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## Analytic Approaches to the Study of Future Conflict

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Woodcock, Alexander E. R., and David F. Davis, eds. *Analytic Approaches to the Study of Future Conflict*. Clementsport, N.S., Canada: Canadian Peacekeeping Press, 1996. 300pp. \$28.95

Although there are hundreds of contemporary books about future warfare, there are very few about how to analyze it. This book is an excellent example of the latter. The keynote chapter by Eugene Visco, "Then and Now," offers a hint why this is so. During World War II the Allies, surprised by new methods and means of warfare, invented a new science, operations research (OR). Throughout the course of the subsequent Cold War, military establishments "perfected" it, bringing it from a means to evaluate the tactical employment of new technologies to an ignominious heyday during Vietnam, in which quantitative measures outpaced common sense. In the post-Cold War era, OR has been the tool of choice for right-sizing a bloated military. Presently, however, both analysts and decision makers find that it has remained static while warfare has changed dramatically. Old methods of analysis have not been validated for new operations, and new methods are not yet mature.

This work, the published proceedings of an international conference that focused on OR and future warfare, has an ambitious goal: to offer new ways of analyzing something that does not yet exist. The inventors of operations research enjoyed the analytic luxury of testing their scientific theories with real combat data, a technique obviously

problematic for developing analytic methods for future warfare. Some of the articles here describe how modeling and simulation can overcome this deficiency. This book is best where real science is employed, even when lacking real data. The "new sciences" are well represented and well applied. Of particular note are applications of complex adaptive systems, decision theory, complexity theory, and cellular automata. "Entropy Modeling" by Donald Barr and Major E. Todd Sherrill, U.S. Army, "Adaptive C3I Modeling" by Loraine Dodd and Sean Richardson, and "Emergent Conflict and the Challenge of Complexity" by J. P. MacIntosh are right on the money. It is hard to find other writers who can go beyond an academic discussion of these topics into what they will contribute to military decision makers.

Operations research, like many professions, claims to be both an art and a science. Regrettably, however, some in the warfare analysis world, when faced with flawed science, try to compensate with flawed art. This genre is represented in R. G. Coyle's, "A Semi-Quantitative Approach to Threat Assessment" and in "Developing Doctrine for Peace Support Operations" by Lieutenant Colonel Philip R. Wilkinson, M.B.E., British Army. Neither Coyle's questionable buzzwords nor Wilkinson's antiseptic, untested doctrine can make up for a lack of real analysis. Operations research is about applying analytical tools to real-world problems. Relying too much on art is like putting a paint brush in the same category of tool as a wrench; a good-looking product results, but not nearly as much work is done. Still, even the more artful techniques

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presented are helpful for organizing studies and brainstorming for alternatives.

Even today, not all warfare is active, lethal combat; campaigns will likely include peacekeeping, for example. In the founding spirit of Operations research, one excellent article by Hugh Richardson, "United Kingdom Operational Analysis Techniques in Bosnia," contains the results of contemporary, real-world, in situ analysis of peacekeeping operations. Although the author predictably has more data than answers, his approach confirms the best, time-honored analytical approach to the study of conflict: get out and study it!

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Campen, Alan D., and Douglas H. Dearth, contributing eds. *Cyberwar 2.0: Myths, Mysteries and Reality*. Fairfax, Va.: AFCEA International Press (AIP), 1998. 403pp. \$29.95

*Cyberwar 2.0* is a book about war and warfare in the intangible realm we now refer to as "cyberspace." Examining the competition, crises, and conflicts that exist in cyberspace, this book explores the parameters of warfare in this new battlespace. The editors have compiled an outstanding collection of works from a variety of authors who are predominantly leaders in their areas of expertise.

This work is a companion to an earlier book, *Cyberwar: Security, Strategy, and Conflict in the Information Age*, in which contributing editors Alan Campen,

Douglas Dearth, and R. Thomas Goodden assembled a fine cast of authorities on a variety of subjects that helped illuminate many of the vaguer aspects of cyberwar. It gave the information age historical perspective, articulated many concerns regarding the interaction of cyberwar and society, and started us on our journey to a better understanding of information warfare.

Where *Cyberwar* left off, *Cyberwar 2.0* begins. Many of the same authors have contributed to it, adding new, insightful information. For example, Chuck de Caro's excellent "Softwar" in the first book outlined exactly how television and media affect our perception of an international conflict—and of ourselves. In *Cyberwar 2.0*, he further articulates a proposal actually to incorporate these concepts into U.S. strategy, in an article entitled "Operationalizing Softwar."

*Cyberwar 2.0* is divided into five sections: Strategy and Diplomacy; Society, Law, and Commerce; Operations and Information Warfare; Intelligence, Assessment, and Modeling; and Reality. The contributing authors "flesh out" the concepts of each section and give both depth and breadth to one's understanding of the topical area. Since the topics raised are all on the cutting edge and deal with new technology, many of the assertions are extrapolations that could well be the harbingers of reality in the not-too-distant future. Despite such prophecy and articulation of future expectations, however, the discussions, taken as a whole, are well grounded in fact, based on the perspective of known paradigms. For example, the excellent contribution by Charles J. Dunlap, Jr., illustrates the issues that could arise during a hypothetical