



## War Transformed: The Future of Twenty-First-Century Great Power Competition and Conflict

By Mick Ryan

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Reviewed by Francis G. Hoffman

Thinking about future wars and how to best posture tomorrow's joint force is an exercise in intelligent speculation. Certainty about the future is a luxury we do not enjoy. We must accept what the late Colin Gray called the "inescapable opacity" of the future. Peering into this dimly lit future and determining just how warfare is adapting—and evaluating what today's armed forces must do to recast their doctrine and equipment for future challenges—remains a complex challenge.

*War Transformed: The Future of Twenty-First-Century Great Power Competition and Conflict* offers keen insights into that question as well as some answers on how both individuals and security institutions should adapt to the changes. Author Mick Ryan is an experienced Australian Army major general who recently retired after leading

the Australian Defence College. He has written about this topic in these pages before (*JFQ* 96, 1<sup>st</sup> Quarter 2020), postulating the need for an *intellectual edge* as a source of advantage in a dynamic era. In this, his first book, he builds on that theme to examine the potential impact of the ongoing fourth industrial revolution and of several key technologies, and how they will influence societies, states, and their security institutions.

Serious students of war will find this book to be a valuable synthesis of the many issues our profession faces. Using an old metaphor from Sir Michael Howard, Ryan calls for our current leaders to become "intelligent surf riders" and ride the waves of an ongoing tide instead of ignoring the building momentum of the changes driven by what Klaus Schwab, head of the World Economic Forum, described as the fourth industrial revolution.

Ryan places the issue within its historical context and provides examples from the three prior industrial revolutions. The rigorous study of the past is a valuable tool for the joint force to use to temper dangerous speculation about the future. This cognitive task must be continually renewed to help the force discern how wars of the future might differ from previous conflicts given changes in technology and weaponry, as well as other shifts in the security environment. As the author stresses, we live in an age where many environmental conditions are in flux. Breakthroughs in computer science, quantum computing, artificial intelligence, bio-enhancement, and hypervelocity missiles may alter the offense/defense balance in different competitions and may allow for combinations and cross-domain applications that may surprise us. Understanding not just the technologies involved but the organizational and conceptual reframing required to leverage them is crucial.

There are various visions about revolutionary changes in warfare and an array of disruptive technologies in the offing. Technology will undoubtedly play a role, but weapons and information systems are simply tools—means, not ends in themselves. Ryan's emphasis on human

and cognitive factors is a refreshing perspective compared with the technocentric orientation frequently stressed in U.S. defense debates. That said, the author's insights on the applications of artificial intelligence and man-machine integration are forward leaning.

We must also remain open-minded and critical about change to be intelligent "surf riders" in what the author calls "the Age of Acceleration." As Ryan demonstrates, the past reveals eternal themes and recurring consequences for poor navigation or sloppy thinking. We have to recognize the enduring continuities of human agency, the pervasive uncertainty, and the primordial forces that come into play in warfare. Critical thinking and a culture that embraces objective experimentation separate the diligent victors from the complacent losers of military history. "For those military institutions that are quick to anticipate, recognize opportunity, learn, and adapt," Ryan concludes, "it will be an era of opportunity, prosperity, and security." Those who shirk this intellectual task are more likely to find themselves in perilous situations. The price of complacency in this era could be disastrous. Chapter 4 of *War Transformed* raises issues about adapting military institutions, which could be useful for capstone courses for senior officers rising to prominent roles in their armed forces. That chapter also offers material for civilian leaders at the Pentagon as they think about what needs to be done at the policy level to mold tomorrow's strategies and resources.

Ryan's push for the institutional imperative to generate an intellectual edge is one of his major themes and clearly draws on his last post, at the Australian Defence College. He defined this as "an organization's capacity to effectively nurture and exploit the disparate intellectual talents of its individuals to solve complex institutional problems." Without such a capacity, the author questions where the challenges of future force design, creative operational concepts, and the integration of both kinetic and nonkinetic capabilities could be successfully solved. He offers a suite of initiatives involving continuous learning programs, technological

