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978-0-521-13534-4 — Death by Moderation
David A. Koplow
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DEATH BY MODERATION

This book addresses an important but little-noticed phenomenon in the revolutionary world of military technology. Across a wide range of otherwise unrelated weapons programs, the Pentagon is now pursuing arms deliberately crafted to be less powerful, deadly, and destructive than the systems they are designed to supplement or replace. This direction is historically anomalous; military forces generally pursue ever-bigger bangs, but the modern conditions of counterinsurgency warfare and "military operations other than war" (e.g., peacekeeping and humanitarian assistance) demand a military capable of modulated force. By providing a capacity to intervene deftly yet effectively, the new generations of "useable" weaponry should enable the U.S. military to accomplish its demanding missions in a manner consistent with legal obligations, public relations realities, and political constraints. Five case studies are provided regarding precision-guided "smart bombs," low-yield nuclear weapons, self-neutralizing antipersonnel land mines, directed-energy antisatellite weapons, and nonlethal weapons.

David A. Koplow is a professor of law at Georgetown University Law Center and Director of the Center for Applied Legal Studies, where students represent refugees who seek political asylum in the United States due to persecution in their homelands because of race, religion, or political opinion. After graduating from Yale Law School in 1978, Professor Koplow served in the U.S. government in the Arms Control and Disarmament Agency (1978–1981), as attorney–adviser and as Special Assistant to the Director, and in the Department of Defense (1997–1999), as Deputy General Counsel for International Affairs. As the latter, he was the senior legal specialist for top Pentagon leadership on the full array of international legal issues, including the use of military force in the Persian Gulf and in Kosovo, the negotiation and implementation of treaties, the law of the sea, the programs of military cooperation and assistance, and the law of outer space. He has published many articles dealing with treaties and U.S. constitutional law in law journals and books on national security and arms control policy.

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THE U.S. MILITARY'S QUEST FOR USEABLE WEAPONS

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UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314-321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi - 110025, India

79 Anson Road, #06-04/06, Singapore 079906

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www.cambridge.org
Information on this title: www.cambridge.org/9780521135344

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First published 2010

A catalogue record for this publication is available from the British Library

Library of Congress Cataloging in Publication data
Koplow, David A., 1951–
Death by moderation : the U.S. military's quest for useable weapons / David A. Koplow.
p. cm.
Includes bibliographical references and index.
ISBN 978-0-521-11951-1 (hbk.) – ISBN 978-0-521-13534-4 (pbk.)
1. Military weapons – United States – Case studies. 2. Weapons systems – United States – Case studies. 3. United States – Armed Forces – Weapons systems – Case studies. 4. Precision guided munitions – United States. 5. Tactical nuclear weapons – United States. 6. Land mines – United States. 7. Anti-satellite weapons – United States. 8. Nonlethal weapons – United States. I. Title.
UF503.K66 2010
355.80973–dc22 2009017285

ISBN 978-0-521-11951-1 Hardback
ISBN 978-0-521-13534-4 Paperback

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To Mort and Marcy

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Preface

"Paper tiger." That's how Mao Zedong famously derided the United States and its military muscle, including its burgeoning nuclear arsenal, during the 1940s and 1950s. There was no denying the devastating force of atomic power – and the Chinese leader was even then attempting to replicate it by enlisting scientific and materiel assistance from the Soviet Union to create a comparable inventory for Beijing. But Chairman Mao recognized that military tools alone were inadequate; even the most overwhelming weaponry can provide no guarantee of success on the battlefield or meaningful control over global political affairs.

The intervening decades have reinforced that message, repeatedly demonstrating that superiority in armaments – as valuable as it may be – hardly suffices to ensure victory, peace, stability, or even survival of a regime. From the jungles of Vietnam to the sands of Palestine to the collapse of the U.S.S.R., qualitative dominance in sophisticated military hardware has failed to translate into effective control of the situation on the ground and has left putative global or regional superpowers frustrated and hamstrung, if not outright defeated.

This book examines that conundrum – and the latest American efforts to overcome it. The focus here is on the ongoing U.S. quest to develop weapons that are more "useable" – weapons that would not merely adorn an arsenal and impress an audience, but that could actually be employed with telling effect on a modern battlefield. In particular, the book examines a series of proposed or emerging military technologies that are remarkable because they are deliberately *less* powerful, *less* deadly, and *less* destructive than their predecessors. Paradoxically, these new generations of armaments – featuring, in various measure, greater precision, shorter duration, less lethality, and reduced collateral damage – may

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provide more effective power than their larger and more destructive, but also more inexact and crude, predecessors.

