. government has not given the subject a high priority. In some agencies, *Russian specialists still outnumber Chinese analysts* by twenty-to-one. Pillsbury agreed with Nacht that it is important to consider the *Chinese attitude toward the Revolution in Military Affairs*. While some PLA officials deny that they are thinking about the RMA at all, Pillsbury has found at least five books in Chinese on the subject. The RMA proponents in China are attacked by the conventional wisdom/local war school. It is a Chinese custom to deny existence of opposing views, hence the RMA debate is not acknowledged by its opponents

It is also worthwhile to take into account *what the Chinese think about the United States' intentions*. Pillsbury praised Shambaugh's book, *Beautiful Imperialists*, as a pioneering effort to understand the Chinese perceptions of the United States, which in spite of cultural exchanges and years of more open dialog, are still "bizarre." Even China's most well-informed agency feels that we have a grand strategy toward China of encroaching on the west through NATO and on the east through deceptive arrangements with Japan and Taiwan.

Pillsbury then referred to Air Force Major Mark Stokes' list of China's long-term military development programs. This evidence suggests that *China is working on space warfare technology*—the country has launched 70 satellites and has an astronaut training program. Many of these programs are not very technically sophisticated but they can be highly effective; for example, taking out communication satellites, which were crucial to the United States victory in Iraq. Other programs

on Stokes's list include laser, microwave and radio frequency weapon systems.

Pillsbury closed by commenting on the *range of estimates of the Chinese military budget*, which vary from U.S.$8 billion to $140 billion. Not knowing the size of the pie makes it very difficult to assess its various shares.

A short discussion followed Pillsbury's remarks.

Professor Thomas Schelling (School of Public Affairs, UMCP) noted the contrast between the positive Soviet response to having American and other NATO forces in Germany after World War II and Pillsbury's statement that the Chinese feel threatened by the presence of the Americans in Japan. **George Quester** (Department of Government and Politics, UMCP) added that while perhaps the Chinese claim that they resent the United States in Japan, they actually may be grateful to the Americans for enforcing Japanese disarmament. **Roger Cliff** (RAND Corporation) said that he spoke with Wu Xinbo, who said that in the long run, the United States should leave the region, but not in the short run. **Nacht** said that he had never heard the Chinese make serious requests to the United States to withdraw. **Pillsbury** responded that it is not in the Chinese style to make direct requests; they have been making more nuanced appeals for the removal of U.S. forces by suggesting that our military presence is a relic of the Cold War, and no longer needed. The Chinese calls for discussions of "multi-polarity" are also an attempt to reduce the influence of the United States in the region.

David Shambaugh (Sigur Center for Asian Studies, George Washington University) agreed with Pillsbury that the Chinese definitely want the United States out of the area, especially out of Korea, but that they don't talk about timing. There is a debate in China about U.S. forces in Asia—some see them restraining Japanese rearmament, while others disagree. The Chinese "new security concept" is to abrogate alliances, but join in collective security arrangements. They want wealth and

power first, and expect that military modernization will move in tandem with growth in income. This is shown in a RAND study by Michael Swaine.

He said that Michael Pillsbury's book will help define Chinese perceptions. China is still very backward; they're studying the RMA, but that doesn't mean they will understand it or be able to carry it out. Mark Stokes' paper is sobering in suggesting space/laser/microwave development, but again he *warned about confusing ambition with capability*. In ten to fifteen years, there may be a bifurcated PLA with backward conventional forces and some advanced high technology weapons. However, unless the Chinese have good relations with the West and a better educational system, they won't have access to good technology. Shambaugh closed by questioning whether we really want to improve relations with China, since closer ties would involve shared technology, thus bettering their capability for such high-tech warfare as Stokes mentions.

Chapter X
The Capacity to Deploy Advanced Military Technology: Institutional and Organizational Factors

China's Potential for Developing Advanced Military Technology

Roger Cliff

China's rapid economic growth and the demise of the Soviet Union suggest that China has the potential to become the United States' primary strategic rival in the future. According to the World Bank, China already has the world's second largest economy in purchasing power terms[1] and a 1995 RAND study even estimated that the size of China's economy would equal that of the United States by 2006.[2] Based on U.S. Arms Control and Disarmament Agency figures, China's economy is already almost as large as the Soviet Union's was at its peak in the 1980s.[3] Although China is much poorer on a per capita basis than either the United States or the former Soviet Union, its huge and growing economy certainly provides it with the base to support a formidable

[1] The World Bank, *World Development Indicators* (Washington, DC: The World Bank, 1997), pp. 6-9, 129, 134-136.

[2] Charles Wolf, Jr., K.C. Yeh, Anil Bamezai, Donald P. Henry, Michael Kennedy, *Long-Term Economic and Military Trends 1994-2015: The United States and Asia* (Santa Monica, CA: RAND, 1995), p. 8.

[3] U.S. Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers 1996* (Washington, DC: U.S. Arms Control and Disarmament Agency, 1997), pp. 65, 91.

military capability. Indeed, China already has one of the world's largest militaries, both in terms of manpower and in terms of numbers of major weapon systems.[4]

China's current military, however, while huge, is technologically backward. The major weapons platforms (combat aircraft, naval vessels, and main battle tanks) being produced in China are essentially upgraded versions of 1950s and 1960s Soviet equipment. Pockets of respectability exist in certain areas, such as ballistic missiles and anti-shipping missiles, but China possesses virtually none of the types of "smart" weapons demonstrated so effectively by U.S. forces during Operation Desert Storm in 1991. On the contrary, China's military equipment closely resembles (and is in some cases identical to) that of the Iraqi forces which were so soundly defeated in the Gulf War. In order for China to field a military that could challenge that of the United States, therefore, it would need a radical improvement in its technological capabilities.

The current period may be a particularly favorable time, however, for a radical technological improvement in military capabilities. Many military analysts have argued that a Revolution in Military Affairs is underway in which, after decades of essentially evolutionary improvements since the end of World War II, recent technological advances are resulting in a qualitative leap in the effectiveness of military systems.[5] If such a revolution is actually occurring, a rising power could potentially leapfrog past the United States by focusing its resources on developing new-generation weapon systems while the United States remains wedded to its huge stock of previous-generation weapons.[6]

---

[4] International Institute for Strategic Studies, *The Military Balance 1997/98* (London: International Institute for Strategic Studies, 1997), pp. 176–179.

[5] For example, see Eliot A. Cohen, "A Revolution in Warfare," *Foreign Affairs* 75 (2) (March/April 1996): pp. 37–54.

[6] The oft-cited historical analogy consists of the development of Dreadnought-type battleships at the beginning of this century, which rendered irrelevant Britain's overwhelming arsenal of pre-Dreadnought warships. It is worth noting, however, that although the Dreadnought revolution enabled

Chinese military thinkers are aware of Western writings on the RMA and see the implications for China, with some even predicting that the RMA will result in the United States losing its position of superiority.[7]

Alternative Paths to Military Modernization

There are fundamentally two ways by which China could upgrade the technological capabilities of its military: it could purchase sophisticated systems from abroad or it could produce them domestically. Although Chinese purchases of Russian weapons have made headlines in recent years,[8] China's leadership does not have a long-term policy of relying on imported armaments or technology.[9] The PRC has been hurt twice in its history by the cutoff of foreign weapons technology, once in 1960 when the Soviets withdrew the extensive technical assistance they had been providing and again in 1989 when Western nations suspended

---

Germany to begin afresh in its naval arms race with Britain. Britain itself led the way in the revolution by launching the Dreadnought and was able to maintain its naval superiority over Germany in the post-Dreadnought period.

[7] See Michael Pillsbury, ed., *Chinese Views of Future Warfare* (Washington, DC: National Defense University Press, 1997); and Barbara Opall, "Chinese Strategy Targets U.S. Loss of Warfare Edge," *Defense News* (9 - 15 June 1997): p. 4.

[8] For example, see Nickolay Novichkov, "Russian Arms Technology Pouring Into China," *Aviation Week and Space Technology* (12 May 1997): pp. 72-73; Stephen Blank, "Russia's Clearance Sale," *Jane's Intelligence Review* (November 1997): pp. 517-522; "Russian Imports Step In to Fill the Arms Gap," *Jane's Defence Weekly* (10 December 1997): pp. 27-28.

[9] Liu Huaqing, "Unswervingly Advance Along the Road of Building a Modern Army with Chinese Characteristics," *Jiefangjun Bao* (6 August 1993): pp. 1, 2, in *Foreign Broadcast Information Service: Daily Report - China* (18 August 1993): p. 19; Eric Arnett, "Military Technology: The Case of China," in Stockholm International Peace Research Institute, *SIPRI Yearbook 1995: Armaments, Disarmament, and International Security* (New York: Oxford University Press, 1996), p. 361.

various joint development programs in the wake of the Tiananmen incident.[10] In addition, China's leaders are unwilling to spend significant amounts of hard currency to fund foreign weapons purchases. Many of the acquisitions of Russian equipment have come in the form of barter (in one case, "a huge amount of canned fruit" was exchanged for a Il-28 bomber/transport) but recently Russia has been insisting on payment in cash.[11] The preferred goal of China's leadership, therefore, is to be able to domestically produce weapon systems technologically comparable to (or better than) those produced in the advanced industrial countries.[12]

There are several routes by which the technological capability of China's currently backward defense industries could be improved. One is by direct technology transfer from abroad. Although a number of programs involving Western countries were underway prior to the Tiananmen incident, since that time Western nations have imposed an arms embargo on China and China's primary sources of military tech-

---

[10] "Russian Imports Step In to Fill the Arms Gap," p. 28.

[11] Bates Gill and Taeho Kim, *China's Arms Acquisitions from Abroad: A Quest for "Superb and Secret Weapons."* (New York: Oxford University Press, 1995), p. 58.

[12] The recent imports probably have several purposes. First, they allow China to address critical deficiencies in its current military capabilities that Chinese producers are unable to satisfy. Second, they allow China's military to gain experience training and operating with advanced weapons systems. Perhaps most importantly, however, they facilitate China's mastery of the technology they embody. By studying the imported systems, Chinese engineers may be able to learn the principles of their design and incorporate them into domestically produced systems, either reverse-engineered copies of the imported weapons or indigenously designed versions. See You Ji, "High-Tech Shift for China's Military," *Asian Defence Journal* (September 1995): pp. 6-7. In addition, in some cases purchase of a certain number of examples of a system has reportedly been a prerequisite for beginning to transfer the production technology in the form of a co-production agreement. See Bates Gill, "Russia, Israel Help Force Modernization," *Jane's Defence Weekly* (31 January 1996): p. 54.

nology have been Russia and Israel.[13] This aid has been limited to certain areas, however, and Russian producers at least have been unwilling to provide China with what they consider to be the most critical technologies.[14]

Instead of technology transfer from foreign weapon makers, China's defense industries could acquire the technology to produce advanced military systems through indigenous research efforts. But although China has historically achieved some successes with this approach, most notably in developing nuclear weapons and ballistic missiles, these successes have required massive commitments of resources and have been the outstanding exceptions to an otherwise unimpressive record of technological progress.[15]

Several important developments in recent years, however, have created new opportunities for China's defense industries to improve the technological capabilities of their products. The first of these is the convergence between military and civilian technology. The rapid pace of advancement of civilian technology in areas such as electronics and information systems has resulted in a reversal of the traditional pattern in which technological breakthroughs that derive from weapons research are later applied to the production of civilian goods. Instead, in technological areas having civilian as well as military applications, it is military research and development that has lagged behind civilian ad-

---

[13] Gill, "Russia, Israel Help Force Modernization," pp. 54–59; Novichkov, "Russian Arms Technology Pouring Into China"; Pamela Pohling-Brown, "Checkered Chums," *International Defense Review* (February 1995): p. 38; "Arms Embargo Fails to Impact on China," *Jane's Defence Weekly* (31 January 1996): pp. 49–51.

[14] "Russian Imports Step In to Fill the Arms Gap," p. 28. However, hundreds of Russian defense scientists and engineers may be working in China without permission of the Russian government. Ibid.

