

INSTITUTE OF CURRENT WORLD AFFAIRS

THE YIN AND YANG OF EAST ASIA**Part III****Techno-Nationalism vs. Techno-Globalism:
East Asia in Search of a New Vision for the 21st Century***

Shanghai, China
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Mr. Peter Bird Martin
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Dear Peter,

Two world views, reflecting a fundamentally different understanding of the role of technology and totally different visions of the future, are moving toward conflict in East Asia on the eve of the 21st century. These two views can be identified as "techno-nationalism" and "techno-globalism." Both views have existed in each and all of East Asian countries, although techno-nationalism is generally more prevalent in the region. East Asia's economic cooperation and regional stability in the future, however, call for the countries in the region to take a more techno-globalistic approach.

Techno-nationalism and Techno-globalism: Concepts and Assumptions

Robert B. Reich, a cabinet member in the Clinton Administration now, and a professor at Harvard in the 1980s, coined these two terms in a 1987 article to describe the competing values involved in US-Japanese economic relations.¹ According to Reich, both techno-nationalism and techno-globalism recognize the crucial role of technology in our time. Both realize that the current technological revolution is unprecedented. As a

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Since 1925 the Institute of Current World Affairs (the Crane-Rogers Foundation) has provided long-term fellowships to enable outstanding young adults to live outside the United States and write about international areas and issues. Endowed by the late Charles R. Crane, the Institute is also supported by contributions from like-minded individuals and foundations.

recent study indicates, more than 90% of R & D (Research and Development) undertaken since the beginning of recorded history has been accomplished in just the last few decades. Approximately three-quarters of all scientists who have ever lived are still alive.²

Techno-nationalists and techno-globalists agree that the economic consequences of scientific discovery and technological advance have never been so influential upon the fortunes of particular countries and upon the entire world. These two perspectives, however, differ profoundly on the implication of technological development on international relations.

Techno-nationalism emphasizes the competitiveness among nation-states as the result of scientific and technological development. Technological strength is seen as one of the most important determinants of the rise and fall of major power. Technology has increasingly become an important economic resource which can increase industrial productivity and create exports. Because of the decisive role that it plays in the modern world, technology is viewed as a body of knowledge, a precious commodity, that people in one country should save for themselves rather than share with foreigners.³

National governments, according to techno-nationalists, can shape and reshape the structure of domestic and global industry to the benefit of national welfare. States which have the most advanced technology always get the best jobs and the highest incomes. Techno-nationalists tend to restrict technology transfer, especially high tech, among states. Techno-nationalists assume that economic power generated by technological advances can also be converted into military power. When military conflict occurs, victory is likely to go to the most advanced states.⁴



Participants from Japan, South Korea, Taiwan, and China as well as the author from the United States take part in the "International Conference on Economic Cooperation in East Asia" which was organized by the Shanghai Institute of International Studies. This newsletter is based on the paper I presented at the conference.

In contrast to techno-nationalism, techno-globalism is concerned about global issues rather than national interests. For techno-globalists, the world is faced with urgent common problems such as environment degradation, resource depletion, population explosion, international migration and refugees, international human rights, nuclear proliferation, narcotics, and the spread of AIDS. All these problems are global in scale and dealing with them requires collective action, forcing cooperation across economic and political boundaries.

No individual or state, for example, has an incentive to minimize its degrading effects on the world environment unless it is persuaded that all others will act in similar fashion. There is little incentive for China, for example, to reduce its carbon-dioxide emissions unless it is convinced that Japan will do the same. Another example is the 1986 Chernobyl incident – a Soviet nuclear reactor malfunctioned and poisonous radiative material drifted into Scandinavia and Europe. The message is clear: in our world no country lives in isolation from its neighbors. It is one planet with one fragile environment.⁵ Our lives are inextricably intertwined. Globalists liken the earth to a lifeboat sailing on an ocean, in which all of humanity will either remain afloat or sink together.

Techno-globalists attempt to examine issues in world politics from "unconventional vantage points." They argue that the nation-state system should be transformed, because the nation-state system is incapable of achieving any of the following important tasks: conserving resources, protecting the environment, controlling the world's population, securing a healthy world economy, or redistributing wealth. Economic nationalism or protectionism, for example, limits international trade and economic cooperation beyond national borders, the nation-state system facilitates polarization. The rich country becomes richer, the poor becomes poorer. Separate national states, each attempting to maximize its own immediate economic gains, violate the common good and decrease the global community's productive capacity.⁶

From the techno-globalist's point of view, technological development is an international endeavour, a joint product of multinational institutions – universities, research laboratories, and business firms – that link scientists and engineers from all corners of the globe through telecommunication. In the past decade, more foreign students than American students received Ph.D.s in natural sciences and engineering from American universities; most of them returned to their home countries. Meanwhile, a substantial portion of the funding of American university research is from foreign companies, especially Japanese.⁷

According to techno-globalists, scientists and technical experts, despite their different nationalities, tend to find a common language and thus arrive at an agreed solution to global problems. What most interests scientists in various countries is "a common aim" and "universal welfare" rather than "national interests." Collaboration in one technical field leads to collaboration in other technical, and even political, fields. In the techno-globalist terminology, cooperation will "spill-over" from one area of cooperation to the other.⁸

The Resurgence of Techno-Nationalism in East Asia

Techno-nationalism is of course not new for East Asian countries. It has been one of the driving forces in East Asia's modern history. In Japan, for example, the Meiji

Restoration started with an ideological statement "Western Technology and Eastern ethos." During the Meiji period, the Japanese people believed that "Western barbarians" were in no way superior to Japanese with respect to human qualities. The only aspect of Western society which was more advanced was its science and technology. In cultural aspects, the Japanese felt that they were superior. In order to become a major power, Japan needed to develop modern technology. Similarly, China's "*yangwu yundong*" (the Westernization movement) in the latter half of the 19th century attempted to introduce techniques of capitalist production from the West to the "Middle Kingdom."

