

areas with a good intellectual base and prior political commitment, such as Shenyang. Other factors include the rural–urban divide, which can be murky in less developed regions: this complicates the World Bank’s market approach, as farmers are slow to acknowledge their role in water pollution such as that which plagues Dianchi in Kunming. Surprisingly, of the three donors, the World Bank has demonstrated the greatest success in working with community-based management techniques, as seen in a project in impoverished rural Guangxi. Morton notes, however, a mismatch between the scale of the World Bank portfolio and the small-scale work that shows so much promise.

Despite the importance of regional variation, donor institutions have demonstrated little interest in adapting their approaches to local conditions. Other impediments to success include lack of inter-donor coordination. In fact, Morton argues, each approach on its own fails to promote sustainable management of environmental problems. A combination of all three approaches is most likely to promote a sense of shared responsibility by all parts of Chinese society. Without all of the ingredients for environmental capacity, problems arise. Aid that resolves a short-term technical problem may actually promote recipient dependency; aid that strengthens the hand of regulators may discourage a society-wide sense of shared responsibility for environmental stewardship; aid that focuses on raising prices for environmental services without full community support may stimulate resentment of environmental projects, or even social unrest.

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China’s Nuclear Future, edited by Paul J. Bolt and Albert S. Willner. Boulder: Lynne Rienner Publishers, 2006. x + 221 pp. Aus\$88.00/US\$52.00 (hardcover).

This edited volume, with contributions from leading experts in the field, assesses the modernization of China’s strategic force and suggests that Beijing is in the process of adapting its nuclear posture to a changing strategic environment. In lieu of a traditional conclusion, it weighs future alternatives for China’s nuclear force and doctrine and probes the factors that will determine Beijing’s ultimate nuclear path. The editors are well qualified for this ambitious task. Paul Bolt, Professor of Political Science at the US Air Force Academy, has taught extensively in China. Colonel Albert Willner has taught at the US Military Academy and is a US Army expert on China.

The book fills an important gap in the existing literature. *China Builds the Bomb* (1988), by John Wilson Lewis and Xue Litai, remains the definitive history of China’s 20th-century development of nuclear weapons. *China’s Changing Nuclear Posture* (1999), by Ming Zhang, thoroughly documents China’s reaction to India and Pakistan’s nuclear tests. In *The Minimum Means of Reprisal: China’s Search for Security in the Nuclear Age* (2006), Jeffrey Lewis offers a relatively static assessment of China’s nuclear arsenal that challenges foreign

estimates of its qualitative and quantitative nature. Lewis contends that China's nuclear force is unlikely to change substantially because of durable beliefs on the part of Beijing's leadership concerning the opportunity costs (particularly in centralized control), and the limited marginal utility, of additional nuclear weapons, especially in sophisticated deployment patterns. Bolt and Willner bring these and other important issues together into a single, up-to-date volume. Unlike Lewis, they consider the possibility of change in depth by probing explicitly and systematically the domestic and international factors that could influence China's nuclear posture. This nuanced consideration of multiple possibilities is a wise approach; political science has been notoriously ineffective in offering accurate predictions of the future, especially in situations in which scholars have incomplete access to relevant information.

Four particularly compelling issues emerge from this book. First, continued lack of Chinese transparency concerning nuclear weapons development and policy not only makes this subject challenging for foreign research but may complicate China's own nuclear strategy. Evan Medeiros emphasizes the psychological dimensions of nuclear deterrence as he skillfully deploys Chinese-language sources to elucidate the evolution of China's nuclear strategy and doctrine. "Chinese military thinkers consistently stress the centrality of using deception to foster ambiguity about China's nuclear capabilities" (p. 57). Medeiros highlights "an explicit tension in Chinese writings ... between maintaining secrecy about capabilities" and "revealing China's will and determination to use nuclear weapons in a crisis" (p. 68).

Second, much has been made of Chinese strategic culture and its emphasis on the finely calibrated use of force to achieve favorable changes in the overall strategic situation. In this regard, Christine Cleary reviews the impact of grand strategy, national security interests and strategic culture on Chinese decision-makers. Placing these factors in a more specific context, Medeiros argues that China's nuclear doctrine emphasizes "sufficiency and effectiveness" (p. 55). In this sense, "relative numbers of nuclear weapons are not central to Chinese military planners. As long as they can effectively threaten to carry out unacceptable damage on an adversary, then deterrence is obtained—in China's eyes" (p. 57). If indeed Chinese decision-makers have internalized these notions, it may make them confident of their ability to control escalation, with potentially destabilizing consequences for crisis communication and management.

Third, another uncertainty, raised by Phillip Saunders and Jing-dong Yuan, Ting Wai, and by Brad Roberts in his concluding chapter, is how American ballistic missile defense (BMD) architecture will evolve, and the extent to which China will develop corresponding countermeasures to preserve its nuclear deterrent. This natural linkage, with its disturbing potential to produce unintended consequences that might leave both Beijing and Washington less secure, merits thoughtful consideration by US policy-makers. Here specialized scholarship can play a vital role. It is therefore essential to differentiate between those technologies that are feasible for China to deploy in the near term and those that are likely to remain aspirational or even theoretical in nature for the foreseeable future. "Chinese strategic analysts are ... investigating three possible options",

Ting states, including “the use of space-based nuclear attack satellites to launch an attack directly on the United States” (p. 157). This is part of a larger *tour de horizon* in which Ting uses a wide variety of Chinese-language sources to probe how far China’s nuclear weapons have advanced, and their potential role in a Taiwan scenario. “With a new generation of nuclear weapons”, Ting suggests, “China has to modify its nuclear strategy” (p. 149). Given the considerable skepticism that might be raised regarding the possibility of China deploying space-based nuclear weapons (in light of its presently categorical diplomatic opposition to the militarization of outer space), however, it would be useful to give the general reader a better sense of which sources and assertions are more authoritative and compelling than others. Particularly contentious assertions may require additional documentation.

Finally, and perhaps of greatest immediate interest to foreign analysts, Medeiros and Wai question whether China’s policy of no-first-use (NFU), or at least a restrictive interpretation thereof, is sustainable. The credibility of China’s unconditionally-stated NFU policy is increasingly uncertain, particularly given China’s stake in a Taiwan contingency and sovereignty over the island, the possibility of a strike on China’s nuclear facilities with conventional precision-guided munitions (PGMs), the development and deployment of foreign BMD, the potential for launch on warning, and the exigencies of war. Indeed, lingering ambiguity concerning comments made in 2005 by Major General Zhu Chenghu, growing advocacy by some Chinese scholars, and even recent discussions in official and unofficial Chinese military journals of the advantages and use of tactical nuclear weapons, suggest that this policy may well be under debate in Beijing. Further research might consider the extent to which Chinese strategists have factored in the possibility that their American counterparts have already assumed Chinese NFU to be unreliable, and whether that is a desirable result for Beijing. It is to be hoped that follow-on studies will build on this foundational volume by further addressing such issues, which are critical to the security of China, the US and the Asia–Pacific region as a whole.

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China and the Challenge of Economic Globalization: The Impact of WTO Membership, edited by Hung-Gay Fung, Changhong Pei and Kevin H. Zhang. Armonk: M. E. Sharpe, 2006. xviii + 317 pp. US\$89.95 (hardcover).

Given the size of China’s market, it comes as no surprise that its accession to the World Trade Organization (WTO) is touted as an historic event that will bring profound changes to the country as well as the international community. While a large number of accounts have used econometric approaches to project the benefits and losses that WTO membership could elicit, *China and the Challenge of Economic Globalization* examines what has actually happened since China’s accession.