[15] See John Wilson Lewis and Xue Litai, *China Builds the Bomb* (Stanford, CA: Stanford University Press, 1988) and "China's Ballistic Missile Programs: Technologies, Strategies, Goals," *International Security* (17: 2) (Fall 1992), pp. 5–39.

vances. As a result, there has been a movement to increase the use of "off the shelf" civilian products in the production of military systems. Even more fundamentally, however, the most important technologies in weapon systems are increasingly not those embodied in the purely military elements such as propulsion systems or warheads, but rather in the sensing and information processing components, which are often similar to or identical with components used in civilian systems (i.e., TV cameras, computers). Indeed, those who argue that a revolution in military affairs is occurring focus primarily on advances in information collection and processing.[16] This convergence between civilian and military technology means that it may be possible for China's defense industries to simply purchase from civilian producers many of the components critical to advanced weapon systems.

Simultaneous with the convergence of military and civilian technology has been the increasing availability of advanced technology on international commercial markets. This is partly the result of the spread of sophisticated commercial technology to countries outside North America and Western Europe, but also the result of the loosening of legal restrictions on technology trade by these countries. The Coordinating Committee on Multilateral Export Controls (COCOM), which limited technology exports to "Eastern Bloc" countries including China, was disbanded in March 1994 as a result of the ending of the Cold War.[17] It was replaced in July 1996 by the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies[18] but the Wassenaar Arrangement exerts significantly less control over the availability of advanced technology to countries such as China.

---

[16] Cohen, "A Revolution in Warfare."

[17] Ian Anthony and Thomas Stock, "Multilateral Military-Related Export Control Measures," in Stockholm International Peace Research Institute, *SIPRI Yearbook 1996: Armaments, Disarmament and International Security* (New York: Oxford University Press, 1996), p. 537.

[18] Ian Anthony, Susanna Eckstein, and Jean Pascal Zanders, "Multilateral Military-Related Export Control Measures," *SIPRI Yearbook 1997: Armaments, Disarmament and International Security* (New York: Oxford University Press, 1997), p. 345

This is partly because its List of Dual-Use Goods and Technologies has been revised to reflect the diffusion of advanced technologies to countries outside of the Arrangement, but also because it is by design a looser regime than COCOM. Whereas COCOM had strict control procedures under which any member (e.g., the United States) had the power to veto a technology transfer, the Wassenaar Arrangement is primarily a forum for exchanging information and discussing policy approaches. All decisions with regard to export controls are taken by the member states individually and implemented through their own national procedures.[18] Competition among the advanced industrial nations to sell to the burgeoning China market has given China the leverage to acquire virtually any civilian technology that does not have direct military applications.

Perhaps the most important development with regard to China's ability to develop advanced military technologies, however, has been the Chinese leadership's decision in the late 1970s to open China's economy to foreign trade and investment. This decision has resulted in a fundamental transformation of China's national technological capabilities. In 1978 China's civilian industries were producing goods whose quality and sophistication were such that they could essentially only be sold on China's poor and protected domestic market. Since 1978, however, and especially since 1992, China has been the recipient of massive amounts of direct foreign investment which has been accompanied by the transfer of manufacturing equipment and know-how from Japan, the United States, Europe, and elsewhere.[20] The value of China's annual exports has soared from less than $10 billion in 1978 to over $150 billion, with most being sold in North America, the European Union, or Japan.[21]

[18] Anthony, Eckstein, and Zanders, "Multilateral Military-Related Export Control Measures," p. 347.

[20] Actual direct foreign investment in China has exceeded $30 billion annually in recent years, a historically unprecedented level for a developing country. State Statistical Bureau, *China Statistical Yearbook 1996* (Beijing: China Statistical Publishing House, 1996), p. 597.

[21] State Statistical Bureau, *China Statistical Yearbook 1996*, pp. 580, 586-588.

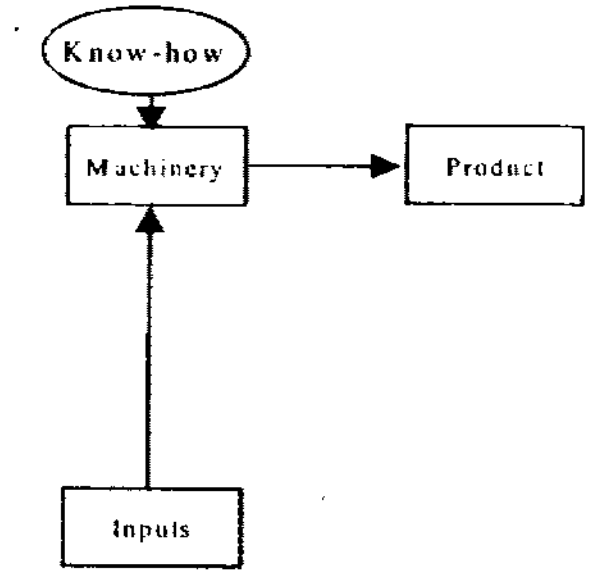
Much of China's exports consist of low-technology goods such as textiles and toys but, as a trip to any electronics store will reveal, a large number of high-quality consumer goods are also now "Made in China." The dramatically increased sophistication of the products of China's civilian industries suggests that these industries represent a potential source of technology and know-how for China's military producers.

Some General Characteristics of Technology

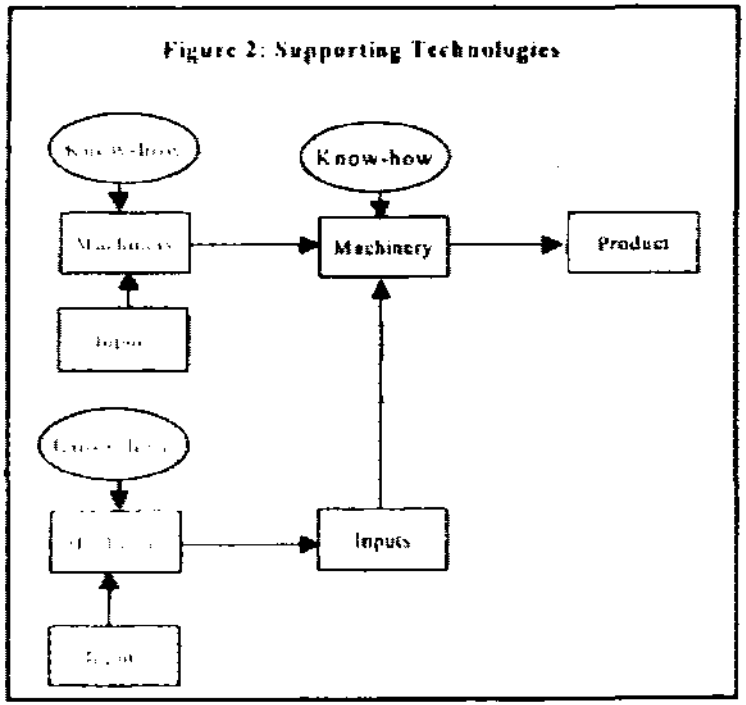
There are thus four potential sources of advanced technology for China's defense industries: foreign suppliers of military technology, foreign suppliers of civilian technology, China's own civilian industries, and the indigenous research efforts of China's defense industries. To understand the issues involved in exploiting these sources of technology for the production of advanced weapon systems, a closer examination of some general characteristics of technology is useful.

As illustrated in Figure 1, the production of any good (labeled "product" in the figure) requires three things: the machinery for producing it, the inputs to the machinery that are transformed into the final product (these include the components and raw materials that go into the making of the final product as well as with the electricity, fuel, lubricants, and so on that are consumed by the machinery), and the knowledge about how to use the machinery to transform the inputs into the final product (labeled "know-how" in the figure). But the inputs and machinery are themselves the outputs of production processes that involve other machinery, inputs, and know-how, as illustrated in Figure 2. And of course the subordinate inputs and machinery are themselves the products of other inputs, machinery, and know-how. This logic repeats itself until the inputs are raw materials extracted from the environment and the machinery is capable of self-replication.

Figure 1: Elements of Technology



This model illustrates several points. First, the term "technology," as generally used, actually comprises three things: inputs, machinery, and know-how. Having the technology to produce a given product means possessing all three of these elements. Possession of less than all of them is insufficient. For example, possessing the machinery and inputs required for the production of a good is useless if the know-how to do so does not exist as well. Conversely, acquiring the blueprints to an advanced system is worthless if the capability to produce the machinery or components required in its production does not exist.



Second, the ultimate limiting factor is always know-how. If the capability to produce a particular good does not exist, this is either because the know-how for combining the machinery and inputs that produce it does not exist, or because some of the machinery or inputs that produce it are themselves not available. But if a machine or input is unavailable, that is again because either the know-how for combining the machinery and inputs that produce it does not exist, or because the machinery and inputs that make it are not available. This logic continues until the point is reached at which the machinery and inputs are available but the know-how is not. Thus, technological progress is simply the result of advances in knowledge.

If the knowledge about how to produce a particular input or machine is lacking, of course, it can be substituted for by simply importing the missing equipment, so long as the knowledge about how to use it exists. This kind of incomplete technological capability, however, is vulnerable to cutoff of the crucial imported equipment.

A final point is that virtually all military systems are ultimately dependent on purely civilian technology. That is, even if the system itself is produced by machinery and components that do not have civilian applications, the machinery and components are likely to themselves be produced by machinery and components that do have civilian applications (and if those machines and components do not have civilian applications, then it is likely that *they* are produced by machinery and components that do, and so on.). In general, therefore, the more advanced a country's civilian technology, the greater potential it has for fielding advanced military systems. Conversely, a country whose civilian technology is backward will be unable to produce sophisticated military systems unless the machinery and components for producing them are imported.

These general points have some specific implications with regard to China's ability to exploit the four potential sources of technological progress referred to above. First, transfers of military technology, to the extent to which they consist of transfers purely of know-how rather than of equipment, will only advance China's technological capabilities if China possesses the ability to produce the underlying machinery and inputs. Thus, even purely military technology transfers will ultimately be limited by the capabilities of China's civilian technologies. Conversely, the mere availability for purchase of machinery and components capable of being combined into advanced weapon systems will not enable China to actually produce those systems unless the knowledge about how to combine them is developed. Thus, regardless of the availability of military technology transfer or imported "dual-use" equipment, the ability of China's defense industries to produce advanced weapon systems will be limited by the technological capabilities of China's civilian industries and the capacity of China's defense industries to develop new technological knowledge.

Determinants of Technological Progress

Writings on technological progress identify a number of factors that affect the ability of countries to develop new technologies. These include human capital, technological effort, incentives, and institutions.[22] Human capital includes formal education and literacy but also more specific technical and managerial skills. It is thus created not only by the obvious route of formal education, but also by non-degree training programs, in-house training centers, and informal learning activities such as on-the-job training and experience. All of these are affected by a society or enterprise's "legacy of inherited skills, attitudes, and abilities."[23]

The mere presence of human capital is of course insufficient without an actual effort to apply it to technological innovation. This includes formal research and development activities but also simply the process of being involved in production. Many innovations and improvements occur on the shop floor or as a direct result of routine production efforts, rather than in research and development laboratories. Conversely, purely formal research efforts are likely to be inappropriate without information about the practical requirements and limitations of production. Because of its heterogeneous nature, technological effort is difficult to measure directly, but proxies can been found in measures such as numbers of personnel involved in technical tasks, expenditures on formal research and development, numbers of scientific and technical publications, and numbers of innovations and patents.[24]
Regardless of the quality of human capital and level of technological effort, worthwhile innovations will not occur if the incentive structure is inappropriate. For commercial technologies, incentives include the overall macroeconomic environment (stability of the economy, interest

[22] The following draws primarily on Sanjaya Lall, "Technological Capabilities and Industrialization," *World Development* (20: 2) (1992): pp. 165-186.
[23] Lall, "Technological Capabilities and Industrialization," p. 170.
[24] Lall, "Technological Capabilities and Industrialization," p. 170; Caroline S. Wagner, *Techniques and Methods for Assessing the International Standing of U.S. Science* (Santa Monica, CA: RAND, 1995), pp. 4, 29-45.

rates, inflation, exchange rates), competition, and the efficiency of markets for capital, labor, and technology.[25] For defense technologies, however, these may not be the relevant variables or they may operate in different ways. For example, the decision to pursue a particular military capability will generally be the outcome of a bureaucratic or political decision. While this may involve a cost-benefit analysis, such an analysis will include measures of national security in addition to purely economic considerations. Thus, macroeconomic factors that would have a major effect on a business decision, such as the stability of interest rates or inflation, may be of only minor importance.