But nationalism as well as its special form, techno-nationalism, was constrained in all parts of the world during the Cold War decades. People rarely thought of the Cold War as a conflict between competing Soviet and American nations, instead, people conceived of the Cold War as a contest between two great international ideologies, or between two antagonistic military blocs, or between two geographical regions which were imprecisely labeled "East" and "West." One could even argue that the Cold War discouraged nationalism. The mutual need to contain the Soviet Union moderated old animosities like those between the French and the Germans, or the Japanese and Koreans (in South Korea), or the Chinese and Koreans (in North Korea). Countries in the same ideological bloc often shared the latest scientific discoveries and technological breakthroughs in military industry. For example, in the early 80s, U.S. President Reagan invited some friendly nations including Japan to participate in his Strategic Defense Initiative (SDI).

Techno-nationalism was at a low ebb in Mao's China, especially during the Cultural Revolution. Mao was always suspicious of the role of science and technology in modern society. For example, in the 1960s and early 70s, he launched a great campaign to criticize "revisionists," both the Chinese and Soviets, for their "technocratic orientation." One of the popular Maoist slogans was "human spirit over machines."

The situation in East Asia after the Cold War looks very different. Nationalism incorporates an extraordinarily potent political appeal in the region. Most people in East Asia, like people in the rest of the world today, apparently accept the concept of nation-state in preference to any other form of governance as the proper framework in which to organize their political loyalties and activities. What nationalists – particularly techno-nationalists – appeals to is its promise of internal wealth and external power.

Nationalism can be a reflection of patriotic feeling in a country and can be harmless. As a force for good, nationalism liberates peoples from foreign oppression or national humiliation. To a certain extent, nationalism is necessary as a means of achieving political cohesion and social stability, especially at a time when ideology is at a low ebb, but it can greatly obstruct international cooperation.⁹

In East Asia, deep-seated animosities between Koreans and Japanese have reemerged, despite frequent visits by government officials between these two countries. According to some Western observers, South Korea and Japan have already begun to see each other as principal post-cold war threats.¹⁰ Meanwhile, both Japan and South Korea are worried about China, which has had the world's fastest growing economy for the past three years, and which could draw military power from its economic success in the decade ahead. The region is colored by uncertainty because of the triangular relationship among China, Japan and South Korea.¹¹

But the source of danger in the region is not limited to this triangular relationship.

The tension between the two sides of Taiwan Strait still exists. The Taiwan authorities recently started a campaign for "Joining the United Nations." The government in the Mainland quickly responded that any country's support for Taiwan's membership in the UN will seriously infringe on China's sovereignty and hinder its reunification. The Mainland government has not eliminated the possibility of using military force to achieve unification.

In the region, North Korea's purported nuclear program has clearly disturbed all its neighbors, if not the entire world. This nuclear danger poses what may well be the greatest threat to world order. "If we refuse to negotiate there is a strong possibility for a second Korean war, slaughter on the Korean Peninsula and worldwide nuclear proliferation," says a top South Korean official in Seoul.¹² The sudden death of Kim II Sung and the rise of military technocrats in the country have added uncertainties and anxieties to the region.

Techno-nationalistic orientation in foreign affairs is by no means a phenomenon unique to East Asian countries. Yet, in addition to the historical background in the region, three other factors make techno-nationalism in East Asia more notable.

1. The Strategy of "State-Building through Technological Strength"

All of the East Asian countries and regions have unambiguously given a top priority to technological development. "State-Building through Technological Strength" (*jishu liguo* 技术立国) has been accepted by virtually all East Asian governments as the development strategy for their countries.

Although the term was originated in a scientific and technological conference held in Japan in 1977,¹³ technology has long been seen as the major thrust to gain a competitive edge in Japan's modernization process. Two important governmental institutions, the Science and Technology Agency and the Council for Science and Technology, were established as early as the 1950s. These two governmental organizations issued the annual "White Paper on Science and Technology" to guide the direction of R & D activities for private enterprises and research institutes.

Japan's expenditures for R & D have consistently increased in the past three decades. Its share in the total R & D expenditure of the six major industrial countries increased from 1% in the 1950s, the lowest of the six, to 16% in 1985, second only to the US. In 1987, Japan spent 3.19% of the national income (up from 0.84% in 1955) on R & D.¹⁴

Experts believe that technological innovation accounted for 40.5% of the increase of Japan's GDP (gross domestic product) in the 1980s.¹⁵ Meanwhile, the Japanese government adopted the policy of protective tariffs for technological products. In the 1980s, for instance, the tariffs on semiconductors that were imported to Japan from the U.S. was 12%, while the tariffs on Japanese-made-semiconductors imported to the U.S. was only 6%.

