

Book Reviews

Science & Technology

***The Long Shadow: Nuclear Weapons and Security in 21st Century Asia.* Stanford, CA: Stanford University Press. xviii + 571 pages. ISBN 9780804760867, \$75.00 cloth. ISBN 9780804760874, \$29.95 paper. Muthiah Alagappa (Ed.). 2008.**

The one issue that consumed the United States' strategic policy community like none other, from August 6, 1945 to the end of the Cold War, was the role of nuclear weapons in the confrontation between, especially, the United States and the USSR. To students born after the fall of the Soviet Union—all freshmen now—events like the October 1962 Cuban Missile Crisis appear on the page but are clouded in a mist of ignorance, disbelief, and generational separation.

To the relief of this reader Muthiah Alagappa, Distinguished Research Fellow of the East–West Center in Hawaii, has assembled a force of 19 contributors to dispel the mist and bring clarity to an examination of the role of nuclear weapons in what we must term a “new strategic era.” Also, thankfully, he has limited this examination to the Asian strategic environment. Clearly, it is where the action is as the twenty-first century is entered. Alagappa has chosen wisely in assembling the specialists who have accompanied him on this very useful journey. In addition to the editor's introductory analysis where he provides a historical framework and theoretical structure for the first 100 pages of the work, he has his team cover the major issues in the nuclear debates ongoing in the United States, Russia, China, India, Pakistan, Israel, North Korea, Iran, Japan, South Korea, Taiwan, Australia, and the ASEAN states. He includes one of the major elements of the twenty-first century not present in the stand-off of the last century, the role of non-state actors and the possible use of nuclear weapons by terrorists undeterred by the historic tools of mutual intimidation.

While I applaud all the contributions of this lengthy volume, it is the final two chapters that we see Alagappa at his best as he ties together the contributions of the many specialists involved in this effort. His conclusion brings forth very clearly that deterrence—thankfully the premier application of nuclear weapons' potential after August 1945—will continue to dominate the strategic planning of the states of Asia. Extended deterrence provided by the United States to its key allies in Asia was seen as especially important and continuing. Only terrorists and other non-state actors will contemplate a crossing of the deterrence line. Therefore, Alagappa sees a role for nuclear weapons in stabilizing regional relations that were once subject to wild swings from peace to intense conflict. In this sense, the introduction of nuclear weapons in the Indian and Pakistani context has played a role to dampen the rhetoric and increase the tendency for dialog vice diatribe. Having made these useful connections in reviewing the regional “hot spots” of Asia, the editor calls upon the region and the international arms control community to respond to this new nuclear environment by forging a new nuclear order with efforts to include all nuclear weapon states in the world's non-proliferation regime. This, of course,

means a restructuring of the arms control and non-proliferation framework so that no states are excluded by commission or omission. Having Israel outside the regime and North Korea observing the first-rate treatment received by India of late from the United States does not send the message needed to be sent to an Asia that will increasingly have the resources to support policies of proliferation, if they see them as beneficial.

Having completed this book over my summer break, I must admit that it is not an “easy read.” But it stands as the only book of its nature available. Truly, our young students who wish to address policy issues associated with nuclear weapons in Asia will need it. As a Cold Warrior who witnessed the Cuban Missile Crisis from the Underground of the Strategic Air Command and the Joint Strategic Target Planning Staff in Omaha and knows firsthand how close we really came to realizing Armageddon, I am relieved that a book of this nature, and well written as it is, has finally become available. Its strengths are in presenting the history of the nuclear issue in a comprehensive manner, as well as addressing the Asian context for the coming years.

We all hope that nuclear weapons will one day become only a memory for old colonels to reflect on, but until that day comes, a genuine understanding of the awesome destructive nature of these devices must be nurtured among members of our policy community. The corollary is the imperative to seek the best international systems to control and limit the use and possession of nuclear weapons. In these respects Muthiah Alagappa and his excellent team have done us all a service. It is well worth your time.

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2005 Nobel Peace Prize Nominee—Limited Nuclear Weapons Free Zone for Northeast Asia

***Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk.* Princeton, NJ: Princeton University Press. 331 pages. ISBN 9780691134918, \$29.95 cloth. James Bessen and Michael J. Meurer. 2008.**

This book’s title leaves no doubt as to its main thesis—the patent system is not living up to its putative role, and rather than serving as a powerful provider of incentives for innovation, it has become a source of costs that, in most sectors of the economy, actually outweigh the benefits. The intellectual property rights that the system dispenses do provide private returns to their holders, “but taking the effect of other owners’ patents into account, including the risk of litigation, the average public firm outside the chemical and pharmaceutical industries would be better off if patents did not exist” (p. 16). The question asked is not whether property rights might be desirable for the intangible products of invention but whether patents in fact do work well as property. “The economic effectiveness of any property system depends not just on what it sets out to do, but also on the laws, regulations, institutions, and norms that implement the system . . . the messy details of how patents work matter” (pp. 7–8).