Similarly, competition is generally much more limited for defense industries. Foreign suppliers typically do not compete directly with domestic producers in countries with major defense industries. While a protected domestic market is often a favorable condition for the development of indigenous technological capabilities in their infant stages, once an industry is established, the lack of foreign competition may deprive it of an important stimulus for further innovation.[26] Similarly, exports are generally only a secondary source of revenues compared to government contracts for most defense producers, so competition in export markets is also generally of only minor importance. Also, even purely domestic competition often works differently for defense industries than for typical commercial producers.[27] Revenues are derived from government contracts which may be awarded according to principles other than pure merit. In addition to simple corruption, alternatives can include a norm of spreading contracts equally among a certain number of firms. During the 1980s in the United States, for example, it was argued that the government needed to ensure that a certain number of combat aircraft manufacturers survived, and therefore a company that lost out in the competition for one major contract would receive special consideration when the next contract was awarded. In

[25] Lall, "Technological Capabilities and Industrialization," pp. 171–172.
[26] Lall, "Technological Capabilities and Industrialization," p. 171.
[27] See Thomas L. McNaugher, *New Weapons, Old Politics: America's Military Procurement Muddle* (Washington, DC: The Brookings Institution, 1989)

addition, often defense manufacturers are not private, profit-making firms but instead state-owned corporations, industrial units, or design bureaus. Competition therefore will not be based on the profit motive. Competition will still exist, of course, with bureaucratic goals such as revenues, resources, or prestige taking the place of profits.

The significance of factor markets is also different for defense industries. For example, whereas in many developing countries the availability of financing for long-term or risky projects may be problematic, since defense R&D is funded by the government rather than debt or equity offerings, the efficiency of capital markets is largely immaterial. On the contrary, because availability of funding is a bureaucratic or political decision, the price signals that a properly functioning capital market would be able to send are not available.[20]

Efficient labor markets, on the other hand, would appear to be as important for developing defense technologies as they are for commercial technology, since the ability to attract labor with the appropriate skills is an essential requirement for technological progress. One possible source of labor market inefficiency peculiar to defense industries, however, is the relationship of the work to national security, which may mean that foreign workers or workers from certain domestic groups (ethnic minorities, or radical political parties, for instance) are excluded from employment regardless of their abilities.

Efficiently operating technology markets also appear to be as vital for defense technologies as they are for commercial technologies, but here the barriers to efficiency appear to be even greater than for labor markets. Secrecy measures impede the flow of information about what (military) technologies already exist in-country as well as prevent organizations that develop new technologies from being able to market them, and other nation's export controls may limit the availability of foreign technologies.

---

[20] And of course many defense-related research projects are secret, so it would be impossible for capital markets to make informed decisions.

The state-owned nature of the organizations involved in developing military technologies means that other incentives may apply in addition to those identified for commercial technologies. In addition to institutional goals such as revenues, resources, or prestige, these could include incentives targeted directly at the personnel or departments involved (for example, promotions, bonuses, and recognition). Alternatively, the incentive for an organization to develop a particular technology may simply be that it is ordered to do so.

The last, and often overlooked, element critical to the development of technological capabilities is institutions. For commercial technologies these include a legal framework supporting industrial activity and property rights, but also industrial institutions (those that promote interfirm linkages, provide support to smaller enterprises, or help firms to restructure and upgrade), training institutions, and technology institutions.[29] Examples include subcontracting networks, business associations, technology extension programs, specialized commercial providers of technology services, engineering consultancy firms, advanced skills training institutes, and standards and testing bureaus.[30] Again, because defense industries receive their funding directly from the government, are often not allowed to patent or market their innovations, and in many cases are publicly owned or even part of the government, the importance of legal institutions is probably less for the development of defense technologies than it is for commercial technologies. The significance of the other types of institutions is probably not.

[29] Lall, "Technological Capabilities and Industrialization," p. 172.

[30] Greg Felker, "Malaysia's Industrial Technology Development: Firms, Policies, and Political Economy," in Greg Felker and K.S. Jomo, *Malaysia's Industrial Technology Development* (London: Routledge, forthcoming).

China's Prospects for Developing Advanced Military Technology

Two of the four potential sources of technological progress in China's defense industries—direct transfer of foreign military technology and acquisition of foreign commercial technology—are external in origin. As such, their potential contribution to the development of advanced military technology in China is difficult to assess, depending as it does on the policies of countries other than China. As argued above, however, in any case the ability of China's defense industries to assimilate these technologies will depend on the other two potential sources of technological progress for China's defense industries: China's civilian industries and indigenous research and development efforts in China.

A forthcoming survey of China's technological capabilities in eight militarily significant industrial sectors finds that China's technology in these sectors is highly uneven, with state-of-the art capabilities in some areas and virtually none in others.[31] Consequently, while China is acquiring advanced technology in many areas with potential military applications, China's civilian sector remains an incomplete source of technology for military systems. The remainder of this paper, therefore, focuses on China's capacity for developing its national technological capabilities. As argued above, this hinges on four main issues: human capital, technological effort, incentives, and institutions.

Human Capital: Informal types of human capital building are difficult to measure, but at least a partial picture of China's human capital resources can be derived from available statistics on formal education. Primary education has long been one of China's strengths relative to other developing countries. According to Chinese statistics, each year since 1975 more than 90 percent of all elementary

[31] Roger Cliff, "The Military Potential of China's Civilian Technology," (forthcoming). The eight sectors are: aviation, chemicals, biotechnology, electronics, computers, manufacturing, nuclear power, and space.

school-age children have been enrolled in school and this rate increased to an average of 97.5 percent between 1985 and 1995. Elementary school graduation rates are also high—about 91 percent of the children enrolled in elementary school in 1989 graduated six years later. Thus, about 89 percent of the population has been receiving an elementary school education since 1985 and at least 85 percent since 1975.[32]

Secondary education has been more restricted in China, however, with competitive examinations required for admission and placement. In 1985 only 67 percent of elementary school graduates in China enrolled in middle school. Three years later, 86 percent of them graduated. Thus, only about 46 percent of current 24 year-olds in China received a middle school education. Enrollment rates for middle school have increased significantly in recent years, however, with 89 percent of elementary school graduates enrolling in middle school in 1995. Coupled with increases in the elementary school enrollment rates, this means that about 65 percent of current 14–15-year-olds will receive a middle school education and this number will likely continue to increase in the future.[33]

High school has been even more restricted than middle school. As late as 1988, only 38 percent of all middle school graduates (that is, of the 46 percent of the population that received a middle-school education) enrolled in high schools, including vocational and technical schools. Of these, 89 percent graduated. Thus, only about 16 percent of current 24-year-olds in China received a high school education. High school enrollment rates have increased somewhat in recent years, to 48 percent of all middle school graduates in 1995. Coupled with increases in middle school enrollment this means that about 23 percent of current 18-year-olds will graduate from high school this year.[34]

---

[32] State Statistical Bureau, *China Statistical Yearbook*, pp. 632, 637.
[33] Ibid.
[34] Ibid.

Higher education has been the most restricted part of China's educational system. In 1980 only 4 percent of all high school graduates were admitted to college. By 1995 the proportion had risen to 23 percent[35] but this still means that only about 4 percent of current 21-year-olds in China will receive a college education. Of these, about half are attending three-year colleges and half are attending universities.[36]

Assuming none of the above trends are reversed, the above statistics suggest that in 2005 about 6 percent of China's 22-year-olds will have received a college education, 28 percent will have received a high school education, 66 percent a middle school education, and 90 percent an elementary school education.

Only a small fraction of college graduates in China attend graduate school. From 1985 to 1995 about 7 percent of all college graduates enrolled in graduate school in China. In addition, of course, a number of college graduates have gone abroad for study. From 1985 to 1995 about one percent of all college graduates left to study abroad.[37] In recent years this proportion has increased dramatically, with 19,000 students, equal to 3 percent of all college graduates, leaving to study abroad in 1994.[38] Somewhat less than half of the students who have left since 1978 have returned so far, however, so this group contributes only partially to China's human capital base.[39]

---

[35] About half of China's high school graduates that year attended vocational or technical schools which are not intended for students going on to college, so the admission rate for students attending nonvocational high schools was about 46 percent.

[36] State Statistical Bureau, *China Statistical Yearbook*, pp. 632, 634, 637.

[37] Many of these left after attending graduate school in China, therefore the two groups overlap.

[38] Some of these were probably undergraduate students.

[39] State Statistical Bureau, *China Statistical Yearbook*, pp. 632, 633.

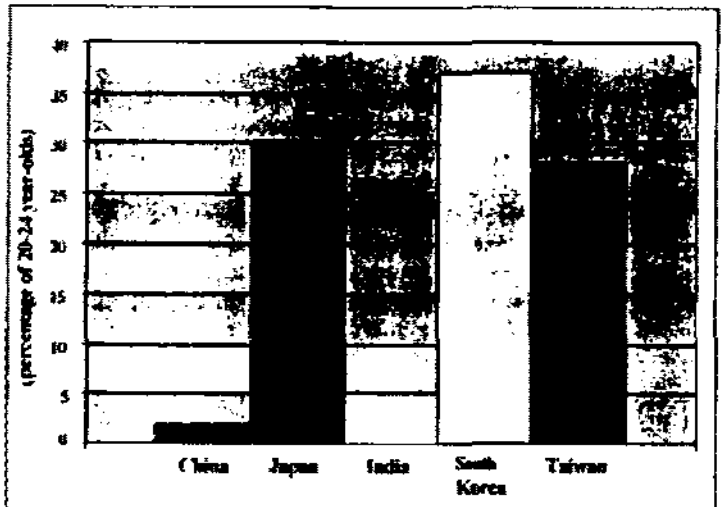


Figure 3: University Enrollment Rates

The relatively high levels of primary education in China provide it with a good base of literate workers who can be trained to perform skilled tasks. Beyond this level, however, China's education system compares poorly with other Asian countries. In Taiwan, for example, about 99 percent of the population attends middle school and 88 percent of junior high school graduates enroll in high school. Of high school graduates, 65 percent enter college. At any given time roughly a quarter of Taiwan's population is enrolled in school (including college). China's current elementary and middle school enrollment rates are similar to those of Taiwan in the 1970s but its high school and college enrollment rates are considerably lower.[40] China's educational rates compare particularly poorly in higher education. Even India sends almost twice as much of its population to four-year universities as does China, and

[40] *Taiwan Statistical Data Book 1994* (Taipei: Council for Economic Planning and Development, 1994), pp. 264, 268.

countries such as Japan, South Korea, Taiwan, and Japan send 20–40 percent to universities (see Figure 3).[41]

In absolute numbers, of course, China's human resources are considerable, particularly in science and engineering. While from the point of view of the technological level of a country's economy as a whole the average level of worker education is probably the more relevant measure, with regard to efforts to develop new technologies the absolute number of scientists and engineers available is probably more important, although undoubtedly the number of scientists and engineers needed simply for routine production increases as the total number of workers increases. About 309,000 bachelor's degrees were awarded in China in 1990, a third as many as in the United States and less than half as many as in India, but only somewhat fewer than in Japan and far more than in Taiwan or South Korea (see Figure 4).[42] China compared even more favorably in natural science and engineering, where roughly the same number of degrees were awarded in China, India, and the United States, while Japan, South Korea, and Taiwan only awarded 65 percent, 31 percent, and 10 percent as many degrees, respectively, as China did (see Figure 5).[43]

---

[41] Jean M. Johnson, *Human Resources for Science and Technology: The Asian Region* (Washington, DC: National Science Foundation, 1993), pp. 5–12.