According to a recent report by UNESCO (United Nation's Educational Scientific and Cultural Organization), Japan spent 3.1% of its large gross domestic product on research and development, followed by the United States with 2.8% and the European Union with 2%. But the percentage was only 1.1 in the Commonwealth of Independent States, 0.4 in Latin America and 0.3 in Africa. The proportion of scientists and engineers in the population was similarly unbalanced. Japan had 4.7 per 1,000 inhabitants, ahead

of Israel's 4.4 and the United States' 3.8. However, the entire Third World together had only 0.2 – one scientist in 5,000 people.¹⁶



Post-Mao China has adopted the strategy of “State-Building through Technological Strength.” In the early 1990s, twenty-seven “high-tech development zones” were established in cities across the country. The Chinese government invested several billion dollars to develop computer facilities for both civilian and military uses.

An exhibition of computer facilities is displayed in the Shanghai Business Center.

The competitive edge of Japanese technological development has inspired nationalistic arrogance among some Japanese who want to be “No. 1” in the world. As James Fallows, a former correspondent of *The Atlantic Monthly* in Japan, observed, the H-2 rocket that the Japanese space agency launched was usually described in the Japanese press as being the first rocket “entirely free of foreign components,” meaning it is free of products made by people who are not ethnically Japanese.¹⁷

Like Japan, South Korea's expenditures on R & D have consistently increased in the past four decades. The share of resources spent on research and development in

South Korea has tripled within a generation. The research funding from the government was crucial to South Korea's economic takeoff in the 1970s because Korean firms were usually reluctant to invest in R & D themselves due to the high risk and low profit of scientific research.

Technology has played an increasingly important part in South Korea's economic development. Since the 1980s, in accord with the growing needs of high-technology development, the South Korean government has strengthened its strategies to develop future-oriented, long-term, large-scale research and development projects.¹⁸ From 1962 to 1982, South Korea's GDP increased 8% annually, of which 13.6% was attributed to technological innovation. But from 1984 to 1988, South Korea's GDP increased 10% annually, of which 35% was attributed to technological innovation.¹⁹

As estimated, South Korea's R & D expenditures as part of its national income will increase from 2.5% at present to 4% in 1995 and 5% in the year of 2000.²⁰ In terms of population averages, South Korea now has the largest number of Ph.D.s in the world. The government claims that South Korea will become one of the ten major powers in high-tech by the end of this century.

Many Korean business people have been uneasy about transferring technology to developing countries such as China. They believe that technology transfer to China will have a "boomerang effect" – transforming a junior partner into a fierce competitor. Already, says Bark Taeho, an assistant to Park Jae Yoon (Korea's economic czar), Koreans are "arguing that we should invest outside of China to avoid the boomerang effect."²¹

Post-Mao China has also adopted the strategy of "State-Building through Technological Strength." In the late 1970s, Deng Xiaoping, China's senior leader, divulged that science and technology are "productive forces." In 1989, Deng went a step further to argue that science and technology are "the most important productive forces." Jiang Zemin, current Secretary General of the CCP and Chairman of the PRC, said: "International competition is actually the competition of comprehensive national power, the key is scientific and technological competition."²²

A great number of books on the so-called "comprehensive national power" (*zonghe guoli* 综合国力) have recently been published in China.²³ According to Huang Shofeng, a senior colonel of the People's Liberation Army and a leading writer on the subject, the competition of comprehensive national power among nation-states will become more acute in the 21st century. Major international battles will occur in the competition for economic power, science-technology power, and military power.²⁴ Since 1991, China's State Council has ordered construction of 27 "high-tech development zones" in cities across the country. Meanwhile, China's technology trade has increased rapidly and is expected to pass 18 billion yuan (\$3.16 billion) this year.

In Taiwan, since the late 1970s, the government has adopted policies to stimulate technological development. In 1979, the Taiwanese government established Hsinchu Science Park on the island. In 1983, the government identified eight "priority fields" such as microelectronics industry and material science. The government contributed large research funds to these priority fields. As a result, personal computers made in Taiwan now account for 11.4% of the total world's products. In addition, Taiwan is ranked No. 2 in the production of robots in the world.



*A Shanghai music store displays CDs. Nearly 90 percent of CD disks sold in Shanghai and 95 per cent of the CDs in China are estimated to be pirated copies.
Shanghai Star photo/Ding Zhiping*

Taiwan's achievements in technical education are even more impressive. The island has 42 universities and 75 polytechnics, which altogether turn out 37,000 engineers and 136,000 technicians each year. Many of them have continued their advanced studies abroad. For example, one in every four Ph.D. candidates in electrical engineering at American universities is from Taiwan.²⁵

Taiwan's R & D expenditures as part of its national income are expected to increase from 1.3% at present to 2% in 1996 and 3% in the year of 2000. The number of research personnel will increase from 15,000 at present to 43,000 in 1996.

