



Book Review

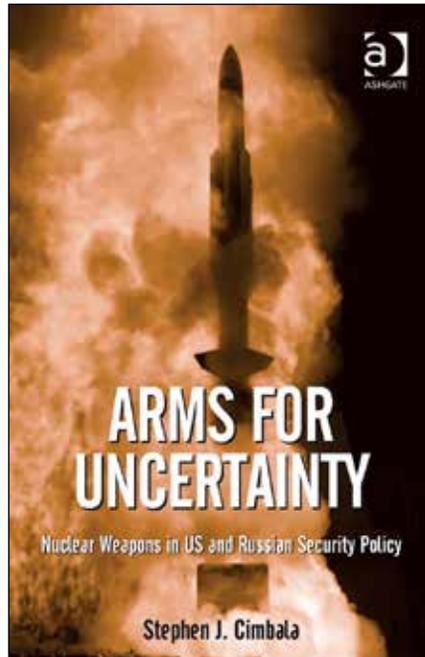
By Mark L. Maiello, PhD
Book Review Editor

Arms for Uncertainty Nuclear Weapons in U.S. and Russian Security Policy

Stephen J. Cimbala
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The somewhat baffling title supported as it is by a lengthy subtitle does little to inform the reader of the fascinating subject matter of this book. Herein resides a look backward and forward into the policy, strategy, and arms control of nuclear weapons. Authored by the formidable talent of Penn State University's distinguished professor of political science, the book is a serious analysis of Cimbala's three "nuclear ages." The first ended with the demise of the Soviet Union. The second age is the one the world finds itself currently in. The third is estimated to arrive in 2020 if nuclear arms spread to state and perhaps non-state actors. A firm belief in the permanence of nuclear weapons underscores the discussion. Nuclear abolition is however, given its due.

In ten chapters, the discussion frequently considers the modern spectrum of warfare that now includes the increased efficiency of precision targeted conventional weapons, more effective defensive measures against attacking weapons, and the parallel offensive in cyberspace that will undoubtedly accompany an offensive against a computer-dependent adversary such as the United



States. How these new technologies affect theoretical deployment and use of nuclear weapons and the nonproliferation discussion are some of the major contributions of this work.

The considerations of the author begin with the current situation, itself very fluid as the adversaries against that nuclear weapons might be used are no longer as well defined as they were in the Cold War era. Future nuclear worlds are postulated in which potential adversaries and allies may emerge. Minimum deterrence as reflected in the number of nuclear warheads in this new world of modern warfare is another result of technological change affecting policy and strategy. As mentioned, the equally modern idea of nuclear abolition is accommodated with a chapter of its own.

Discussions of the relevancy of first-use in today's regime, the nuclear arsenals of Asia including the problem posed by the nuclearization of North Korea and, NATO/Russia missile defense issues are devoted to separate chapters. The book is replete with novel discussions but none so much as the chapter given to stopping a nuclear war initiated using the computer controlled armaments and command structures of the 21st century.

Professor Cimbala is as well-armed as the weapons he analyzes. This book reveals his enviable depth of knowledge. Each chapter is heavily footnoted with reference sources that illustrate the infinite extent of the author's research. He has left the curious a generous assortment of breadcrumbs leading to further enlightenment. A healthy ten page select bibliography for further reading is testament to his underlying intent to teach. But many books by many authors take such an approach. A notable difference here lies in the analysis. The author, a political scientist — not a physicist or engineer — shows no fear in his use of computer models to support much of his research, particularly that of his estimates of the minimum nuclear deterrent that the United States and Russia currently require. Forty-one tables of modeling results and other data pepper his chapters. Rest easy for the narrative does not bog down under mathematical analysis nor does he divert the discourse to the largely tangential inner workings of the models. However, one cannot have it all: the author does assure that



the political science message remains on course but to the detriment of a discussion of where the models might go wrong (and we know that models can go wrong). In short, there are no error terms on the results. Although this pool of analytical quicksand is avoided, the reader is advised to pay strict attention to the text. This is heavy-weight material — reader prerequisites include consciousness and the ability, or, at minimum, the desire to self-enlighten. Indeed, it is somewhat unfortunate that the author's lead chapter is largely a model-based deterrence analysis that may temporarily dissuade a student or newly initiated reader from continuing onward. The subsequent chapters are where the intellectual candy is hidden.

Cimbala's analyses show that if not for the harsh reality of politics and due to the unfortunate lack of a comfortable alternative to deployment, Russia and the United States could position between 500 and 1,000 warheads under most proposed force structures and operational regimes to allow either nation a reasonable retaliatory capability. For now, such relatively paltry levels remain the chess pieces of academicians rather than the sought after goals of politicians. Such reductions await a true pan-European/NATO/Russo security establishment to be constructed that obviates the need for deterrence. Additionally, a broader "grand bargain" between other nuclear weapons states would be necessary. Such a deep draw down from the 2,000 or so long-range devices that remain operational in both the United States and Russia seems ambitious. However, as the author implies, international relations have long since reached the limits of the first nuclear age and they must evolve. A combination of conventional forces,

now augmented by precision guidance ordnance, international agreements, and diplomacy may lead the way to what he calls the potential "consolation prize" of nuclear abolition.