[42] Johnson, *Human Resources for Science and Technology. The Asian Region*, pp. 61–65. In 1995, 325,000 bachelor's degrees were awarded in China (State Statistical Bureau, *China Statistical Yearbook*, p. 634). Data for other countries was not available for years after 1990.

[43] Johnson, *Human Resources for Science and Technology: The Asian Region*, pp. 61–65. Of course, managerial skills are highly important to technologically sophisticated operations and college graduates with degrees in the social sciences and nonscience fields are well suited for managerial roles, but the development of new technologies is primarily performed by those with training in the natural sciences and engineering.

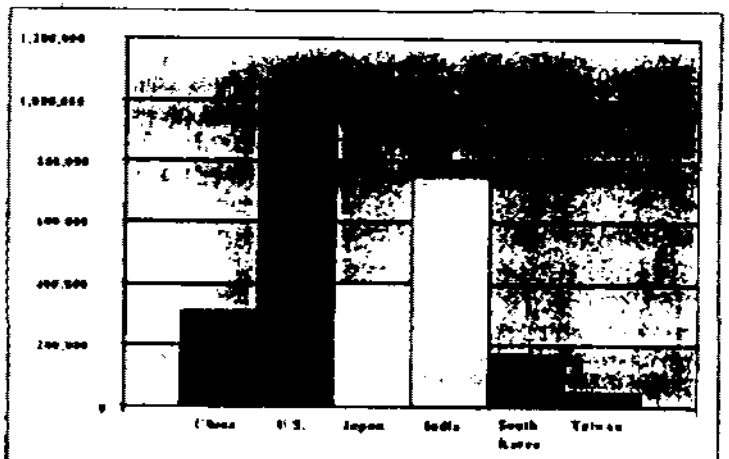


Figure 4: Bachelor's Degrees Awarded

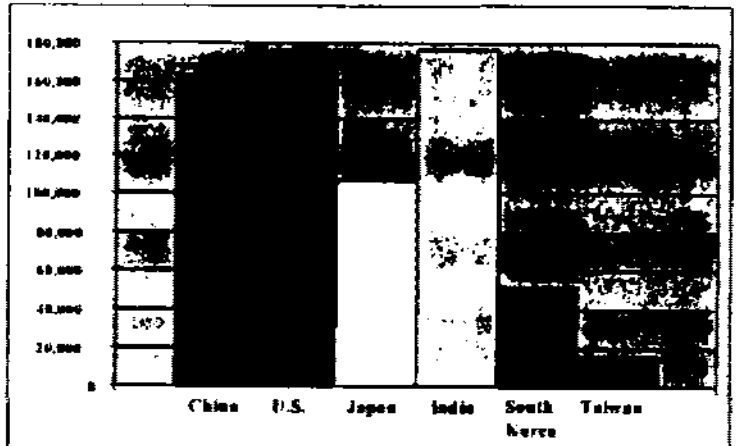


Figure 5: Bachelor's Degrees In Natural Science and Engineering

In terms of advanced (master's and doctoral) degrees in science and engineering, China does not compare quite as well. Nearly 67,000 advanced degrees in these fields were awarded in the United States in 1990 and both India and Japan awarded about 36,000 while China awarded only 21,000. But this was still far more than the 7000 in South Korea and 4000 in Taiwan (see Figure 6). China's relative position declined further in doctoral degrees, where only 1800 were awarded in natural science and engineering in 1990 compared to 16,000 in the United States and 4800 in India, although Japan only awarded 1900 doctorates in these fields. Korea and Taiwan awarded 800 and 300, respectively (see Figure 7). Of course a large proportion of the doctorates awarded in the United States were earned by foreign nationals, including over 900 by Chinese nationals.[44]

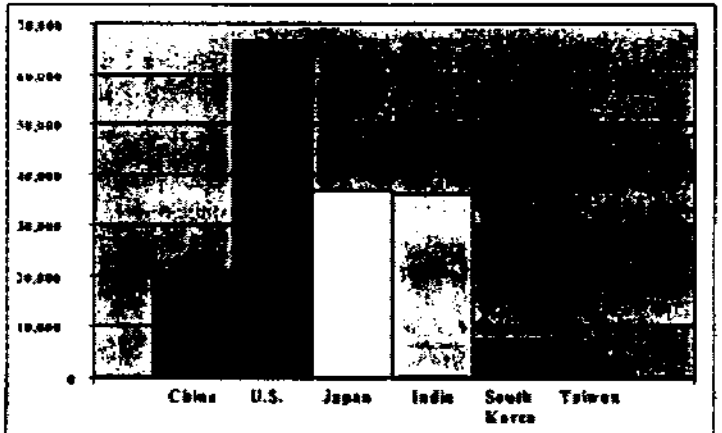


Figure 6: Advanced Degrees in Natural Science and Engineering

[44] Johnson, *Human Resources for Science and Technology: The Asian Region*, pp. 6, 69–71, 75–77. Taiwanese nationals also earned 900 doctorates in the United States and Korean nationals about 700. Many of these people will continue working in the United States, however, rather than returning to their home countries.

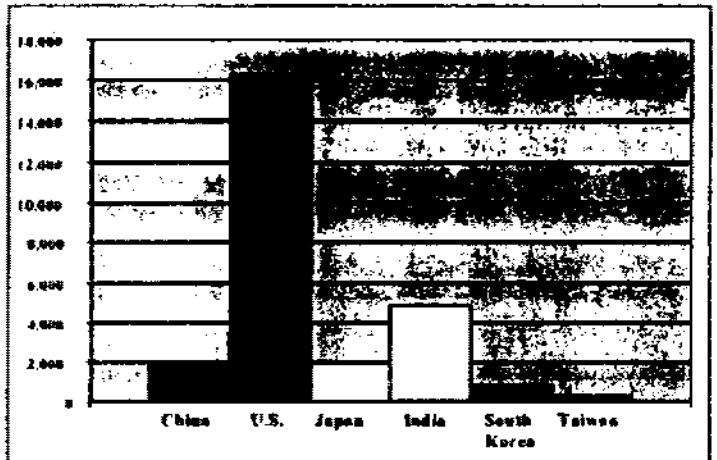


Figure 7: Doctoral Degrees in Natural Science and Engineering

In terms of absolute numbers of people with higher education in the natural sciences and engineering, therefore, China's human resources appear to be roughly comparable to those of Japan and far more abundant than those of South Korea and Taiwan, although significantly worse than those of India and far worse than those of the United States. Thus, although on a per capita basis educational levels are low, China's huge size gives it a substantial pool of highly trained scientists and engineers which could be drawn on in an effort to develop advanced military technology.

Technological Effort: Technological effort is difficult to measure directly, but proxies can be found in numbers of personnel involved in technical tasks, expenditures on research and development, numbers of scientific and technical publications, and numbers of innovations or patents. Current levels of effort, of course, do not necessarily reflect a country's *potential* for technological progress, since effort could be increased in the future. Technological progress takes time, however, and

current efforts may not yield results for a number of years. If China wishes to develop advanced military technology within the next decade or so, the research efforts must be underway now.

Information on technological effort in China's defense industries is not openly available. It is available for the country as a whole, however, and the technological progress of the civilian economy will also determine the sophistication of the commercial technology available to China's defense industries. Examining these aggregate figures, therefore, can provide insights about the technological potential of China's defense industries.

In 1990, China had 391,000 scientists and engineers engaged in research and development work.[45] This was somewhat fewer than the 478,000 in Japan and far fewer than the roughly 1 million in the United States, but compared favorably to the 106,000 in India, 69,000 in South Korea, and 32,000 in Taiwan (see Figure 8).[46] Research and development expenditures in China in 1990 amounted to 12.5 billion yuan, 0.7 percent of the GNP.[47] In purchasing power terms this was estimated to be equal to

[45] Comparative data are not available for years after 1990. In 1993 there were 418,000 full-time scientists and engineers engaged in research and development. State Science and Technology Commission, *Zhongguo Kexue Jishu Zhibiao* (*China Science and Technology Indicators*) (Beijing, Zhongguo Renshi Chubanshe, 1994), p. 33.

[46] Johnson, *Human Resources for Science and Technology: The Asian Region*, p. 122. As argued above, since much technological progress derives from routine production activities, the total number of personnel involved in technical tasks, not just those specifically assigned to developing new technologies, is an important determinant of a country's technological progress. In 1995 China had 2.7 million people, 0.4 percent of the total workforce (0.8 percent of the nonagricultural workforce) engaged in scientific and technological activities (State Statistical Bureau, *China Statistical Yearbook*, pp. 87, 661). Comparative data was not available for this broader category, however.

[47] State Statistical Bureau, *China Statistical Yearbook*, p. 661. This amount

about 17 percent of U.S. R&D expenditures and about 38 percent of Japan's R&D expenditures. On the other hand China's R&D expenditures were about four times those of South Korea and India and almost nine times those of Taiwan (see Figure 9). All of these countries spent a higher proportion of their income on research and development, however, with R&D representing nearly 3 percent of the GDP in the United States and Japan, and nearly 2 percent in Taiwan and Korea. Even India spent a slightly higher proportion of its income on R&D than China, about 0.8 percent (see Figure 10).[48]

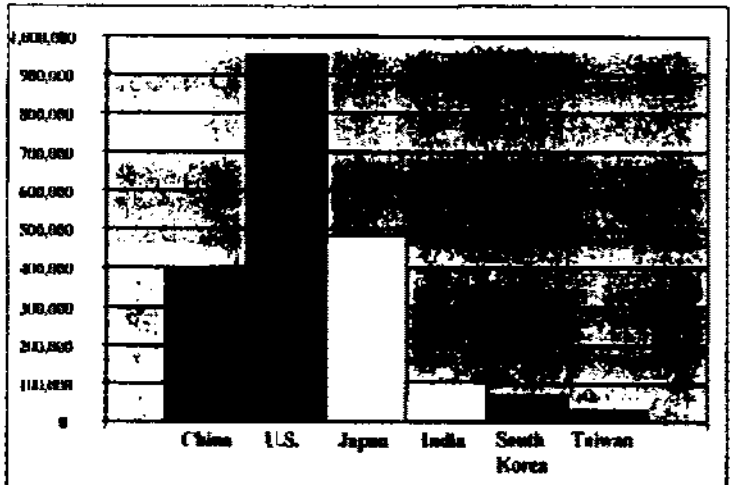


Figure 8: Scientists and Engineers in R&D

increased 28 percent in real terms by 1995, but fell as a proportion of GNP to 0.5 percent. Ibid, pp. 42, 661.

[48] Johnson, *Human Resources for Science and Technology: The Asian Region*, pp. 96–99.

