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Book Review: Four Battlegrounds: Power in the Age of Artificial Intelligence

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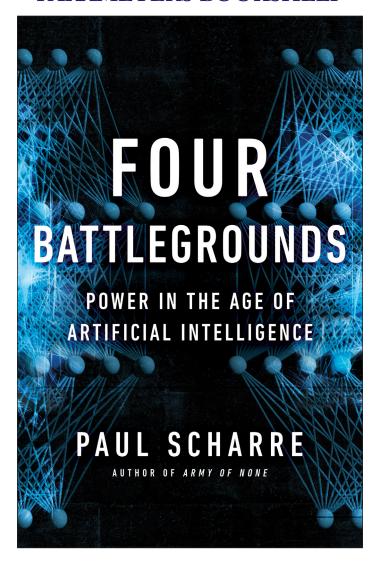
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Reviewed by Dr. Robert J. Bunker, director of research and analysis, managing partner, C/O Futures, LLC

he newest endeavor by Paul Scharre, author of *Army of None: Autonomous Weapons and the Future of War* (W. W. Norton, 2019) and vice president and director of studies at the Center for a New American Security, is a tour de force concerning the strategic military competition over artificial intelligence (AI) developing between China and the United States.

Scharre's main thesis is that the emergence and deployment of artificial intelligence will usher in a "new industrial revolution," which will result in vast military, economic, and political power advantages achieved by the states developing and implementing this technology first (12). The four keys areas where Al power will manifest itself are data, computing hardware (computers), talent, and institutions, with China and the free world at various advantages and disadvantages relative to one another.

The book is divided into a front section with a preface and introduction, eight major parts containing three to six chapters each, and an end section containing a conclusion, acknowledgements,

and other material. The eight parts are: "Power" (the most important section), "Competition," "Repression," "Truth," "Rift," "Revolution," "Alchemy," and "Fire." Each section focuses on a theme, with Part III focusing on the Chinese Communist Party's use of artificial intelligence against the Uyghurs, its own Han citizens, and foreign populations (under other repressive regimes via exporting the technology) in an extremely chilling Orwellian way. These concerns are later echoed by the warning at the end of the book:

Authoritarian uses of artificial intelligence for surveillance, disinformation, and repression pose a profound challenge to freedom around the globe. Democracies have tremendous advantages in this competition, but they must find ways to harness those advantages. Democratic societies must come together to push back against illiberal uses of AI and advance a positive agenda for AI governance.... The future of AI will be driven by those who lead in developing AI technology and how it is used. It is vital that the future of AI is one that advances human freedom and global peace (305).

One of Scharre's revelations is how artificial intelligence can revolutionize warfare vis-à-vis observe-orient-decide-act (OODA) competitive interactions. In human-to-human competitions via the Boyd cycle, the quicker/tighter OODA loop will prevail, all things being equal. This idea is initially modeled on fighter engagements. Artificial intelligence pilots in such simulated engagements with human pilots simply bypass the loop iteration process from the get-go by doing "forward-quarter gunshots" ending in an immediate kill, which is banned in human-to-human combat due to the extreme collision danger of direct jet fighter-to-jet fighter engagements (2). Artificial intelligence in envisioned conflict with humans under certain conditions thus possesses "superhuman performance" properties (3). This scenario would be like unleashing the demigod Achilles against the hapless Trojan warriors.

This readable, tightly structured, and affordable book includes well-developed research and citations with few, if any, faults evident. A fascinating and important work from a US national security studies perspective, it would be an excellent resource for a War College-level seminar focused on strategic Chinese and American AI competition and should be bundled with Kai-Fu Lee's slightly earlier AI Superpowers: China, Silicon Valley, and the New World Order (Mariner Books, 2018) to provide additional context to the emerging struggle. It should also be considered as after-hours supplemental reading for US military and policy professionals who want to understand the political-military importance of AI and its strategic (in fact, civilizational) implications for the future.

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Keywords: artificial intelligence, China, power, repression, United States