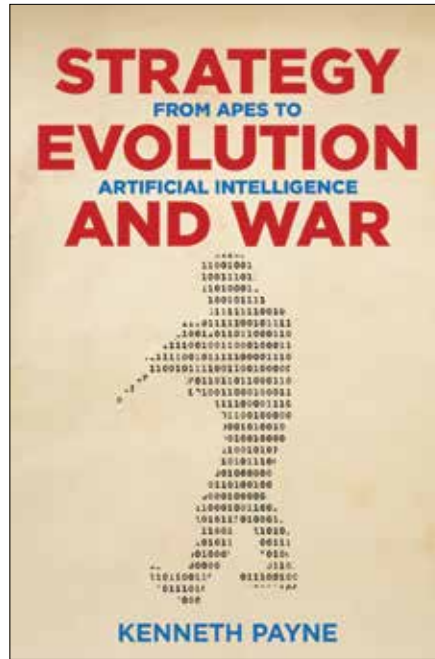


this would be ideal, for it would signal the sturdiness of the international rules and norms that no longer rely on U.S. politics. But she repudiates this proposal of a concert of nations with a list of complications around the fallacy of liberalism. In her pessimism about Trump, she does not include the option that the President will alter his behavior or his approach to foreign relations, stating that it would be “unlikely in the extreme.” Her final suggestion is a passive one: wait. Buying time may allow the United States to “come to its senses,” China to stumble, Russia to envision a better country, and the EU to strengthen. In the meantime, she advocates for educating our societies on the value of international norms and institutions. Ultimately, Schake is optimistic that the liberal order will be sustained, even though it will have to be fought for and rejuvenated by either the United States or a concert of nations.

Schake weaves other themes through the narrative as well—democratizing technologies, globalization, partnerships, Hegelian liberalism, economics, and almost every region of the world. This short read is a perfect way to join the conversation on the great power competition and the future of the international order. JFQ

Dr. Brittany Bounds is an Associate Professor in the Institute for National Strategic Studies at the National Defense University.



Strategy, Evolution, and War: From Apes to Artificial Intelligence

By Kenneth Payne
Georgetown University Press, 2018
269 pp. \$32.95
ISBN: 978-1626165809

Reviewed by Ryan Shaffer

One of the major issues facing the future of technology and defense is how artificial intelligence will reshape military strategy. Though artificial intelligence is not a new concept, advances in technology are rapidly expanding artificial intelligence’s potential capabilities. Exploring prospects for the future of war and strategy, Kenneth Payne examines the development of military strategy with two revolutions he identifies as early human cognitive transformation from 100,000 years ago, and the present changes in cognition from artificial intelligence. Payne concludes that strategy will be transformed in the future because machines are going to make key decisions for war without human cognition. Describing how strategy is a psychological activity shaped by human biology and development, he admits the speculative nature

of his argument and notes that it draws from other authors on evolutionary psychology. Payne warns that one significant change for military strategy caused by artificial intelligence is that machines will make decisions based on principles that are not exclusively human.

In the first of the book’s three parts, Payne explores human strategy’s origins in evolutionary history. He describes how human evolution has a significant role in understanding strategic interests, such as the need to belong to a group rather than just to dominate physically. Warfare is a significant part of human evolution, and thus we have developed psychologically for the challenge. As for behaviors imbedded in human psychology, Payne explains conscious and unconscious biases and notes that decisionmaking processes are not always rational because emotion shapes strategies, which are justified afterward.

In the second part, Payne looks at culture’s relationship with war and technology to understand the effects they have on human strategic behavior. Discussing case studies from ancient Greece with attention to the hoplite panoply (a weapons system of infantrymen with body armor, shields, and spears), Payne concludes that strategy maintains a deep-seated psychological basis throughout history, across countries and cultures. Even with revolutionary technological advances from the Napoleonic to the nuclear eras, Payne also finds that technology does not alter strategy’s innate psychological foundation.

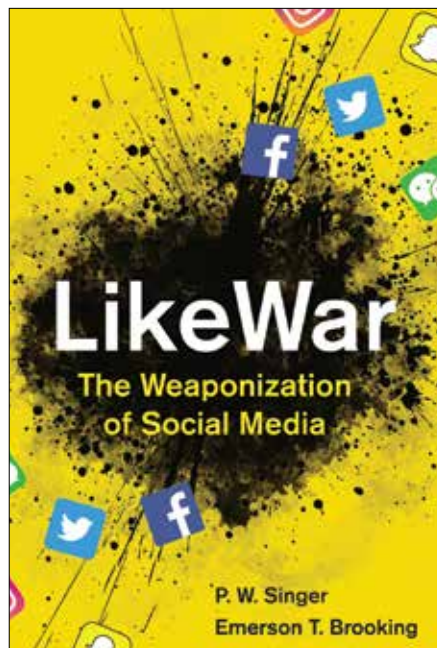
The final part focuses on artificial intelligence’s potential influence on military strategy. Payne explores what is feasible with tactical artificial intelligence, citing examples such as combat flight simulators and machine learning, and argues that artificial intelligence will shift the balance in conflict to favor the attacker and accelerate the initial steps to war. He believes these changes will affect strategic thinking by reshaping attitudes about risk and leaving decisionmakers removed from some decisions. Looking to the future, Payne offers three aspects of a hypothetical artificial general intelligence—a more