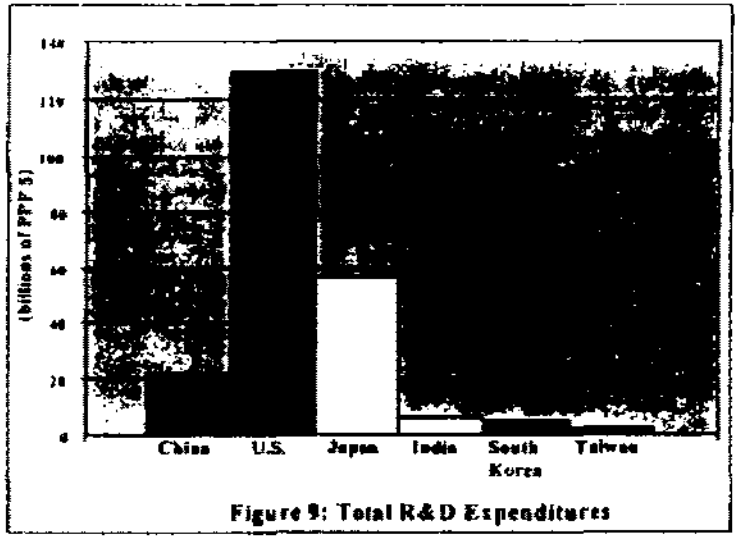


Figure 9: Total R&D Expenditures

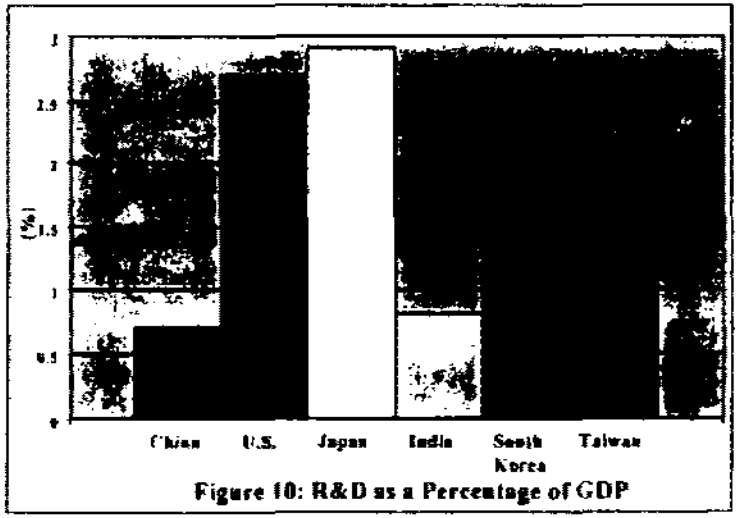


Figure 10: R&D as a Percentage of GDP

Output of scientific and technical publications has been increasing steadily in China. In 1992, 98,600 scientific and technical articles were published in China, a 15 percent increase since 1988. Publications in international journals increased by 32 percent, to 15,500, in this same period. Publications in international scientific and technical journals by Chinese scientists, however, significantly lagged those of Western countries and Japan. In 1992, 34 percent of all scientific and technical publications in internationally recognized journals were by U.S.-based researchers and 8 percent were by Japan-based researchers. China ranked 12th in the world in this regard with about 1.6 percent of all publications, just ahead of India. China's output well exceeded that of Taiwan and South Korea, however, which produced 0.5 percent and 0.4 percent, respectively, of the articles in internationally recognized scientific and technical publications (see Figure 11). Indeed, China ranked ahead of all non-Western nations other than Japan.[49]

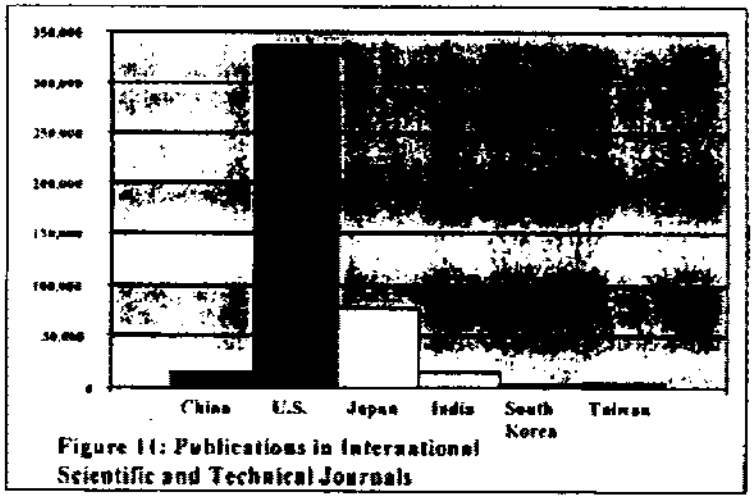


Figure 11: Publications in International Scientific and Technical Journals

[49] State Science and Technology Commission, *Zhongguo Kexue Jishu Zhibiao*, pp. 85–86, 158.

The significance of measures of innovations and patents is difficult to evaluate because standards vary by country. They do, however, at least provide an indication of trends within a given country. According to Chinese statistics, the annual number of "major results" in science and technology increased by a factor of ten between 1980 and 1990. The rate of growth has slowed since then, however, with the number of major results increasing by 15 percent between 1990 and 1995.[50]
The numbers of patents applied for and granted in China have also increased dramatically in recent years. Patent applications filed increased from 14,000 in 1985 to 41,000 in 1990 and 83,000 in 1995. The number granted increased from 138 in 1985 to 23,000 in 1990 and 45,000 in 1995. These increases, however, are undoubtedly in part due to changes in the economic and legal environments in China (the number of patent applications by foreigners, for example, increased by 150 percent between 1985 and 1995).[51]

In aggregate, these measures of technological effort suggest that largely due to its huge size, China's technological effort is considerable in absolute terms. Its scientific and technical activities well exceed those of wealthier but much smaller countries such as Taiwan or South Korea. China also devotes several times more people and resources to research and development than does India, although Indian output of scientific and technical publications in internationally recognized journals is about the same as that of China.[52] China's technological efforts clearly fall below those of Japan, however, which spends almost three times as much on R&D and produces five times as many publications in international scientific and technical journals. The United States has three

[50] State Statistical Bureau, *China Statistical Yearbook*, p. 661. Since "major achievements" are defined by being registered by a provincial or ministerial organization (National Commission on Science and Technology, *Zhongguo Kexue Jishu Zhibiao*, p. 90), the objectivity of these statistics is suspect and it is possible that increases in numbers are simply an artifice of loosening standards or other factors unrelated to actual scientific progress.
[51] State Statistical Bureau, *China Statistical Yearbook*, pp. 681, 682.
[52] Language barriers may cause publication counts in internationally recognized journals to underrepresent China's scientific output.

times as many scientists and engineers engaged in R&D, spends six times as much on R&D, and produces more than twenty times as many publications.

Incentives: As argued above, many of the incentives that are important to technological development by purely private corporations do not apply to defense industries. Nonetheless, some incentives are clearly still important. With regard to competition, a limited degree of internal competition appears to exist within China's defense industries. The "Fei Long" and "Hai Ying" series of anti-shipping missiles, for example, have similar capabilities and were apparently designed in competition with each other.[31] There also appears to be competition between Chengdu Aircraft Corporation and Shenyang Aircraft Corporation for production of China's new F-10 air superiority fighter.[32] In addition, China's defense industries differ from those of most other nations in that exports are sometimes the primary market for certain systems. The notorious M-series of ballistic missiles, for example, were originally developed for export.[33] Because state funds to defense industries have been restricted in recent years, foreign sales have been a vital source of revenue for China's weapons manufacturers. In this regard China has provided a competitive environment similar to that enjoyed by commercial enterprises in many newly industrialized countries: a protected domestic market with limited state "subsidies" (contracts) ensures that a small number of firms will survive, but in order to thrive they must be able to compete on international markets.[34]

---

[31] Duncan Lennox, ed., *Jane's Strategic Weapon Systems* 15 (1994). Both, however, are produced by the same manufacturer, the Nanchang Aircraft Manufacturing Company.

[32] David A. Fulghum, "China Pursuing Two-Fighter Plan," *Aviation Week and Space Technology* (27 March 1995): p. 44.

[33] Duncan Lennox, ed., *Jane's Strategic Weapon Systems* 18 (May 1995).

[34] China has, of course, imported a significant number of foreign weapon systems, but this appears to be in response to a *lack* of domestic providers for particular capabilities rather than to introduce foreign competition. See "Russian Imports Step In to Fill the Arms Gap," pp. 27–28.

In addition to the limited size of China's domestic market, excessive competition is prevented by the fact that free entry into the market is not allowed. Only entities created by the state have been eligible for defense-related funding. Although excessive market entry discourages technological progress, in general, China's defense industries, like the rest of China's state-owned industries, appear to suffer from the opposite problem—the security of continuing, if low, government subsidies and too little competition.

Inefficient factor markets also appear to hamper China's defense industries. The market for technically skilled labor, for example, has been impeded by the fact that the defense industries are state-owned and employees are typically hired for life. This means that firms may be saddled with workers whose skills are no longer appropriate and unable to hire new workers who are. In the past the work assignment system may have meant that defense industries had an advantage in acquiring workers with scarce skills, but the breakdown of that system in recent years has dissolved any advantage that may have accrued from it. Meanwhile, China's economic reform program has meant that skilled workers can earn far more in the nonstate sector of the economy and are therefore reluctant to work for defense industries.[17]

Technology markets probably operate particularly poorly for China's defense industries. The secret nature of defense-related technology development generally prevents defense industries from seeking technology from commercial providers. Within the defense industries, the hierarchical and compartmentalized character of China's state-owned sector means that there is little dissemination of information about available technologies.[18] These shortcomings are exacerbated by the fact that China's defense industries are not profit-making competitive contractors, and thus have little incentive to find the most inexpensive suppliers of inputs such as technology. As a result they probably quite often engage in redundant technology research and development. A

[17] Arnett, "Military Technology: The Case of China," pp. 371–372; interview with manager of Chinese aerospace firm.

[18] Arnett, "Military Technology: The Case of China," pp. 370–371.

countervailing factor is that the push to make the defense industries self-reliant has effectively eliminated the restrictions on commercializing technologies developed through weapons research, providing financial incentive for pursuing military technologies with potential commercial applications.

Finally, while the state-owned nature of China's defense industries means that many market-based incentives do not apply, certain nonmarket incentives may substitute for them. Although defense companies are not profit-making corporations, for example, there is still incentive to develop new technologies, as a record of technological progress may result in increased revenue flows and other rewards. This process undoubtedly works less than optimally, however. In the past Chinese scientists and engineers were also motivated by ideology and national pride in their quest to develop new military technologies, but such nonmaterial incentives factors probably contribute only marginally to technological progress in China today.[59]

Institutions: Little information is available about the institutional infrastructure of China's defense industries. As with other parts of China's state-owned sector, however, it appears that while China's defense industries are well-integrated vertically, there is little horizontal interconnectivity.[60] Although the hierarchical organization of China's ministries is similar to that of subcontracting networks for private enterprises, largely missing are the equivalents of the organizations that facilitate horizontal technology flows in the private sectors of developed countries. These include business associations, engineering consultancy

[59] Lewis and Xue, *China Builds the Bomb*.

[60] Arnett, "Military Technology: The Case of China," pp. 370–371. For a more general analysis of this problem in China's state-run organizations, see Kenneth Lieberthal and Michel Oksenberg, *Policy Making in China: Leaders, Structures, and Processes* (Princeton, NJ: Princeton University Press, 1988), pp. 137–151; Andrew G. Walder, *Communist Neo-Traditionalism: Work and Authority in Chinese Industry* (Berkeley: University of California Press, 1986).

firms, providers of specialized technology services, and advanced skills training institutes. In China's state-owned industries these functions tend to be provided *within*, rather than *between*, enterprises. The primary cost of this approach, even more than the inefficiency of such redundancy, is inhibition of the flow of information necessary for technological progress.

Conclusion

The barriers to China developing military technology comparable to or superior to that of the United States are formidable. The technological capabilities of China's weapons producers are currently quite backward. China's civilian industries, while generally more sophisticated than its defense industries and advancing steadily, are still well behind those of the industrialized world in most areas. Western embargoes on military and dual-use technology, although likely to ease somewhat in the future, will continue to limit China's external sources for military technology.[61] For China to develop advanced military technology, therefore, would require significant indigenous research efforts.

The human capital base for such an endeavor has important strengths and weakness. Strengths include relatively high levels of literacy and primary education, and large absolute numbers of people earning college and graduate degrees in science and engineering, although even in absolute numbers the United States has an advantage over China. China's weakness is in the low *proportions* of people receiving high school and college-level education as compared to more technologically advanced countries, with the former group representing the pool out of which highly skilled technical workers will be drawn and the latter group representing the source of China's professionals and managers. While this weakness will limit the overall technological progress of China's economy, however, it would have a lesser effect on a narrowly focused effort to improve China's military technology.

[61] Barbara Starr, "New Contacts, But US Arms Trade Ban Stays," *Jane's Defence Weekly* (31 January 1996).