The book's criticism of the patent system is organized around the notion of the "notice" function of property, i.e., the ability of the system to notify non-owners of property boundaries. Such a function is problematic for patents because of the intangible nature of the underlying assets. The failure of patents to provide clear notice as to the scope of the claimed property inevitably exposes inventors to costly disputes and litigations. The central empirical aim of the book is to determine how such costs compare to the benefits that patents confer to their owners. To assess the (private) value of patents, the book presents the results of two main approaches. One relies on patent renewal behavior. Because owners must pay a fee at regular intervals to keep a patent valid, a decision not to renew indicates that the holder values the patent in question at less than the preset renewal fee. Data on renewal decisions are therefore informative as to the distribution of patent values, and, given some ancillary assumptions, one can calculate the average value of a patent (and thus the value of the populations of patents). The other method of valuing patents, which can be used for public firms, relies on the study of the firms' market value vis-à-vis their assets and patents portfolio. The expected cost of patent litigation is teased out from data on how the stock price of public firms reacts to the news of patent lawsuit filings. The authors find that apart from the chemical and pharmaceutical industries, the expected cost of disputes and litigations has considerably exceeded the total imputed value of patents (to the firms themselves) since the mid-1990s. On the whole, therefore, for most industries the patent system is proving to be a tax for innovators rather than an incentive.

The remainder of the book provides an interpretation of the increasing cost of litigation that started in the 1990s, discusses the role of patents for small inventors, and, by focusing on the proliferation of patents for abstract claims, makes a comprehensive case for the negative impact of software patents. The authors argue that to be effective, patent reform must address the problem of patent notice squarely by making patent claims more transparent and restricting vague language and overly abstract claims. Other proposed changes include increasing patent fees and tightening the non-obviousness standard to stem the flood of patents and promoting deference by the Federal Circuit to the Patent Office on matters of claim interpretation.

This is an ambitious book. It marshals an impressive array of evidence, ranging from sophisticated empirical economics to the actual workings of legal institutions, to support a striking conclusion: except for the chemical and pharmaceutical industries, the U.S. patent system might actually be an obstacle to innovation. The analysis is tantalizing, but just how convincing is it? One of its avowed principles is to eschew lofty theorizing in favor of a careful empirical construction. Perhaps a tighter theoretical framework would help clarify matters. Conclusions such as "reform should push the patent system toward the real property system by making patent claims more similar to the boundary of land" (p. 239) betray an unresolved ambivalence about the nature of intellectual property rights. That these rights must be distinctive, one might argue, is precisely because standard property rights, which typically work well for "private goods," are ill-suited to deal with the "public good" nature of the products of inventive activities, the private value of which can be easily destroyed by the free riding of imitators. As for what the data themselves can tell us, as many an economist knows, clear and convincing empirical results are rare. Take,

for example, the estimation of patent values based on patent renewals, which plays a critical role in the book's findings. About 40 percent of patents are renewed to full term, and for these patents all we know is that the owners value them more than the few thousands of dollars it takes to renew. That is, renewal data have virtually nothing to say about the value of the most valuable patents! This points to a fundamental identification problem, which the book (and others) solves by assumption, by invoking a specific distribution of patent values (e.g., the lognormal). Similar concerns can be raised about the other empirical methodologies used in the book to value the private benefits and costs of patents. That might be the best one can do with patent data, but it still raises the question of whether it is enough to support the authors' draconian conclusions.

The book adds to a growing number of dissatisfied voices concerned with the poor performance of the U.S. patent system. The topic is timely, as the Patent Reform Act of 2009, working its way through Congress at the time of this writing, grapples with some of the very issues analyzed in the book. The originality of Bessen and Meurer's approach, and the weight and detail of the evidence they provide, makes the book most worthwhile reading for anyone interested in how institutions and policies can foster innovation in a market economy.

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***Rise of the Red Engineers: The Cultural Revolution and the Origins of China's New Class.* Stanford, CA: Stanford University Press. xvi + 344 pages. ISBN 9780804760782, \$27.95 paper. Joel Andreas. 2009.**

In surveying the background of China's fourth-generation leadership, it is impossible to miss one unifying characteristic. They are all engineers and many attended China's preeminent institution of higher learning—Tsinghua University. How did a Communist Party forged in the countryside and dedicated to the radical redistribution of resources produce rule by technocratic elites? *Rise of the Red Engineers: The Cultural Revolution and the Origins of China's New Class* by Joel Andreas answers this question through a sociological history of Tsinghua University.

The book builds upon existing literature concerning the formation of social classes. In particular, it investigates the tendency for communist countries, despite class-leveling rhetoric, to produce technocratic regimes led by elite institution-trained engineers. It challenges the argument posed by George Konrad and Ivan Szelenyi that all communist revolutions are essentially designed to displace private with public property, markets with planning, and all under the leadership of intellectuals. *Rise of the Red Engineers*, however, argues that the turbulent and highly contentious relationship between China's intellectual elite and the Party-State apparatus reveals that there was no plan for rule by the former. Maoist China began with a fair degree of pragmatic technocratic cooperation between elites, but this gave way to increasing efforts at class leveling and a downplaying of the value of experts. Only after the Cultural Revolution did a solidly technocratic regime emerge. Andreas shows that it was these efforts to tear down both intellectuals and political elites that

prompted them to integrate and aggressively defend their mutual interests. This reaction to common threats, not some grand intellectual design by the revolutionaries, created the technocratic elite.