This incipient understanding – reflected simultaneously but independently in a wide array of ongoing U.S. weapons programs – emphasizes that values other than sheer firepower matter a great deal and will become even more decisive in the future. The ability to apply organized violence with something of a deft touch will have to characterize U.S. military operations; success today depends on influencing people, inducing them to bend to our will, and that often requires a mixture of both brutality and subtlety. To adapt another line from Mao, if "power grows out of the barrel of a gun," it grows best if the gun is sufficiently focused, precise, and narrowly tailored to achieve a particular purpose – the blunderbuss approach alone will no longer suffice.

To explore that proposition, the book features five case studies – analyses of five vastly different sorts of new weapons embodying the full array of explosive power, technological sophistication, frequency of use, and deadly effect. What they all share in common, however, is a gravitation toward "useability" – they enable the possessor to target a particular person, place, or thing with greater precision and to project a hostile effect in a more discrete, temporary, circumscribed manner. By being less powerful, less apocalyptic than their predecessors, these new, more moderate armaments may accordingly alter the familiar grammar of international conflict and become invoked in combat more often and with greater success.

As background to those five cases, Chapter 1 describes the ongoing "revolution in military affairs," a multifaceted undertaking that augurs broad-gauged transformation in all aspects of U.S. military life, from the structure, organization, and operation of the forces to the next waves of weapons our troops will wield. Over a period of years, these new generations of arms technology will institute changes in military doctrine as fundamental as those occasioned by the introduction of the airplane, the satellite, or the atom. One fundamental hallmark of the current revolution is an unprecedented emphasis on the emergence of "useable" weapons – the goal is not just the accretion of more raw explosive power, but more deft, calibrated power. This development is surprising, if not historically unique, for it runs contrary to the general thrust of centuries of weapons development, which almost monotonically has pursued tools of ever-increasing lethality and destructiveness.

Chapter 2 places this transformation into context by elaborating on the concept of deterrence. The most prominent traditional application

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of deterrence involves precluding international military aggression by intimidating the opposition. When we lack a robust ability to prevent, to intercept, or to defeat an enemy's attack upon us (or even if we did enjoy that power) a desirable, and often plausible, alternative is to *persuade* the potential enemy not to launch a strike against us in the first place. Often, that persuasion comes in the form of threatening retaliation ("unacceptable damage") in response to any attack, convincing any putative aggressor that the gains from an onslaught would not be worth the losses suffered in return.

The flip side of deterrence is self-deterrence, describing, in this context, a situation in which a country is reluctant or unwilling to exercise its military power, not because of fear of retribution, but for other reasons. The most relevant inhibition here would be a sense that application of excessive or indiscriminate power would be inappropriate, politically and morally unacceptable, and illegitimate. The worst problems of Gulliver in Lilliput arise when a country (arguably, the United States today) possesses an overwhelming military ability to obliterate any foe in all-out combat but does not simultaneously possess a sufficiently refined military capability to wage effective wars at less than the all-out level. If we are self-deterred against using too much power, then we may wind up doing little or nothing at all in effective response to provocations that, although serious, do not warrant the massive use of overly crude weaponry.

Standards of international law reinforce that judgment, and Chapter 3 describes the relevant principles of the "law of armed conflict" that underpin military and diplomatic dealings. Although this body of widely accepted jurisprudence enjoys neither the precision we might like nor the universal adherence it deserves, it provides important principles that align well with the intuitive sense of what is appropriate and justifiable in hostilities. In particular, the hoary concepts of necessity and proportionality, derived from nineteenth-century international diplomatic correspondence, and the accompanying notion of a requirement for discrimination or distinction between combatants and nonbelligerents, retain their validity. Together, these privileged legal obligations channel armed combat into more tolerable, more civilized forms in the hope of avoiding the worst depredations, and they reinforce the progression toward increasing the useability of nascent weapon systems. The fundamental legal requirement to be proportional in our exercise of military force – to sufficiently graduate our applications of violence – constrains our military operations: doing too much is illegal; doing too little is feckless.