While China may have an adequate human capital base for technological progress, technological efforts in China are currently modest. Although the number of scientists and engineers engaged in research and development work is close to that of Japan, it is only a third as many as in the United States and the resources devoted to them are slight. Even India, with per capita incomes about half of those in China, spends more per researcher than does China while the United States and Japan spend more than twice as much per researcher.[82] In addition, the scientific output per researcher in China appears to be much smaller than that of other countries, including India, based on publications in internationally recognized journals. Thus, the productivity of research efforts appears to be lower in China than elsewhere. For China to present an overall technological challenge even to Japan, therefore, it would have to at least triple the resources being devoted to research and development, especially given how far behind China currently is. And because of the lag time between research and results, such an increase would have to occur now if it were to begin to have an effect within the next decade.

Even if China increased its technological effort, institutional and organizational features of China's defense industries are likely to impede technological progress. The lack of a profit motive and competitive bidding for contracts diminishes the incentives for technological innovation. The inability to dismiss unproductive employees or offer competitive wages to desirable workers denies these industries access to necessary skills. And the hierarchical and compartmentalized nature of the defense industries stifles technology flows. To rectify these problems, China will at a minimum need to turn its defense industries into financially independent corporations (true privatization is probably out of the question at present), introduce competitive bidding for contracts rather than budgetary allocations as the primary source of revenue, and allow defense corporations to hire and fire at will. Some steps are being taken in this regard for China's other state-run indus-

[82] Johnson, *Human Resources for Science and Technology: The Asian Region*, p. 125; *World Development Indicators* (Washington, DC: The World Bank, 1997), pp. 6, 7.

tries, but it is unclear whether they will apply to China's defense industries as well.

So far there has been no indication that China's leadership has put a priority on overcoming the barriers to developing advanced military technology. Thus, it is unlikely that China will be able to challenge the United States' superiority in military technology in the near future. Nonetheless the technological capabilities of China's civilian industries and its human capital base provide it with the resources from which such a challenge could begin to be mounted, and as China's economy continues to develop these resources will only increase. Expenditures on research and development, for example, increased by 28 percent in real terms between 1990 and 1995, despite the fact that they fell from 0.7 percent to 0.5 percent of the GNP. Although China will undoubtedly continue to trail the United States and other advanced nations in technological capabilities twenty years from now, its economy will be larger and in some ways more technologically advanced than was that of the Soviet Union during the Cold War.[9] The barriers to becoming the type of military challenge to the United States that the former Soviet Union presented are formidable, however, and unlikely to be overcome unless China's leadership implements fundamental changes in organization and allocation of resources.

[9] China's leaders have set the goal of becoming second in the world in high technology by 2020. Willy Wo-lap Lam, "Beijing Plans High-tech Challenge to US." *South China Morning Post* (9 February 1998)

Discussion

Professor Stansfield Turner (School of Public Affairs, University of Maryland at College Park [UMCP]) served as the main discussant for Cliff's paper. He *commended Cliff's methodology*, both for its applicability to China and more general usefulness.

Turner suggested supplementing Cliff's analysis by considering *what areas of technological military improvement in China would have the biggest impact on its ability to counter United States military capability.* Since this depends upon the particular circumstances of the conflict, Turner proposed looking at those areas in which conflict is most likely: Korea and Taiwan in the short term, the Philippines and Japan over the longer run. Within these scenarios, capabilities that may be required of China include sea denial, in which China attempts to restrict our access to the seas, and land control, in which China tries to expand its territory.

Turner then questioned whether there exist particular United States vulnerabilities that would be relevant in those situations. He pointed out that *our success against ground forces in the Gulf War was highly dependent upon our ability to control the air*, and considered whether the Chinese have the potential to disrupt that control. While their high technology weapons are potentially threatening in that regard, Turner paraphrased Shambaugh in warning that *any assessment of China must be careful not to confuse access to technology with actual military capability.* Adequate testing of weapons, logistics (developing a whole ethic of being ready), maintenance, doctrine, and tactics are important. Many militaries fail to do adequate training, and are unable to balance correctly the tradeoff between encouraging initiative and demanding discipline from their troops. The Chinese, as well, may stumble over these problems.

The United States needs to respond to the Chinese development of high technology weapons by *continuing its own R&D efforts*, in spite of indications that we are far ahead of the rest of the world in that regard. In addition, we need to concentrate on maintaining readiness even as funding shrinks, Turner said. He concluded by suggesting that the *methodology used by Cliff be applied to other countries*, in particular Russia, Iraq and Japan, in order to evaluate systematically the threats posed by "leap-frog" technology policies.

A discussion followed Turner's presentation.

Thomas Schelling (School of Public Affairs, UMCP) challenged Cliff's comparison of Chinese R&D efforts with those of Taiwan and Korea, both because China is so much bigger than its neighbors, and because Taiwan and Korea have access to Western technology, and therefore don't need to develop it themselves. **Roger Cliff** (RAND Corporation) defended his choice, saying that he was using the two nations as examples of developing countries that, nevertheless, are technologically sophisticated.

Erland Heginbotham (Institute for Global Chinese Affairs, UMCP) asked about the longer-term prospects for Chinese successes in high-technology military systems. He asked whether, if China chose to, it could pose a serious challenge to key U.S. military systems if it focussed massive resources intensively on a few key countertechnologies, for example in space weapons or information warfare. Some Chinese are returning to China after advanced U.S. training, possibly with skills that might enable that kind of progress.

Schelling questioned whether the Chinese would be likely to hire foreign nationals to develop technology for them, as other countries have done. For example, the Libyans have hired Russians and Germans. **David Shambaugh** (Sigur Center for Asian Studies, George Washington University) responded that an emphasis on self-reliance means that China is unlikely to ask for external help, although its recent move to

allow foreign investment in the electronics component of the defense industry may signal a change in attitude.

Anthony Lanyi (IRIS Center, UMCP) brought up the issue of whether the ability of a nation to focus its energies in key areas was a realistic means to military success, or whether the most successful countries (Britain, Germany, and the United States, for example) tended to have competencies that were both broad and deep.

Hegiobotham noted that a few Chinese emigrants are now beginning to return to their homeland as they perceive that the country is moving forward economically, so that to some degree a reverse braindrain is occurring. **Shambaugh** added that traditionally the Chinese have borrowed selectively from other cultures, although they always put their own mark on them. **Cliff** responded to the issue of foreigners working in China by claiming that some Israelis and Russians are there at the moment, but that nobody really knows how many there are. **Michael Pillsbury** (Department of Defense) asked whether the Chinese were secretive about the defense industry because they were trying to hide something. **Cliff** answered that they were merely trying to cloak their weakness. On the issue brought up by Lanyi of focusing resources in order to develop particular weapons systems, Cliff noted that socialist systems traditionally have used that approach, but that it is expensive and diverts resources from other uses.

William Kelly (Kelly, Wooden & Associates) asked if there were any studies on the thousands of Chinese students doing graduate work in the United States. **Cliff** replied that about half of them had returned to China; **Robert Michael Field** (INFORUM, UMCP) added that many of those who stay are working in high technology jobs, and that their experience will benefit China even more when they do return. **Shambaugh** reported that three studies on the subject have been done, and that these indicate that virtually all of the Chinese students here are in engineering or medical science. His impression is that about eighty

percent remain in the United States after graduating, many with no intention of returning unless the financial incentives to do so improve.

Michael Nacht (School of Public Affairs, UMCP) asked whether the Chinese government depended upon the advice of certain eminent scientists. **Shambaugh** commented that the Chinese Academy of Sciences appeared to be poorly supported by the government. **Pillsbury** added that there was indeed a sort of defense "guru", who was once at Caltech before being sent back to China. He was known to meet with Communist Party Officials regularly. His preference for missile defense systems rather than airplanes may explain why the Chinese don't have bombers.

Professor Thomas Schelling (School of Public Affairs, UMCP) was the final speaker of the day. He began by admitting that although he had been skeptical of the idea of this conference when Mancur Olson first talked to him about it, he had found the discussions to be extremely valuable and informative.

Schelling identified several key questions that in his view had not been much discussed in the conferences, or that required more discussion. He observed happily that in this discussion, the *subject of nuclear weapons had not been brought up*. He and Admiral Turner attended a seminar two years ago celebrating the fiftieth anniversary of the last use of nuclear weapons in warfare. They were not used in Korea or Vietnam (although their use was considered in 1954). Eisenhower, Dulles and Radford were in principle not opposed to their use, but Lyndon Johnson declared that there was no such thing as a conventional nuclear weapon. The Israelis didn't use them east of Suez in 1973, although they could have benefited from the use of tactical nuclear weapons. Thatcher didn't use them in the Falklands, nor did the USSR in Afghanistan. (The latter was perhaps surprising: were they afraid of world opinion, or afraid of nuclear weapons being used against them in retaliation?) Their use has generally become taboo; to resort to them now is a political decision, which must be made at the highest levels of government. Schelling

questioned whether the Chinese share this appreciation that nuclear weapons are not to be used. He hoped that the absence of discussion at this conference is an indication that scholars feel that we have nothing to fear in this regard.

Schelling then commented on the *"extraordinarily intractable Chinese misunderstanding of United States intentions"* toward their country and the rest of Asia. He attributed this to the Chinese being either "terribly irrational or terribly uninformed or both." He suggested that perhaps attitudes or inhibitions prevailing among the leadership prevented even the discussion of more benign interpretations of United States intent, much as it essentially was forbidden to take moderate positions in the Eisenhower or Reagan Administrations. Given this paranoid fear of the United States, Schelling recommended that any steps our government can take to reassure the Chinese that our intentions are not hostile would be helpful.

Schelling's third observation involved the *sociology of military readiness* the customs, routines, personal relationships, and institutions that affect the ability to succeed in warfare. Nacht and Pillsbury both talked about the Chinese being traumatized by what we did in the Gulf. They should realize it was not just technology that the United States had but the necessary *organization, coordination, and intelligence*. These are at least as hard to develop as the weapons technology.

Next, Schelling considered *what the United States might have to fear from China in thirty years*. He countered Admiral Turner's suggestion that the nation might try to expand its territory with the observation that China has recently watched the Soviet Union "dis-expand", shedding costly and messy problems such as ethnic conflict. That experience should serve as a warning to the Chinese not to take on such responsibilities. The question of what China might want in thirty years is complicated further by the fact that China is evolving politically very quickly, so that it is not even clear who will be making policy at that point.

Finally, Professor Schelling emphasized that whatever changes take place in China in the next thirty years are not going to affect the United States of today, but rather *the United States of thirty years from now.* It is therefore important to consider where we will be at that point, as well. The United States will develop technology to counter Chinese high technology weapons, and alliances may change according to our needs—we may no longer want to keep Japan dependent on us militarily, for example.

Chapter XI
Concluding Discussion

Thomas Schelling

In the subsequent discussion, **Anthony Lanyi** (IRIS Center, University of Maryland at College Park [UMCP]) invited participants to contribute their thoughts for further research in the areas covered by the three conferences.

William Kelly (Kelly, Wooden & Associates) asked whether China has the capability to use nuclear weapons against the United States, and if so, whether they would be inclined to use them. **David Shambaugh** (Sigur Center for Asian Studies, George Washington University) responded to the first part of the question in the affirmative, claiming that China has 16 ICBMs capable of reaching the United States, and 12 SLBMs that in theory could also reach the United States. They have tactical nuclear weapons and submarines from which ICBMs can be delivered. In addition, their tactical battlefield nuclear capability has moved from minimal to limited deterrence. Shambaugh then pointed out that the nature of the Chinese regime will play a large part in what happens in thirty years, and that the current Communist Party is already corroding from within and may not last much longer. Hostility to the United States comes primarily from the Leninist wing of the Communist Party. Uncertainty about the leadership, combined with an already ambiguous attitude toward the United States, means that the relationship between the two countries could change greatly.

Michael Nacht (School of Public Affairs, UMCP) asked what sort of indicators we should look for as signs that all is well in our relationship

with China, and what evidence would signal a more adversarial position. **Roger Cliff** (RAND Corporation) suggested that how China responds to the Taiwan issue will be a key indicator of the country's more general intentions.