East Asian countries now spend more of their wealth on research than Australia, Canada and some European states, but keep their findings largely to themselves for business purposes, as the Paris-based UNESCO recently reported.²⁶ In addition, intellectual property rights are not respected in some countries in the region. For example, nearly 95% of the imported CDs (compact disks) on sale in China are pirated.²⁷

2. The Fastest Growing Economies & the Increase in Military Expenditures

Estimated by the World Bank, by the year 2000, half of the annual economic growth in the world will be contributed by East Asia.²⁸ As the world's fastest growing region, East Asian countries have the great potential to transform its economic wealth to political influence and military might in global affairs.

Since the mid-1980s, Japanese military expenditures have increased 5% annually. In 1990, Japan's military spending exceeded \$30 billions and became the world's third largest spender. According to the proposal for military development in 1991-1995, Japan will spend a total of \$171 billion.²⁹ New prosperity in the region sometimes calls for the wakening of nationalistic pride and arrogance. Some Japanese intellectuals and politicians challenged the principle of pacifism, one of the basic principles of the post-war Japanese constitution. A well-known legal scholar claimed that "a major power should hold a big stick."³⁰

Military expenditures have also increased in other East Asian countries. South Korea's military spending in 1990 was \$9 billion, 5% of total GNP in the country. It increased to \$10.1 billion in 1991, 10% more than that of previous year.

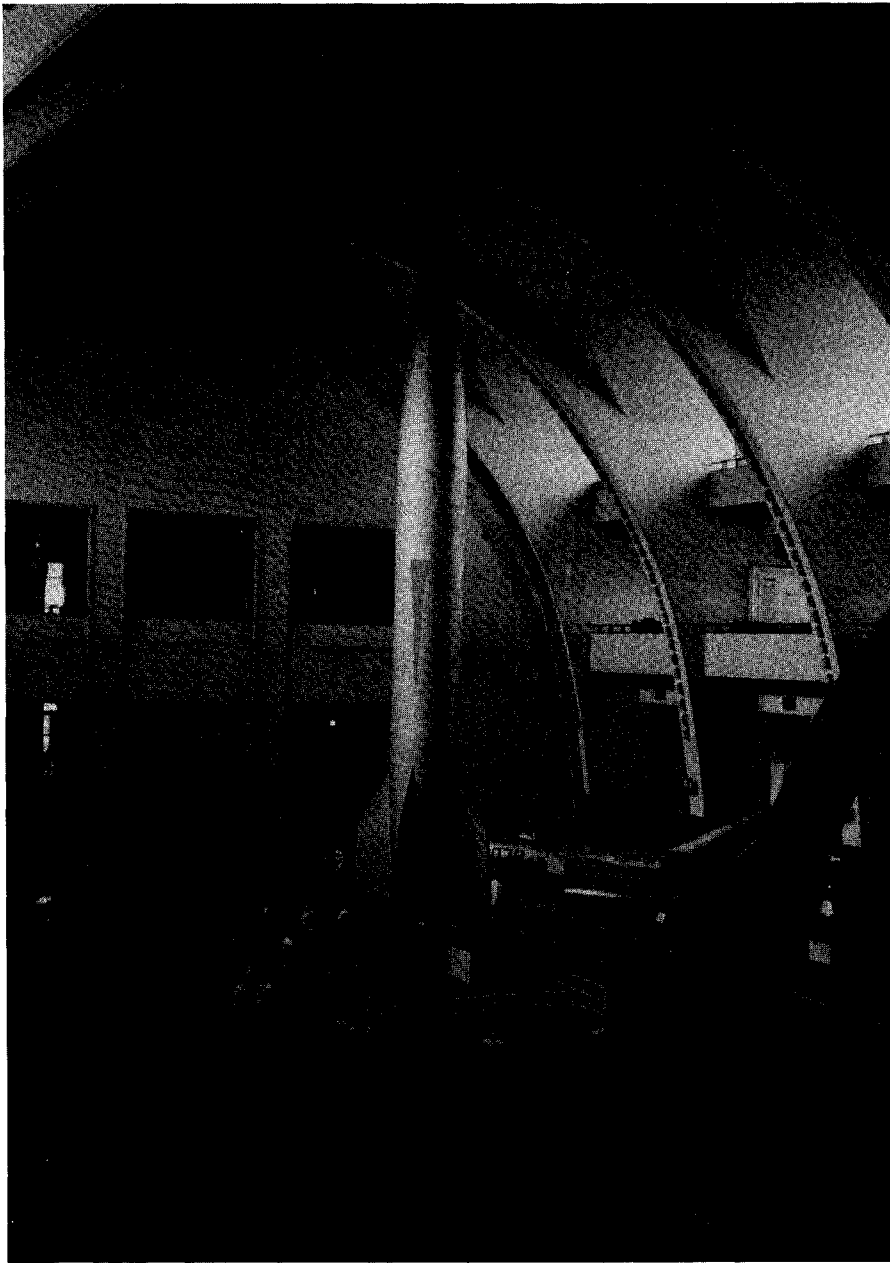
It is **unknown** that how much North Korea spends on its large armed forces, but it has been widely recognized that a significant portion of North Korea's GNP goes to military. In 1990, for example, 22.4% of North Korean's GNP was for defense.