Andreas uses Pierre Bourdieu's logic of three kinds of unevenly distributed capital (social or political, cultural, and economic) to explain class formation. After communist revolutions, economic capital is seized from former elites and transferred to the state. However, those with political capital (defined by party membership) or cultural capital (defined by education) are able to retain class advantages because their skills are necessary to manage the means of production. Andreas uses events at Tsinghua University to illustrate this pattern. Tsinghua was the center of bureaucratic, political, and even physical battles over China's education and political systems. These battles were over the most equitable yet still pragmatic means of political and academic credentialing. Experiments eventually carried out across China were often initiated at Tsinghua. Thus, the case study provides a window into the extent that China's rulers attempted to break the monopoly on cultural capital held by former regime elites, and wrest away political power vested in the families of revolutionaries, as well as the degree to which they failed.

The book is divided into four historical segments. "Building Socialism" concerns the development of the political and academic credentialing systems at the university from 1949 to 1966. "The Cultural Revolution" addresses the most radical attempt to redistribute cultural capital and the simultaneous assault on political capital and privilege. Andreas argues that this attack on both sets of elites inadvertently led to unity and the forging of a new class. However, "Institutionalizing the Cultural Revolution" shows how China, from 1969 to 1976, used various mechanisms to prevent this new class from reemerging or regenerating its pre-1966 privileges. The final section, "The New Era," reveals the speed with which the institutions of egalitarian education and mass-supervision collapsed after Mao's death. The political and educational credentialing systems were rapidly rebuilt and university entrance examinations were reinstated. The elderly revolutionaries who had held political authority at all levels since 1949 were retired, opening opportunities for "Red Experts" trained before the Cultural Revolution. These new leaders rose rapidly in their factories and offices, some to national power. The book concludes by musing on the impact that economic reforms will have on the ability of the current technocratic elites to yet again reproduce their distinct advantages.

Andreas's argument that China did not intend to build a technocratic class is well supported by his narration of Tsinghua's history. He uses primary source and interview-based research to show the shifting class makeup of the student body since the revolution and the impact of different experiments on the students and teachers. Using 98 interviews with alumni and professors at Tsinghua and its attached middle school, Andreas builds a convincing case for initial class hostility and gradual unification through the Mao era. The one weakness is that the interviewees, particularly those from the Cultural Revolution era, were mostly from a single faction—*Jinggangshan*—which may have limited Andreas's perspective on the conflict and the actual alignment of factions during this time. The interviews were supplemented with records of newspapers, editorials, and official statistics from the various time periods. These records add context to the interviews, helping to explain where individuals received their influences and to verify their claims.

Scholars of Chinese politics, political economy, and modern history should find this book a useful addition to existing scholarship on China's fourth-generation leadership. This book also provides insights for those studying China's economic modernization. The final chapter notes the difficulty much of the technocratic leadership has in adapting to the market economy. It may be that China's innovation and technological strengths and weaknesses have arisen in part because of the training of their leaders as engineers and not as entrepreneurs. However, it is also in this chapter that Andreas arguably misinterprets the challenges faced by the Red Engineers and their progeny in the new economy. Rather than weakening the hold of China's existing technocratic class, reform may instead have strengthened their control. China's richest citizens are the heirs of political leaders. Political capital has transferred itself into economic capital. It may be that cultural power is declining in importance relative to political and economic, but in many cases there remains a fair degree of overlap. While the current technocratic class is likely to become less technocratic over time and more business and economic capital oriented, the membership will remain largely the same. Nonetheless, as Andreas notes, Tsinghua will remain at the top of this structure, training the next generation of China's leaders.

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Environment

***Localist Movements in a Global Economy.* Cambridge, MA: MIT Press. 312 pages. ISBN 978-0262512329, \$25.00 paperback. David J. Hess. 2009.**

Localist Movements in a Global Economy is a comprehensive, thorough, and even-handed discussion of the phenomenon of localism, which David Hess defines as "the movement in support of government policies and economic practices oriented toward enhancing local democracy and local ownership of the economy" (p. 2). Hess asks whether localism, which has been intensifying as communities have become dominated by multinational capital, can contribute meaningful solutions to the world's social and environmental problems. In trying to answer this question, he reminds readers that localism is a heterogeneous phenomenon, so global generalizations should be made cautiously. That said, he argues that at best, localism can redress environmental and social-justice problems only partially. The main reason for localism's limited efficacy is that communities face numerous constraints and incentives that are driven by forces that originate at the state, national, and international levels. Quite simply, "opting out" of the global economic system, even if many people do it, is not enough to change the world. Instead, localism must be rooted in a larger project to construct an alternative, locally based global economy—one that is driven by environmental and equity concerns rather than the interests of global multinational corporations.

To support this argument, Hess begins by examining some theoretical claims about the benefits of localism (Chapter 2). He rejects the idea that localism fits neatly within the parameters of conventional political ideologies, observing that