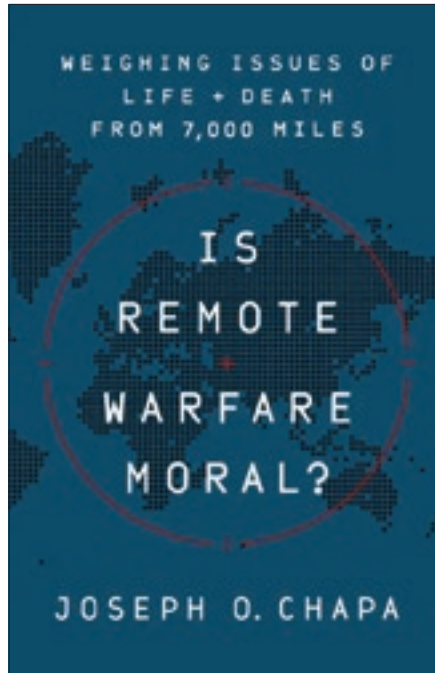
education, guided self-development, technology-abetted educational tools, and specialized elite programs to generate this edge. The themes he identified resonate with the Joint Chiefs' vision for professional military education and talent management and should be of interest to the Office of the Secretary of Defense and the Joint Staff, as well as the Service Chiefs and their learning institutions.

*War Transformed* is a rather ambitious project that asks the right questions, and Ryan offers numerous answers and recommendations as well. They are stated in generic terms, appropriate for a global audience, leaving the readers to apply the proposals to their own specific national contexts. Readers may not agree with all of Ryan's recommendations, yet he invariably frames the most critical issues and provokes his audience to join the debate. He offers a sober glimpse into the future, which will most certainly be a challenging era for the profession of arms.

*War Transformed* is strongly recommended as a guide to improve one's ability to navigate our uncertain future. Not everyone is a "surf rider," but this book will stretch minds and force readers to reassess longstanding assumptions and dated ideas. Its strength is in its synthesis of the ideas of many others, which makes *War Transformed* comprehensive and an excellent foundation for a security studies course. Supplemented by key articles for greater depth on competing ideas or specific technologies, it would be a superb text for a class on the changing character of warfare at either the undergraduate or graduate level. The issues collectively raised in *War Transformed* represent the cognitive challenge of our times, highlighting the need to change and to wisely assess the options before us. JFQ

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Dr. Francis G. Hoffman serves as a Distinguished Research Fellow in the Institute for National Strategic Studies at the National Defense University. His latest book is *Mars Adapting: Military Change During War* (Naval Institute Press, 2021).



### Is Remote Warfare Moral? Weighing Issues of Life and Death From 7,000 Miles

By Joseph O. Chapa  
PublicAffairs, 2022  
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Reviewed by Christopher Kuennen

When I explain the difference between the Services to new Air Force officer candidates, I occasionally joke that, if it came down to it, the Army could do its job with rocks, but the Air Force could not. My point is to emphasize the essential role of modern technology in the air domain, to overcome both the force of gravity and tyranny of physical distance. Warfare from a distance, of course, is not the exclusive purview of any single Service. And likewise, the lessons of Joseph O. Chapa's *Is Remote Warfare Moral? Weighing Issues of Life and Death From 7,000 Miles* are applicable beyond the remotely piloted aircraft (RPA) community upon which he focuses most of his attention. For a joint force charged with fighting from a distance—competing across oceans, planning against adversaries' anti-

access/area-denial threats, and employing artificial intelligence (AI) to make rapid sense of complex situations a world away—Chapa's book constitutes an important advance in the professional ethics of remote warfighting.

*Is Remote Warfare Moral?* is unique among comparable works in that its author is both a trained philosopher and a veteran of remote combat. Lieutenant Colonel Chapa, currently an Air Staff officer at the Pentagon, is also a rated RPA pilot and holds a Ph.D. from the University of Oxford. Chapa's unique perspective is inextricable from his exploration of the ethics of modern remote warfare. Indeed, his book often reads as a defense of the moral capacity of RPA operators, who have been alternately stereotyped as treating war like a video game or else suffering from crippling post-traumatic stress disorder. Ultimately, however, Chapa's firsthand professional experience and subject matter expertise help him draw ethical insights from our nation's use of the MQ-1 Predator and MQ-9 Reaper that are relevant to broader questions about the role of human judgment in all forms of remote warfare, from missile defense to offensive cyber operations.

The first of these insights is presented as a response to claims that remote violence is incompatible with just war and thus that the idea of a professional "remote warrior" is oxymoronic. Chapa insists on defining war as a sometimes justified, though always tragic, defense of some political community. The moral uprightness of responding to an unjust threat lends license for lethal force to certain members of the community. It follows that the qualities that make these individuals good warriors should be defined by whatever the defense of the common good demands. The martial virtues — traditionally identified with courage, loyalty, and honor — thus rightly differ in practice between the Union infantryman at Gettysburg and today's MQ-9 sensor operator, even as both fight justly against an unjust threat.

The second major insight in *Is Remote Warfare Moral?* is Chapa's development of what he calls the *judgment*