According to the statistics provided by the Chinese government, China's military expenditures in 1991 and 1992 were \$6.3 billion and \$7.1 billion respectively, an annual increase of about 14% and 11% in these two years. Last year it rose by 25%, to 52 billion yuan (\$9.1 billion). Military expenditure is 11% of the budget and 1.7% of the GDP.³¹ According to some Westerner observers, actual military spending in the PRC may be up to five times as high because the Chinese leave R & D and pensions out of their official figures on the military.³² China's sizable purchases of equipment such as MIG 31 and Su-27 fighter planes from the former Soviet military also make its neighboring countries anxious.

As some Western observers noted, China's enthusiasm over high-tech weapons has apparently stemmed from the decisive role of 'smart' weapons which were used by the U.S. in the Gulf War.³³ Chinese top leaders urged the PLA (People's Liberation Army) to accelerate its research and development program, to obtain sophisticated military equipment. Just after the Gulf War, the Chinese government invested several billion dollars to upgrade computer equipment in its military facilities. In addition, the Chinese government has accelerated its "Blue Sea Plan," an ambitious long-term project for the modernization of the Chinese navy.³⁴

3. The Presence of Technocrats in Leadership and Implications of Technocratic Values

East Asian countries and regions differ significantly in political systems and economic structures, but virtually all of them have witnessed the increasing presence of technocrats in leadership.³⁵ Technocrats are defined as those elites who concurrently have three traits: leadership positions, professional specializations, and technical educations. We may take the top leaders of both sides of the Taiwan Strait as examples: Taiwan's President Lee Teng-hui and Prime Minister Lien Chan are technocrats educated at Cornell and Chicago respectively. The Mainland's three top leaders Jiang Zemin, Li Peng, and Zhu Rongji are all engineers by training.



China's enthusiasm over high-tech weapons has apparently stemmed from the decisive role of 'smart' weapons which were used by the U.S. in the Gulf War. Chinese top leaders urged the PLA to accelerate its R&D program and to obtain sophisticated military equipment.

An exhibition of advanced weapons is displayed in China's Military Museum in Beijing

Photo/Stephen Hess

The rapid rise of technocrats in mainland China deserves attention. Few leadership posts in the PRC were filled by such people in the late 1970s. But between 1982 and 1988, more than a half million better-educated younger cadres, many of them fulfilling the definition of technocrats, came to leadership positions above the county level. We find a striking increase in college-educated Chinese leaders at all levels, from 2% to 78% among municipal and county heads; from 4% to 58% among military leaders; and from 20% to 59% among governors and provincial party secretaries. These data are even more striking if we consider that the proportion of college graduates in the Chinese labor force in 1986 was only 0.8%. Approximately three-fourths of these college-educated elites majored in engineering and natural sciences.³⁶

It is not entirely clear what impact technocrats will have on both domestic and international affairs and how technocrats' values influence their policies. Based on my

own preliminary research, I found that technocrats are concerned more with national economic growth and their own political power than with issues confronting the world such as environment degradation.³⁷ Technocrats tend to overemphasize the positive role of technology and to overlook some negative consequences caused by technological development in a society.

Technocrats often claim that contemporary advances in science and technology have a considerable influence on all decisions relating to matters such as politics, defense, society and the economy. In technocrats' view, the role of technology is so decisive that in certain important fields it is practically impossible to make the right decision without knowledge of the discoveries made in science and technology. Therefore, decision-making power in government should go to technocrats.

Wu Jisong, Professor of Management Science at the Chinese University of Science and Technology and currently a member of the Chinese Permanent Delegation to UNESCO, argues that³⁸

Among the factors that affect economic development and production in the world, climate, natural resources and the geographical environment have now been relegated to second place, while the level of science and technology and the quality of "human resources" are playing an increasingly important role.

This statement may reflect technocrats' views towards nature and environment: nature exists only to be conquered for humankind's economic profit. According to the technocratic perspective, science and technology are deterministic. Human progress is measured in terms of material growth and the level of science and technology.

Because of this attitude towards economic development and natural environment, technocrats in East Asian countries do not pay as much attention to some serious environmental problems in the region as they should. For example, as China has achieved its rapid and large-scale industrialization, both its share of world resources and its destructive effect on the environment have increased dramatically.

Since coal is still the most important industrial fuel in China, industries such as steel making, cement manufacturing and energy production that principally depend on coal for fuel produce the most serious air pollution. This not only causes acid rain, which travels across national borders to attack forests far away in Siberia or Korea, but also adds significantly to global warming. Some experts believe that China will become the world's largest source of acid rain with 15 years.³⁹

Meanwhile, some local officials have abused the limited natural resources of the country. As a Chinese newspaper reported, China's "black triangle," Shanxi, Shaanxi, and Neimonggu – three provinces which are famous for their coal exploration, have overused natural resources in the region. They have "killed chickens for eggs," and these provinces will suffer serious ecological imbalance in the years to come.⁴⁰ In Hangzhou, a scenic city and the capital of Zhejiang Province, about 80 percent of industrial wastes are dumped into the river.⁴¹

Chinese government officials sometimes have publicly denounced conduct harmful to the environment, but they have also made it clear that "they will not sacrifice economic growth for the sake of the environment – their own or the

world's."⁴²

Prospects for Techno-Globalism in East Asia

Although techno-nationalism has been prevalent in East Asia, it is increasingly being challenged by techno-globalist thinking. We may have three reasons for being optimistic about the future.