Erland Heginbotham (Institute for Global Chinese Affairs, UMCP) suggested two topics for further research. The first, relating to Lanyi's earlier question, was whether a focused effort by China to develop counteractive capabilities could overcome the systemic limitations laid out in Cliff's paper. The second proposal was to assess the trends and underlying factors in the degree of influence that the PLA now exerts on China's foreign policy choices

Michael Pillsbury (Department of Defense) then recommended that the issue of the United States devoting inadequate human resources to the study of China be given more attention. He pointed out that the few existing China experts all tend to be favorably disposed toward the country. Given this bias, policymakers should at least have access to translations of key writings in order to obtain a more balanced perspective. Furthermore, many of the experts on China are close to retirement age, so the supply may actually diminish in the future. **Shambaugh** challenged the point that China experts are disproportionately older, but agreed that more resources should be devoted to the translation of Chinese documents and to studying the PLA. He suggested that foundations offer funding to support dissertations in those areas.

Heginbotham brought up the subject of Israeli/Chinese cooperation, noting that some U.S. technology has been transferred to China by the Israelis. He questioned whether this is considered objectionable leakage or a desirable source of collaboration.

Andrew Marshall (Office of Net Assessment, Department of Defense) commented that another problem in trying to understand what was going on in China was that it was hard to get intelligence organizations, when studying foreign militaries, to focus on organizational aspects

such as levels of skill, maintenance, and training. Therefore, any progress that can be made in this conference toward addressing these issues is extremely useful.

Lanyi connected the discussion by Cliff on self-sufficiency and the chain of production for inputs to the discussion held on the first day of this conference on the economic base of military capacity. He pointed out that Heginbotham's suggestion that further research be done on whether China could focus its economic resources in order to compete successfully in a few key areas was also directed at essentially the same idea. Lanyi noted that the USSR had attempted such a strategy of targeting certain areas while neglecting the overall economy, but ultimately had failed. China might be more successful because general economic growth is stronger than it was in the Soviet Union, but on the other hand, China's weaker secondary and university education may make it less likely to succeed. He wondered if China could mobilize enough public-sector resources to at least cause the United States considerable trouble. **Cliff** responded that the Chinese could devote substantial resources to military technology, but that the leadership is not inclined to do so. Instead, China is trying to build a broad-based economic and technological capability.

Nacht hoped that IRIS research, in the tradition of Mancur Olson, could focus on the economic incentives and institutional features that would especially favor technological capacity.

Thomas Schelling (School of Public Affairs, UMCP) pointed out that the age structure of the Chinese population will become increasingly top-heavy in the coming years, and that this will have an impact on policy. On the one hand, it will be easy to send the young off to war because they will be outvoted, but on the other hand, the aging population may demand that more resources be put into health care and improved standards of living. **Lanyi** added that the pressure to improve social services might force the leadership to involve the private sector sooner than they would otherwise.

Kelly proposed that future research consider the capabilities (technological and organizational) being introduced by foreign firms operating in China. **Cliff** agreed that this is an interesting area, and said that he is currently looking at the issue.

Pillsbury recalled that Mancur Olson had raised the prospect of a mad genius taking over China in the last session of the conference, and while the chances of that happening are considered to be remote, he asked what would happen if such a contingency did occur.

Heginbotham recommended that the interactive nature of the U.S. relationship with the Chinese be taken into account, noting that treating China as a potential enemy may make it more likely to behave in kind.

Schelling said that one such interaction was the discussion of emissions control. Work he has recently done has shown that developing countries would be unwise to participate in the worldwide effort being urged by environmental groups in advanced countries

The final comment was made by **Kelly**, who compared China at present to Germany under Bismarck. The principal theme for the Chinese, seen from within China, is unity vs. disunity. This has an impact on policies regarding Hong Kong, Macao, Taiwan, and Tibet, all of which Chinese regard as integral parts of their country. He suggested that how China handles the Taiwan situation will be a telling indicator of its intentions in this regard.

Anthony Lanyi concluded the conference by thanking those who participated, especially the speakers and discussants, and expressed his appreciation to Andrew Marshall and his colleagues for support.

Glossary of Acronyms

ASAT	Air Launched Anti-Satellite Missile
ASEAN	Association of Southeast Asian Nations
CBM	Confidence Building Measure
CBSM	Confidence Building and Security Measure
CCP	China Communist Party
COCOM	Coordinating Committee on Multilateral Export Controls
CTBT	Comprehensive Test Ban Treaty
DOD	Department of Defense
DPRK	Democratic People's Republic of Korea
EU	European Union
GDP	Gross Domestic Product
GNP	Gross National Product
GPS	Global Positioning System
ICBM	Intercontinental-Range Ballistic Missile
IDSA	Institute for Defense Studies and Analysis (New Delhi)
IGO	Intergovernmental Organizations
KMT	Kuomintang
MITI	Ministry of International Trade and Industry (Japan)
MR	Military Region
MTCR	Missile Technology Control Regime
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NGO	Non-Governmental Organization
NPT	Non-Proliferation Treaty
OPEC	The Organization of the Petroleum Exporting Countries
PAP	People's Armed Police
PGM	Precision Guided Munitions
PLA	People's Liberation Army
PPP	Purchasing Power Parity
PRC	People's Republic of China
RMA	Revolution in Military Affairs

ROC	Republic of China
ROK	Republic of Korea
SLBM	Submarine Launched Ballistic Missile
UMCP	University of Maryland at College Park

A Word about the Authors

Roger Cliff

Roger Cliff became an Associate Political Scientist at RAND in 1997 after receiving his Ph.D. in international relations from Princeton University. He holds a bachelor's degree in physics and previously worked as a defense systems analyst.

His current area of research interest is China's military modernization. His previous research work was on China–Taiwan relations and he has published articles on China's Taiwan policy, the development of China's steel industry, and Taiwanese conceptions of security.

Richard Cooper

Since 1981, Richard Cooper has been the Maurits C. Boas Professor of International Economics at Harvard University. Professor Cooper is Director and Chairman of the Center for International Affairs at Harvard and a member of the Council on Foreign Relations; a member of the Aspen Strategy Group; on the Executive Panel, Chief of Naval Operations, U.S. Navy; and on the Brookings Panel on Economic Activity.

Professor Cooper's impressive career includes positions as Chairman of the National Intelligence Council, Chairman of the Federal Reserve Bank of Boston, Under-Secretary of State for Economic Affairs, Deputy Assistant Secretary of State for International Monetary Affairs, professor at Yale University, and senior staff economist of the Council of Economic Advisors.

Professor Cooper has authored or co-authored nine books, and published numerous articles in leading periodicals such as the *Journal of Political Economy, Quarterly Journal of Economics, International Organization, Foreign Policy, Foreign Affairs,* and *Brookings Papers in Economic Activity,* among others.

Last year he was awarded the National Intelligence Distinguished Service Medal.

David Li

David Li is Assistant Professor of Economics at the University of Michigan. He is also a research associate of the Center for Chinese Studies and a research fellow of the William Davidson Institute at Michigan.

Professor Li's research is on corporate finance and economic problems in countries undergoing the postsocialist transition. His current research is on changing behavior of bureaucrats during economic reform.

He is spending this academic year as a National Fellow of the Hoover Institution at Stanford University.

Michael Nacht

Michael Nacht is Professor of Public Policy in the School of Public Affairs at the University of Maryland where he served as dean from 1986 through 1994. As a faculty member he teaches and writes on U.S. national security policy, international affairs, and management strategies in the public sector.

From August 1994 through March 1997 he served as Assistant Director for Strategic and Eurasian Affairs of the Arms Control and Disarma-

ment Agency (ACDA) where he led the agency's work on nuclear arms reduction negotiations with Russia and initiated a nuclear arms control dialogue with China. He participated in President Clinton's summit meetings with President Yeltsin at Hyde Park (1995), Moscow (1996) and Helsinki (1997) and helped draft and negotiate the joint statements on nuclear force reductions and ballistic missile defense that were released by the presidents at Helsinki. He also participated in the Clinton-Jiang Zemin summit meeting at Lincoln Center (1995) and in Secretary of Defense Perry's only trip to China (1994). He met with senior government officials in London, Bonn, Geneva, Tokyo, Baku, T' bilisi and Petra, Jordan. For this work he was given the ACDA Distinguished Honor Award, the agency's highest honor.

Prior to joining the Maryland faculty in 1984 he served for a decade at Harvard University's Kennedy School of Government as Associate Professor of Public Policy, Associate Director of the Center for Science and International Affairs, Acting Director of the Harvard Program on U.S.–Japan Relations, and founding coeditor of the quarterly journal, *International Security*. Previously, Professor Nacht was first a missile aerodynamicist at NASA's Lewis Research Center in Cleveland, and then a senior scientist at Dunlap and Associates, Inc., a Connecticut-based management and systems consulting firm.

Professor Nacht received a B.S. in Aeronautics and Astronautics and an M.S. in Operations Research from New York University, an M.S. in Statistics from Case Western Reserve University, an M.A. in Political Science from the New School for Social Research, and a Ph.D. in Political Science, with a concentration in international relations and strategic studies, from Columbia University. He has authored or co-authored five books including *The Age of Vulnerability: Threats to the Nuclear Stalemate* (Brookings, 1985); *Missing the Boat: The Failure to Internationalize American Higher Education* (Cambridge, 1991); and *Beyond Government: Extending the Public Policy Debate in Emerging Democracies* (Westview, 1995). He has published more than 50 articles

on international and security affairs in *Foreign Affairs* and other leading policy and scholarly journals.

William Niskanen

Dr. Niskanen, a former defense analyst, business economist, and professor, has been chairman of the Cato Institute since stepping down as acting chairman of President Reagan's Council of Economic Advisors in 1985.

Dr. Niskanen has written and lectured on a wide range of issues, including budget policy, defense, education, government organization, health care, international trade, productivity, regulation, and taxes. His primary long-term research focuses on three major sectors of the economy that are substantially financed by government—defense, education, and medical care.

Prior to serving four years at the Council of Economic Advisors, he was the director of economics at the Ford Motor Company for five years and assistant director of the Office of Management and Budget for two years. He also served as defense analyst for the Pentagon, the RAND Corporation, and the Institute for Defense Analysis.

Dr. Niskanen received an A.B. from Harvard College and an M.A. and Ph.D. in economics from the University of Chicago. He taught economics at Berkeley and at UCLA and is the author of *Bureaucracy and Representative Government* and *Reaganomics: An Insider's Account of the Policies and the People*, named one of the 10 best books of 1988 by *Business Week*. He is also the editor of Cato's *Regulation* magazine.

Mancur Olson

Mancur Olson is the author of *The Logic of Collective Action* and *The Rise and Decline of Nations*, each of which has been translated into numerous foreign languages, and more than a hundred other publications. He has been Distinguished Professor of Economics at the University of Maryland since 1979 and has been on the Maryland faculty since 1969. He was from 1971 to 1977 also Vice Chairman of the Health Services Review Commission of the State of Maryland.

From 1967 to 1969 he was Deputy Assistant Secretary of the U.S. Department of Health, Education and Welfare, from 1963 to 1967 an Assistant Professor of Economics at Princeton University, and from 1961 to 1963 a Lieutenant in the U.S. Air Force. He received the Ph.D. degree in Economics from Harvard University in 1963. He was a Rhodes Scholar at University College, Oxford, and has received the M.A. degree from Oxford University and the B.S. degree from North Dakota State University.

He was past president of the Eastern Economic Association and of the Southern Economic Association, of the Public Choice Society, and of the Social, Economic and Political Sciences Section of the American Association for the Advancement of Science, and past vice-president of the American Economic Association. He was a Fellow of the American Association for the Advancement of Sciences, and he has been awarded a Fellowship of the Woodrow Wilson International Center for Scholars and a Distinguished Fellowship at the U.S. Institute of Peace. He was an Honorary Fellow of University College, Oxford.