powerful and advanced artificial intelligence than what is possible now—and argues that military strategy will change as machines become more flexible and autonomous. In particular, issues of friction and uncertainty will continue to be part of human conflict, but machines acquire increasingly higher decision roles without human cognition.

Payne concludes the book by putting artificial intelligence into broad historical context with the advent of the written word, which altered the psychological basis of strategy. Because artificial intelligence is not just information-processing technology but also decisionmaking technology, advances in artificial intelligence will mark a significant departure for strategy as decisions are made without human motivations. Payne recommends that one way to protect against artificial intelligence making decisions devoid of human goals is to inject it with biological intelligences wherein a human–artificial intelligence hybrid would offer human motivations and heuristics.

Although *Strategy, Evolution, and War* is highly speculative, this book provides valuable insights about the trajectory of military strategy shaped by artificial intelligence. Payne is upfront about the book's limitations, including the notional aspects of his argument, the broad themes, and the oversimplification of the complex evolutionary processes. Indeed, readers wanting more empirical research and detailed scientific discussion will be disappointed. Payne's theories raise important questions about the future of artificial intelligence and strategy in broad terms, but they sometimes neglect ethical issues. Nonetheless, even if aspects of Payne's argument are hypothetical, his book offers valuable ideas about how artificial intelligence could change military strategy in the future. JFQ

Dr. Ryan Shaffer is a historian who researches terrorism and political violence.



LikeWar: The Weaponization of Social Media

By Peter W. Singer and Emerson T. Brooking
Houghton Mifflin Harcourt, 2018
416 pp. \$28.00
ISBN: 978-1328695741

Reviewed by Brett Swaney

There is a battlefield you cannot see, a digital ocean of social media, news feeds, botnets, sock puppets, neural nets, and trolls. In *LikeWar*, defense analysts Peter W. Singer and Emerson T. Brooking examine the role of social media in reshaping the character of war and politics. The result is a thematic and insightful overview of the weaponization of social media and the power of narrative in conflict.

The authors frame the discussion by tracing the development of communications and information technologies through the telegraph, radio, television, the Internet, Web 2.0, and social media. At each phase, new communications technology subverts some powers and people while crowning new ones in their place. Each new evolution of information and communications technology has revolutionized tactics, strategy, and

the discourse around war. This makes the utopian vision of the Internet and social media often espoused by Silicon Valley tycoons feel naïve in hindsight—a reckoning that is already well under way.

Social media was founded on the optimistic premise that the closer knit and communal world would be a better one. Yet that same openness and connection of social media platforms has also made these spaces the perfect place for continual and global conflict. The so-called Islamic State advanced on Mosul riding a wave of social media that broke the Iraqi defenders before they even arrived. A World of Warcraft gamer used geolocation and crowdsourced social media to reveal the truth behind the downing of Malaysia Airlines Flight 17, and Harry Potter character Albus Dumbledore used his army to foster community to combat violent extremists. These fascinating vignettes reinforce the reality that social media has empowered new actors and individuals in conflict with tremendous reach. Conflict is global, and we are all connected to the virtual battlefield, seamlessly able to participate in the narrative battlespace.

In modern wars, Singer and Brooking remind us, the online fight is for attention and influence; the ability to shape the narrative in and around conflict is just as important as the physical conflict. Rupert Smith in *The Utility of Force* (Knopf, 2007) and Lawrence Freedman in *The Future of War* (PublicAffairs, 2017) have noted the importance of narrative, and governments around the world have been busy adapting. The Israel Defense Forces have pioneered the development of specialized units and tactics dedicated to social media and the recruitment to man those units. Russia too has rapidly embraced the new battlespace with an army of social media “trolls,” a panoply of state media, and relentless botnets. China is also singled out for its disturbing model of social media–enabled, state-managed systems of mass control. Unfortunately, there is a noticeable lack of discussion regarding U.S. military efforts to grapple with social media in conflict, especially in the counterinsurgency space where there has been significant effort.