First, foreign trade, both within the region and with the rest of the world, has continued to increase in East Asia. The US's trade with East Asia, for example, amounted to \$348 billion in 1992 – 53 per cent higher than its trade with the European Union. In Australia, the government is set to take advantage of the geographic proximity to East Asia. According to the Australian government's statistics, the East Asian market accounted for more than 60 per cent of Australia's exports in 1992 while Europe absorbed 25 per cent. This is the reverse of what had been true 30 years ago. The World Bank estimates that by the end of this century, three-fourths of world trade will take place within the Pacific area.

It has long been an assumption of liberalism in international affairs that the more extensive the economic interdependence that takes place between nations, the greater are the chances for cooperation and peace. Interdependence is reflected in the volume of transactions that flow across national boundaries – for example, communications, trade, investment, finance and transfer of technology. Economic interdependence gives each state an incentive to avoid policies that would lead the other to break these economic ties. In a way, "commerce is the cure for nationalistic prejudices." The high volume of trade between East Asian countries and beyond will contribute to economic integration and security in the region.

Second, some far-sighted political and business leaders in East Asian countries realize the great need for technological cooperation. Most of the new generation of leaders in East Asia received their education in the West. Large firms in East Asian countries, especially Japan, have started to seek technical cooperation with previous rivals. For example, Japan's National has pursued joint research with America's GM.⁴³ According to the World Bank, among Japan's 974 international cooperative treaties signed during the early 1980s, 26% were joint R % D projects and another 16% were technology-transfer projects.⁴⁴

In China, joint ventures have spread rapidly throughout the country. Foreign technology-intensive firms have also started to find their way to China. Japan ranked first in the transfer of foreign technology to China last year. Almost 30 per cent of China's technology imports came from Japan.⁴⁵ Japanese Ministry of Foreign Affairs officials have recently indicated a desire to support pollution control, arms control, and democracy, and to consider these issues in their aid and commercial relationships.⁴⁶

In recent years, Japanese firms have provided research grants and professorships to foreign universities. For example, the Japanese Electric Company established a research center at Princeton University in 1990. Harvard, Stanford, MIT, and University of California all have received professorship endowments from Japanese firms. According to a survey of 134 US universities, 53 of them received financial aid from Japanese firms since 1986.⁴⁷

In 1986, Yasuhiro Nakasone proposed during the G-7 meeting in Tokyo that advanced countries should jointly establish a graduate school of high-technology and scientific research. Although this proposal has not been realized, many private foundations have supported R & D across national borders.

A recent report issued by the Japanese government claims that Japan should adopt a new strategy of "State-Building through Technological Strength" (*xinjishu ligu* 新技术立国). This new strategy criticizes technological protectionism and calls for a more cooperative effort to deal with global issues. The report proposes five objectives: 1) Japan should make its research priorities public; 2) governments should not adopt protectionist technological policies; 3) governments should provide technological information and guarantee free technological trade; 4) governments should promote technology transfer; and 5) governments should more seriously deal with global issues. The report also specifies the methods to reach these objectives.⁴⁸

Like Japan, South Korea has participated in a number of joint research projects with European countries, for example, on information technology with Britain, on ocean and airplane technology with France, on automation equipment with Germany, on precision instrument with Switzerland.

Third, as some Western scholars have argued, East Asia's economic potential can be seen as a regional and global asset. The economic miracle in East Asia has already produced a bigger economic pie. What East Asia has achieved, or is going to achieve, is not only rapid economic development, but also political progress.

China's "economic boom" will also create the conditions for a more pluralistic and humanely governed society on China's mainland.⁴⁹ Political experiences of South Korea and Taiwan have proved that the "most desirable mode of democratization emerges spontaneously from economic growth, which sparks political consciousness among a middle class," observes Toichi Funabashi, a Japanese journalist.⁵⁰ The cultural links between the middle classes of various East Asian countries, "are strengthening through the power of electronic communications technology." Consequently, East Asia has increasingly become a "hotbed of middle-class globalism." Democratic development of East Asian countries will also contribute to peace and development both in the region and the entire world.

It is true that East Asian countries, especially China, have increased their military expenditures, but as some scholars in international affairs argue, "it would be a mistake to regard China's aspirations toward defense development as being any more sinister than those of other great powers."⁵¹ China is basically doing what the United States and European countries have been doing for decades in consolidating their military powers.

Furthermore, as Qian Qizhen, China's foreign minister, points out, China's defense expenditure budget was 43.2 billion yuan (\$7.5 billion) in 1993 while the US's was more than \$200 billion, and Japan's was \$30 billion.⁵² In addition, some Chinese technocrats, both civilian and military, publicly criticized their "hawk colleagues" who demanded large increases in the military budget. They believed that the Chinese army was already receiving a large share of limited national resources. In 1991, for example, General Shi Gengxing, Chief of Staff of the Logistics Department in

Shenyang Military Region, urged the Chinese government to keep the military budget low.⁵³

* * * * *

East Asia's economic miracle stands as one of the most fascinating developments of the post-war era. Only a half-century ago, most of these societies were still dominated by feudalism and colonialism, often disease-ridden and poverty-stricken, and to a considerable extent without hope.

Japan, for example, in less than fifty years, has transformed itself from a parochial middle-sized economy into the world's most dynamic trading and industrial power and, more recently, its largest creditor. This record is all the more remarkable when one considers Japan's smallness in size and population as compared to the United States, Russia, Canada, and India.

