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launch, this reviewer is struck by the prodigious work and expenditure that went into developing these schemes before they were rejected.

Many books have been written about nuclear weapons and bomber aircraft, but comparatively little attention has been given to ICBMs, and much of that relates to the first generation ICBMs that were also used as space launch vehicles. Works like *An Untaken Road* and Gretchen Heefner's *The Missile Next Door: The Minuteman in the American Heartland* (Harvard University Press, 2012), are valuable histories of this expensive military technology. More historical work needs to be done on other aspects of ICBMs, notably the politically charged matter of missile defense.

The relevance of ICBMs appeared to have ended with the Cold War, but a generation later they have returned to the headlines. *An Untaken Road* is a valuable reference for future policymakers and for those who pay the bills for nuclear weapons and their delivery systems.

CHRISTOPHER GAINOR

Christopher Gainor is the author of *The Bomb and America's Missile Age* (Johns Hopkins University Press, 2018) and the editor of *Quest: The History of Spaceflight Quarterly*.

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### **Weapon of Choice: Small Arms and the Culture of Military Innovation.**

By Matthew Ford. New York: Oxford University Press, 2017.  
Pp. 264. Hardcover \$39.95.

Matthew Ford's densely researched volume uses small arms development after WWII as a prism through which to understand broader processes of western military innovation. Adopting a thoroughly constructivist perspective, *Weapon of Choice* systematically foregrounds the variety of social actors and interests involved in the design and selection of modern rifles and ammunition. As a sociology of military innovation, *Weapon of Choice* succeeds admirably.

The book's first substantive chapter offers a pithy discussion of the ways in which the study of technological change has been revolutionized by approaches associated by the social shaping of technology. SST insights are then applied to military innovation in the book's subsequent chapters, each of which focuses on successive phases of small arms development and their main protagonists. Concentrating on soldier perspectives on their weapons and tactics during the Second World War, Chapter 2 explores different understandings of the relative importance of marksmanship and firepower, as well as the significance of social divisions within the ranks of the Allied Armies. These factors—Ford maintains—go a long way toward explaining why neither the American nor the British armies emerged from the conflict with fully automatic weapons as their standard service rifles.



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The initial impetus to develop a new assault rifle after WWII emanated from British engineers, the focus of the book's third chapter. Their efforts at mediating between different constituencies and their authority-enhancing devices vis-à-vis a General Staff still wedded to the overarching importance of marksmanship to battlefield outcomes are central to Ford's analysis, which is especially noteworthy for demonstrating the engineers' skills in "reconfigur[ing] the user's thinking in such a way as to avoid the suggestion that engineers know better than users" (p. 55). However, since the future balance of technical power within the emerging NATO was at stake, British engineers came up against their American peers in the late 1940s. With Anglo-American engineers finding themselves at loggerheads over the question of the ammunition caliber for the prospective new automatic rifle, the services summoned wound ballistics experts (Chapter 4). But the findings of scientists were no less contested, socially situated, and open to bureaucratic manipulation than those of engineers. Thus in the event, the ultimate choice in favor of the standardization of ammunition—one which resulted in the British Army adopting the 7.62 mm Belgian-made Fabrique Nationale FAL in 1950s—was left to the recently reelected Churchill to make. The main argument of Chapter 5, then, is that temporary closure for the British politico-military establishment was achieved through a political decision divorced from actual battlefield evidence and the opinion of British experts.

The Belgian company FN is central to the story told in the book's last substantive two chapters. Chapter 6 explores the tactics it deployed to persuade the whole of NATO to adopt its improved type of 5.56 mm ammunition during the standardization trials of 1979–80. By so doing, it shows that although U.S. officials had enough power to push forward their understanding of lethality and shape the agenda of the trials, they were not in a position entirely to control their outcome. The final chapter of the book discusses the 1999 adoption of the FN's Minimi LMG by the British Army to cast light on ongoing changes in soldier-industry relationships. Its powerful conclusion is that—in the context of the privatization of the British defense sector—arms manufacturers are finding it increasingly easy to treat soldiers as consumers and sell their wares by appealing to the desire for status and identity of such Special Forces as the Parachute Regiment. Neither the privileging of elite units over the rest of the British infantry nor the former's increasing vulnerability to the marketing activities of manufacturers augurs well for the future performance and democratic accountability of the British armed forces as a whole.

The insight that "weapon acquisition is as much about fashion as it is about effectiveness" (p. 176) is not systematically developed by Ford, and this anthropologically-minded reviewer would have welcomed a fuller discussion of the symbolic attributes with which twenty-first-century soldiers endow their weapons. Another possible weakness of the book lies in its



seeming lack of concern for small arms development across the Iron Curtain. Surely (I found myself wondering at times) the success of the AK-47 must have played a more instrumental role in Anglo-American calculations than Ford allows? But these personal preferences and quibbles do not detract from Ford's achievements. As one of the few extant studies to approach the subject of military innovation from a social constructivist perspective—one that brings out the complexity and messiness of the process—*Weapon of Choice* will no doubt attract considerable attention and debate.

GIACOMO MACOLA

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**The Politics of Innovation: Why Some Countries Are Better Than Others at Science and Technology.**

By Mark Zachary Taylor. Oxford: Oxford University Press, 2016.  
Pp. 444. \$29.95.

Why are some countries better than others at science and technology? Many have asked this question in the past, mainly from a socio-cultural and historical perspective. In contrast, Taylor's story concentrates on the contemporary period. He neglects the long-term factors that historians have studied for some decades, though he does cover and criticize a large part of the recent literature. His survey is formidable.

What answer does Taylor offer to his question? To him, it is certainly not market failures that explain innovation rates, contrary to what neoclassical economists suggest. Neither is it domestic institutions and policies (alone) that explain the leadership of nations, contrary to what the system approaches pretend. Institutional explanations are "overstated and oversimplified" (p. 23). To Taylor, it is rather politics that matters. "Most innovation scholars and economists," claims Taylor, "tend to ignore politics. For them, politics and government are annoyances. . . . This book shows that politics are the sine qua non for successful explanations of national innovation rates" (p. 19). By "politics," Taylor means threats, both domestic and external. Feeling threatened by military insecurity, but also by economic insecurity and problems such as energy, climate, and health leads to creativity ("creative insecurity" as Taylor calls it) and acts as a force or motive in favor of sustained support for science, technology, and innovation activities.

This is a very piquant thesis that, I am sure, will be debated in the future (another such thesis from Taylor is the detrimental effect of distribution policies on innovation activities). The insecurity thesis has some factual evidence, as Taylor attempts to demonstrate. It also has, if I may add, some foundation in the discourses supporting the development of policies