Mancur Olson was the founder, Principal Investigator and Chair of the Center on Institutional Reform and the Informal Sector (IRIS) at the University of Maryland, which conducts research and provides technical assistance related to the role of institutional factors in economic development and the transition of formerly communist countries.

His most recent work addressed the origins of public-good-providing governments, the fiscal policies of democracies and autocracies, and the role of property and contract rights in economic development. Recent publications include "The Secular Increase in European Unemployment Rates" in *European Economic Review* (1995), "The Devolution of the Nordic & Teutonic Economies" in *AEA Papers and Proceedings* (May 1995), "Why the Transition from Communism is So Difficult" in *Eastern Economic Journal* (Fall 1995), "The Economics of Autocracy and Majority Rule: The Invisible Hand and the Use of Force," (with Martin C. McGuire) in *The Journal of Economic Literature* (March 1996), and "Big Bills Left on the Sidewalk" in *The Journal of Economic Perspectives* (Spring, 1996).

Michael Pillsbury

Michael Pillsbury is currently an Associate Fellow at the Institute for National Strategic Studies, National Defense University, and a Senior Fellow at the Atlantic Council of the United States, where he is sponsored by the Office of Net Assessment, Department of Defense. During the Reagan administration Dr. Pillsbury was the Assistant Under Secretary of Defense for Policy Planning; under President Bush he was Special Assistant for Asian Affairs in the Office of the Secretary of Defense, reporting to Andrew W. Marshall, Director of Net Assessment. Previously he served as a defense analyst for the RAND Corporation and on the staff of several U.S. Senate Committees. He has taught graduate courses in Chinese foreign policy at Georgetown University, UCLA, and USC.

Dr. Pillsbury studied Mandarin Chinese for 2 years at the Stanford Center at Taipei, Taiwan, under a doctoral dissertation fellowship of the National Science Foundation. He earned a B.A. from Stanford University and a Ph.D. from Columbia University.

George H. Quester

George H. Quester is a Professor of Government and Politics at the University of Maryland, where he teaches courses on International Relations, U.S. Foreign Policy, and International Military Security. He has taught previously at Cornell and Harvard Universities, at UCLA, and in the Department of Military Strategy at the National War College. From 1991 to 1993, he served as the Olin Visiting Professor at the United States Naval Academy.

Professor Quester is the author of a number of books and articles on international security issues, and on broader questions of international relations, and he is a member of the International Institute of Strategic Studies and the Council on Foreign Relations.

Richard J. Samuels

Richard J. Samuels is the Ford International Professor of Political Science at the Massachusetts Institute of Technology, where he is also Founding Director of the MIT Japan Program.

Professor Samuels has written or edited six books and numerous articles. His most recent book *"Rich Nation, Strong Army": National Security and the Technological Transformation of Japan* (Cornell Press, 1994), won the 1996 John Whitney Hall Prize of the Association of Asian Studies as the best book published on Japan or Korea. He is currently writing a comparative political and economic history of Italy and Japan, and is a regular columnist for the *Mainichi Shimbun*.

Professor Samuels has served as vice-chairman of the Committee on Japan of the National Research Council, is an Associate in Research at the Reischauer Institute, Harvard University, and is also a member of the Council on Foreign Relations.

Thomas Schelling

Professor Schelling (Ph.D. in Economics, Harvard University) came to the School of Public Affairs, University of Maryland at College Park in 1990 from Harvard University, where he was Lucius N. Littauer Professor of Political Economy. He is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the Institute of Medicine; in 1991, he was president of the American Economic Association. Schelling served in the Economic Cooperation Administration in Europe from 1948 to 1950, and in the White House and the Executive Office of the president from 1951 to 1953. He joined the Department of Economics at Yale University in 1953 and in 1958 was appointed professor of economics at Harvard University. He is the author of more than 170 articles and eight books, including *The Strategy of Conflict* (1960), and *Choice and Consequence* (1984). At the School of Public Affairs, Schelling teaches Conflict, Cooperation and Strategy, and Economics and Public Policy.

David Shambaugh

David Shambaugh is Professor of Political Science and International Affairs, and Director of The Sigur Center for Asian Studies at George Washington University.

Before joining the faculty at George Washington, he taught for eight years at the University of London, School of Oriental and African Studies, and previously at the University of Michigan. He has served as the acting director of the Asian Program at the Woodrow Wilson International Center for Scholars, Editor of the *China Quarterly* (1991–1996), as an analyst in the Department of State Bureau of Intelligence and Research (East Asia/Pacific), and on the staff of the National Security Council (Asian Affairs). He is a widely published author of numerous books, articles, book chapters and newspaper editorials. His most recent book is *China and Europe, 1949–1995*, and he is working on a book, *The Chinese Military in the 1990s*. Previously authored or

The Chinese Military in the 1990s. Previously authored or edited volumes include: *Chinese Foreign Policy: Theory and Practice*, *Beautiful Imperialist: China Perceives America, 1972–1990*; *Deng Xiaoping: Portrait of a Chinese Statesmen*; *The Making of a Premier: Zhao Ziyang's Provincial Career*; and *American Studies of Contemporary China*

Professor Shambaugh received his Ph.D. in Political Science from the University of Michigan, an M.A. in International Affairs from Johns Hopkins School of Advanced International Studies (SAIS) and a B.A. in East Asian Studies from the Elliott School of International Affairs at George Washington University. He has lived for over four years in China and Taiwan, and has been a visiting scholar at the Chinese Academy of Social Sciences, Peking University, People's University, National Taiwan University, the Institute of International Relations (Taipei), the University of Heidelberg and the Russian Academy of Sciences.

Professor Shambaugh has held a number of consultancies, including the Ford Foundation, United States Information Agency, IDS Fund Management International, the Universities Grants Council of Hong Kong, the British Academy, and the Economic and Social Research Council (UK). Professor Shambaugh is a member of the International Institute of Strategic Studies, the National Committee on U.S.–China Relations, the World Economic Forum, the Committee on Security Cooperation in the Asia Pacific (U.S. Committee), the Asia Society, Association of Asian Studies, International Studies Association and American Political Science Association.

Jon Sumida

Professor Sumida joined the Department of History at the University of Maryland at College Park in 1982 after he received a Ph.D. in British History from the University of Chicago. His teaching portfolio includes

courses in Modern Military History, Strategic Theory, War and Economics in European History, and others.

He is the author of three books, most recently *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer*, and numerous published articles in books and periodicals. Professor Sumida is a member of the Editorial Advisory Board for the *Journal of Military History*, the History Advisory Committee, and the American Society of Naval Engineers.

Stansfield Turner

Admiral Turner had a long and distinguished Naval career, during which he saw extensive service at sea, at the Naval War College, and at the Pentagon. His many accomplishments include commanding a Carrier Task Group of the Sixth Fleet in the Mediterranean, serving as the 36th President of the Naval War College, and being Commander-in-Chief of NATO's southern flank. In this capacity, he was responsible for the defense of Italy, Greece, Turkey, and the Mediterranean Sea. In 1977, President Carter appointed him Director of Central Intelligence (DCI). As DCI, he led the U.S. Intelligence Community, and served as Director of the Central Intelligence Agency. On completion of these duties in 1981, he was awarded the National Security Medal.

More recently, Admiral Turner has devoted much of his time to teaching and writing. In 1991, he joined the faculty of the Graduate School of Public Affairs, University of Maryland at College Park. He has written several books, including *Caging the Nuclear Genie: An American Challenge for Global Security*.

Hongying Wang

Hongying Wang became an Assistant Professor of Political Science at San Diego State University in 1997, after receiving her Ph.D. from Princeton University and spending a year as a Postdoctoral Fellow studying Women in International Society. Her areas of research and teaching interest include international relations, international political economy, and East Asian politics and economics.

She has authored numerous articles and is currently working on a book, *Law, Diplomacy and Transnational Networks: The Dynamics of Foreign Direct Investment in China*, to be published by Oxford University Press.

Martin Whyte

Professor Whyte is Chair of the Department of Sociology at George Washington University. Prior to his attaining this position he taught Sociology and International Affairs at George Washington University, the University of Michigan, and Boston University. He received his Ph.D. in Sociology from Harvard University.

Professor Whyte is the author and editor of numerous articles and books. His latest book, *China's Revolutions and Parent-Child Relations*, will be published by the University of Chicago Press. He has received grants and fellowships from many distinguished organizations, including the Social Science Research Council, the National Institute of Mental Health, and the National Science Foundation.

Dali Yang

Professor Yang joined the faculty of the University of Chicago in 1993 after receiving a Ph.D. from Princeton University. He has taught courses on many aspects of Asian politics and economics, including Chinese Politics and Political Economy, and Comparative Political Economy of East Asia. Among his other teaching interests and areas of research are foreign investment in China, the international relations of China and East Asia, and institutional change.

He has authored many articles and three books, the most recent of which, *Beyond Beijing: Liberalization and the Regions in China*, was published in 1997 by Routledge. He is currently working on a fourth book, *Recasting Chinese Industry: From Central Planning to New Industrial Policies*.

Professor Yang has received many awards and honors. Most recently he received the 1996–1997 Fellowship for Advanced Research in China from the American Council of Learned Societies.

Shu Guang Zhang

In 1993 Professor Zhang joined the Department of History, University of Maryland at College Park as an Associate Professor. Formerly, he taught at Capital University and the State University of New York at Potsdam, where he taught courses in Asian history.

Since 1995, Professor Zhang has been Chair of the China Committee at the University of Maryland at College Park. He is also a member of the Board of Directors for the Council of U.S.–China Relations and a member of the Advisory Committee for the Washington Center for China Studies.

Professor Zhang is the recipient of the 1994 Nobel Institute Fellowship on International Relations.

Professor Zhang is the author of two books on Chinese defense policy, titled *Deterrence and Strategic Culture* and *Mao's Military Romanticism*, and is the coeditor of *Chinese Communist Foreign Policy and the Cold War in Asia, 1944–1950*.

List of Conference Participants

Clopper Almon
INFORUM
Dept of Economics
University of Maryland

Frank Brechling
Dept. of Economics
University of Maryland

Chas Cadwell
IRIS Center
Dept of Economics
University of Maryland

Roger Cliff
RAND Corporation

Richard Cooper
Institute for International Economics
Dept. of Economics
Harvard University

David Epstein
Department of Defense

Niclas Ericsson
Brookings Institution
Robert Michael Field
INFORUM
Dept. of Economics
University of Maryland

Marcus Franda
Office of Int'l Affairs
University of Maryland

Erland Heginbotham
Institute for Global Chinese Affairs
University of Maryland

Karin Johnston
Institute for Global Chinese Affairs
University of Maryland

William Kelly
Kelly, Wooden & Associates

Anthony Lanyi
IRIS Center
Dept. of Economics
University of Maryland

Young Lee
IRIS Center
Dept. of Economics
University of Maryland

David Li
Dept of Economics
University of Michigan
and Hoover Institution

Andrew Marshall
Office of Net Assessment
Department of Defense

Michael Nacht
School of Public Affairs
University of Maryland

William Niskanen
Cato Institute

Douglas Nyhus
INFORUM
Dept. of Economics
University of Maryland

Mancur Olson
IRIS Center
Dept of Economics
University of Maryland

Michael Pillsbury
Department of Defense

George Quester
Department of Government and Politics
University of Maryland

Richard Samuels
Department of Political Science, Massachusetts Institute of Technology

Thomas Schelling
School of Public Affairs
University of Maryland

David Segal
Center for Research on Military Organization
University of Maryland

Jon Sumida
Department of History
University of Maryland

David Shambaugh
Sigur Center for Asian Studies, George Washington University

Robert Thorpe
IRIS Center
Dept. of Economics
University of Maryland

Stansfield Turner
School of Public Affairs
University of Maryland

Hongying Wang
Dept. of Political Science, San Diego State University

Martin Whyte
Dept. of Sociology
George Washington University

Alfred Wilhelm
Atlantic Council of the United States

Dali Yang
Department of Political Science, University of Chicago

Shu Guang Zhang
Department of History
University of Maryland