China's recent experience is equally remarkable. Only sixteen years ago, China was an almost totally isolated country. It had just gone through the "dark age" of its contemporary history – the decade of the Cultural Revolution. China's economy was on the edge of complete bankruptcy in the mid-80s. But now China has the world's fastest growing economy and its two-digit growth of GNP in the past decade has been the envy of the industrialized world.

East Asian countries' commitment to global trade and technological innovation (through research and development, education, management and organizational strategies) suggests that their successes are likely to continue. The great improvement of economic conditions in the region leads to its increasing prestige and power in the world. East Asia will play an even more important part in global affairs in the years to come.

How can countries in the region balance competition with cooperation? How do East Asian countries perceive the changing world? What political values will people in the region adopt as the world moves toward the new century, and indeed, the new millennium?

Two parallel, but contrasting, world views, techno-nationalism and techno-globalism, conflict with each other in the region. Nationalism is clearly not new, but in the four decades after World War II, nationalism was largely constrained. As Helen Keller said, "The heresy of one age becomes the orthodoxy of the next." Like many parts of the world today, ethnic conflicts and conflicts of national economic interests in East Asian countries may lead to hostility among people and even new xenophobia.

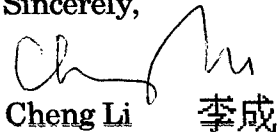
Techno-nationalism can obstruct international cooperation. Henry Kissinger recently noted, "Paradoxically, nationalism has been on the rise at the precise time when the most serious issues we all face can only be resolved through the recognition of our interdependence." Technology-related problems on a global scale such as environment degradation, resource depletion, population explosion, international migration, and nuclear proliferation all call for the countries in the region to take a more techno-globalistic approach.

Two contending forces – *yin* and *yang*, doves and hawks, techno-globalists and

techno-nationalists – have coexisted in each and all East Asian countries. A safer and more cooperative East Asia will largely depend on whether or not the people in the region are conscious of and sensitive to global problems rather than sticking to conventional and *Realpolitik* views in a changing world.

Ancient Philosopher Herodotus said over two thousand years ago: "Of all the sorrow that afflicts mankind, the bitterest is this, that one should have consciousness of much, but control over nothing." Today, when we are living in a nuclear era with some serious technological problems, and when technocrats' power has often not been checked and constrained, the bitterest sorrow might be just the opposite: one has consciousness of nothing, but control over everything.

Sincerely,



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Notes:

* An earlier version of this newsletter was first presented at the "International Conference on Economic Cooperation in East Asia" which was held by the Shanghai Institute of International Studies.

1. Robert B. Reich, "The Rise of Techno-Nationalism." *The Atlantic Monthly*, Vol. 259, No. 5 (May 1987), pp. 63-69.

2. Walter B. Wriston, "Technology and Sovereignty." *Foreign Affairs*, Vol. 67, No. 2 (Winter 1989), p. 63.

3. Reich, op. cit., p. 66.

4. For a further discussion of techno-nationalist views, see Thomas L. McNaugher, "U.S. Military Forces in East Asia: The Case for Long-Term Engagement," a paper presented at the Eighty-Fourth American Assembly (Columbia University, New York, November 11-14, 1993).

5. Frederic S. Pearson and J. Martin Rochester, *International Relations: The Global Condition in the Late Twentieth Century*. 3rd Ed. (Newburyport, MA: McGraw-Hill, Inc., 1992), pp. 519-554.

6. Richard Falk, et al., (eds.) *Toward A Just World Order* (Boulder: Westview Press, 1982).

7. Reich, op. cit., p. 63.

8. Techno-globalists are influenced by neo-functional thinking in the study of international relations. For a discussion of neo-functionalism, see Ernest Haas, *Beyond the Nation-State: Functionalism and International Organization*. (Stanford: Stanford University Press, 1964).

9. Robert A. Scalapino made this point in his article "Opportunity and Challenges for Multilateral Cooperation in Pacific-Asia," which was presented in the conference "AFTA after NAFTA" sponsored jointly by Princeton University and the Korean Economic Institute in September 1993, p. 10.

10. McNaugher, op. cit., p. 33.

11. Zbigniew Brzezinski argues that the triangular relationship among China, Japan, and South Korea (or united Korea) will become one of the most dangerous places in the Post Cold War world." See "The Cold War and Its Aftermath." *Foreign Affairs*, Fall 1992, 31-49; and "Selective Global Commitment." *Foreign Affairs*, Fall 91, 14-17.

12. Quoted from Tony Emerson, "Nuclear Nightmare," *Newsweek* (November 29, 1993, p. 12).

13. Yu Zhengui, "Zhongguo keji xinguo he riben keji liguo neihan he beijing de bijiao" (A comparison of the notion of 'State-Building through Technological Strength' in China and Japan), *Riben Xuekan* (Japanese Studies), No. 1 (1992), p. 119.