The author excels at marrying the current state of electronic warfare to the discussion of nuclear arms control. This revealing discussion has many layers. Nuclear weapons are to a limited extent superseded by these computer-assisted precision-targeting conventional forces. They can be as effective as nuclear weapons under some circumstances.

Cyber warfare has also changed the nuclear war game plan. Interfering with the command and control structures of nations adds frightening aspects to the initiation — or the potential termination of nuclear war. Cyber attacks are part-and-parcel of warfare, being so routine now that only the most sensational are reported such as the December 2014 attack on the Sony Corporation apparently by the irate, illiberal and "interview"-adverse North Korean government. In the chapter titled "Controlling Nuclear Crises in Digital Times," Cimbala asserts that cyber attacks do not merely disrupt communications between policy makers and military operatives. Intentions and capabilities are clouded by false information rendering data unreliable such that false detection of attack and detection of false attacks could become nightmare realities for military and government leaders. Cyber assaults wreak havoc by inserting misinformation into the data-collection stream rendering for example, damage estimates inaccurate. Such data corruption creates environments that diminish options for government officials and in so doing, narrow the problem solving abilities of those that may seek creative solutions to a nuclear crisis. In

short, they increase the probability that a graceful "way out" for either opponent will not be successful. Not as theoretical as you may think, the results of military hacking are supported by analog examples from the Cuban missile crisis. This chapter upgrades our understanding of nuclear warfare from the perspective of the digital environment — a frightening but necessary education.

In much the same manner as the preceding discussion, Cimbala presents a detail-rich discourse on nuclear war termination, citing the unpredictable affects of cyberwar on de-escalation of a nuclear conflict. But, the chapter goes much further, analyzing the many challenges to escalation control. Over decades and mainly by trial and error, American and Soviet command and control operators and analysts established a reliable system that kept intruders out while still rendering accurate responses to their respective command authorities. It is unclear whether in the new nuclear weapons states, e.g., North Korea, that such a control structure exists. India, Pakistan, North Korea, and Israel do not regularly advertise state secrets such as the delegation of authority between government officials and military field commanders regarding the launching of nuclear weapons. Furthermore, we do not know for sure whether deterrence in these states is based on preemptive considerations or second-strike capabilities. This is important because surviving nuclear forces may tip the balance of war-termination from surrender to negotiated peace (many states will desire a face saving option if presented).

But, will the leaders survive the initial attack, remain in contact with military commanders, be capable of restricting targeting and if decided, terminating the

attack? Cimbala points out that rogue commanders may be bent on revenge, failing to put their training and their professional obligations to the state in the forefront of their duties. As he points out, some may and some may not—the latter resulting in the genie never returning to the bottle. To make matters worse, mature nuclear states like Russia cannot be ruled out as escalators of nuclear conflict. This was especially true in the 1990s when its failing economy began deteriorating its conventional forces and putting pressure in its nuclear capabilities to defend the state. The latter also deteriorated forcing the United States to become invested in Russian nuclear material security. Smaller states with limited nuclear arsenals may instigate conflict and perhaps be less willing to end it. The philosophy of “use the nukes or lose them” may prevail. Yet, Cimbala warns that larger states may suffer similar syndromes under certain circumstances. The response of a nation to a

nuclear attack is dependent not only on technology but on a state’s national policy of decision making. He includes the disturbing thought that the personalities of a nation’s leadership and the mood of its public are also factors when considering the prolonging or ceasing of nuclear war. Weren’t all terrorists and states aiding terrorists targeted for vengeance by the United States after 9/11?

Cimbala concludes with practical advice. Nuclear abolition is a laudable goal but difficult to achieve when everybody else says “you go first.” But policy makers should not assume that this means the reduction of arms is not worthy of time and effort. Cimbala quips that the fewer nuclear weapons, the better for all of us. With 21st century terrorism abounding and the occasional cross-talk with states such as North Korea a high probability, the nuclear ambitions will be a source of concern and frustration for the established nuclear powers. The United States, NATO and Russia must

conclude that their mutual interests including security policy, outweigh their disagreements. Peace must be negotiated, nurtured, and backed by force if need be. It is not an automatic default position.

This particular component of the discourse put forth by Professor Cimbala is one of the most current and thought provoking to be had. To drive home the effects of indifference to current arms control and nuclear engagement issues Cimbala in a “what if” scenario, describes in a mere two pages the escalation of a middle east conflict into a Pakistan/India nuclear exchange that leaves the U.S. and its allies economically devastated and Russia with the means to further its ambitions in world politics. The nuclear agenda will always need attention lest as the author puts it, a “future history making event” such as this comes true to the detriment of all.