14. Science and Technology Agency, "White Paper on Science and Technology in Japan, 1987," p. 2.

15. *Riben jikan* (Japanese Quarterly), No. 1, 1991, p. 117.
16. *China Daily*, (Feb. 15, 1994), p. 8.
17. James Fallows, "Nationalism, Not Racism." *The Atlantic Monthly* (July 1992), p. 29.
18. Dal Hwan Lee, Zong-Tae Bae, and Jinjoo Lee, "Performance and Adaptive Roles of the Government-Supported Research Institute in South Korea," *World Development*, Vol. 19, No. 10, 1991, p. 1422.
19. *Keji guanli yu chengjiu* (S & T Management and Achievement), 1992, p. 105.
20. Advanced countries at present spent about 3% of their national income on the R & D expenditures. See Wei Yanshen, "jiushi nianda yazhou shixiao mianlin de tiaozhan yu xuanzhe" (Challenges and Options Before the Asian "Four Little Dragons" in the 1990s.) *Yatai yanjiu* (Asia-Pacific Studies, No. 3 (1993), p. 47; and Huang Shofeng, *Dajiaoliang: guoli, qiulilun* (A Great Contest: On National Power and Global Power), (Changsha: Hunan Publishing House, 1992, p. 237.
21. Michael Hirsh, "Pondering the Perils of Prosperity." *Institutional Investor* (October 1993), p. 40.
22. *Renmin ribao* (People's Daily), (May 24, 1991), p. 1.
23. For example, Huang Shofeng, *Dajiaoliang: guoli, qiulilun*, op. cit.; Huang Shofeng, *Zonghe guolilun* (On Comprehensive National Power), (Beijing: Chinese Social Sciences Press, 1992); Yang Lizhong and others, *Gaojishu zhanlue* (High-Tech Strategy), (Beijing: Military Science Press, 1991); and Mi Zhenyü and others, *Zhongguo de guofang gouxiang* (Concept for China's national defense), (Beijing: PLA Press, 1988).
24. Huang Shofeng, *Zonghe guolilun*, op. cit., p. 12.
25. *The Economist*, Nov. 16th, 1991, p. 13.
26. *China Daily*, (Feb. 15, 1994), p. 8.
27. *Shanghai Star*, April 26, 1994, p. 16.
28. *The Economist*, (October 30, 1993), p. 5.
29. Xu Jingfang, "Yatai diqiu junmao xinshi de fazhan" (The Situation of Arms Trade in the Asia-Pacific Region), *Yatai luntan* (Asian Pacific Forum), (May 1993), p. 7.
30. *Newsweek*, (November 22, 1993).
31. *Jiefang Daily*, (March 17, 1994), p. 1.
32. *The Economist*, (June 11th-17th, 1994), p. 23.
33. Harlan W. Jencks, "Chinese Evaluations of 'Desert Storm': Implications for PRC Security," *The Journal of East Asian Affairs*, Vol. VI, No. 2, Summer/Fall 1992, pp. 462-468.
34. *Gongdang wenti yuanjiu*, August, 1993, p. 59.
35. Li Cheng and Lynn White "Elite Transformation and Modern Change in Mainland China and Taiwan: Empirical Data and the Theory of Technocracy," *China Quarterly*, 121 (March 1990), pp. 1-35; Chalmers Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975* (Stanford: Stanford University Press, 1982); Harold Hinton, *Korea Under New Leadership: The Fifth Republic*, (New York: Praeger Publishers, 1983); and Yung-Hwan, "Secession Politics in North Korea." *Asian Survey*, (October 1986), pp. 1092-1117.
36. For a more detailed discussion of the technocratic leadership in China, see author's previous two newsletters (CL-6 and CL-7), China's "Yuppie Corps."
37. Li Cheng and Lynn White, "The Thirteenth Central Committee of the Chinese Communist Party: From Mobilizers to Managers." *Asian Survey*, Vol. 28, No. 4. (April 1988), pp. 371-399.
38. Wu Jisong, "The Role of Natural Sciences, Technology and Social Sciences in Policy-making in China," *International Social Science Journal*, Vol 44, May 1992, p. 293.
39. Nicholas D. Kristof, "The Rise of China," *Foreign Affairs*, Vol 72, No.5, Nov./Dec. 1993, p. 64.
40. *Cankao xiaoxi*, Dec. 12, 1993, p. 8.
41. *China Daily*, Dec. 8, 1993, p. 3.
42. Nicholas D. Kristof, op. cit., p. 65.
43. *Asian-Pacific Observer*, (June 1991), p. 5.
44. *Riben wenti yuanjiu*, (Japanese studies), No. 2, 1992, p. 32.
45. *China Daily*, (Feb. 28, 1994), p. 1.
46. Ezra F. Vogel, "Japan as Number One in Asia," a paper presented at the Eighty-Fourth American Assembly (Columbia University, New York, November 11-14, 1993), p. 22.
47. *Jinji chankao*, Feb, 13, 1990.
48. *Wenhui bao*, June 13, 1994, p. 4.
49. Quoted from Thomas L. McNaughter, op. cit., pp. 14-15.
50. Toichi Funabashi, "The Asianization of Asia," *Foreign Affairs*, Nov./Dec. 1993, pp. 76-78.
51. John Wilson Lewis and Hua Di, "China's Ballistic Missile Programs: Technology, Strategies, Goals," *International Security*, Fall 1992 (vol. 17, no. 2), p. 39.
52. *Jiefang Daily*, March 17, 1994, p. 1.
53. Harlan W. Jencks, op. cit., p. 474.