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Five case studies then follow. Chapter 4 presents the most obvious illustration of a military transformation under way: the creation of precision-guided munitions (PGMs) of various sorts, especially smart bombs for air-to-surface operations. Promising – and already conveying – a genuine revolution in combat, modern bombs and projectiles can be targeted with hitherto unimaginable accuracy and reliability, zeroing in on a selected location while leaving neighboring sites unaffected. This capacity has accorded military planners a much more useable vehicle for projecting power; missions can now be undertaken in settings that would previously have been ruled off-limits out of fear of inflicting unacceptable collateral damage on the surrounding people and places. When we have the ability to do *less* damage by striking and destroying or disabling only the intended target, we gain more freedom of action.

Chapter 5 pursues that proposition in a very different setting: nuclear weapons. The history of the evolving U.S. nuclear arsenal reveals a persistent pressure toward the bigger bang, with modern nuclear leviathans exceeding by several times the explosive power of their forebears; a similar story can be told for the other nuclear countries. But in recent years, some strategists have opined that the hypertrophy of the nuclear arsenal has gone too far – by concentrating on developing such large and overwhelming devices, we have lost (or failed to pursue) the ability to apply lesser nuclear power with a sufficient degree of precision or finesse. They have suggested that a smaller, more restricted nuclear weapon might be the appropriate tool for selected missions, such as attacking an enemy's hardened or deeply buried command bunkers without inflicting massive cratering and widespread radioactive fallout on the surface. If, they reason, we possessed a calibrated nuclear arsenal capable of that kind of deft, localized destruction, we could undertake militarily valuable missions that, at present, remain outside our capacity.

Chapter 6 tests the arguments for useability in a very different setting. Antipersonnel land mines (APL) are much lower than nuclear weapons on the scale of explosive power and much higher on the scale of frequency of use. But in the past decade and a half – in reaction to the deployment of millions, perhaps hundreds of millions, of land mines in the field – the world has awoken to the humanitarian crisis caused by long-lived APL that remain lethally active for years (or decades) after the war has ended and the soldiers have moved on. Many countries, therefore, have responded by pledging to refrain from mine warfare and have negotiated a treaty to ban APL completely. The United States, however, has abstained from joining that instrument, favoring instead pursuit of a new

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technology of "smart" APL devices that self-destroy or self-neutralize in various measure after a short, predetermined period of time. That way, the Pentagon asserts, we can have the best of both goals: the nonpersistent smart mines enable us to employ the systems in situations in which there is a military advantage in doing so, without contributing to the humanitarian horrors of long-lived "dumb" mines. By making the mechanisms less robust and less durable, so they do not last as long in the field as did the earlier forms, the inventors achieve another dimension of useability.

Chapter 7 continues the exploration by investigating another very different genre of military programs: antisatellite (ASAT) weapons. The United States and the Soviet Union, as global superpowers and the major spacefaring states, explored various incarnations of ASATs throughout the cold war, and more recently, China has entered this insidious competition as well. But each of these ASAT schemes has suffered from inherent defects. Although several of the systems would likely have sufficed to obliterate enemy spacecraft, they would have accomplished that combat mission via crudely destructive explosions (nuclear or conventional) or debris-creating high-speed collisions that would simultaneously endanger the user's own satellites and perhaps inflict erratically widespread damage on the ground as well. Where any antisatellite warfare would be Pyrrhic in that way, the potential users were self-deterred. In contrast, the modern concept for ASAT – to destroy, damage, or disrupt an enemy's satellite via beams of nonexplosive directed energy – again undertakes to accomplish the assigned mission with more finesse and less collateral damage. The new technology – relying on high-energy lasers, microwaves, or subatomic particle beams – is less crudely destructive, again resulting in a more useable capacity while avoiding excessive self-deterrence.

Finally, Chapter 8 addresses one additional emerging technology, or a group of somewhat related technologies lumped under the heading of "nonlethal weapons" (NLW). Although some might see the concept of a nonlethal weapon as an oxymoron (the whole point of fighting, after all, is to inflict pain, incapacity, and death on an enemy force), there are, in fact, many situations in which it is preferable to disorient, disable, or constrain an enemy without killing, or to damage or disrupt enemy equipment without utterly destroying it. NLW advocates, therefore, have sponsored research into a bevy of novel mechanisms, and several of these nonlethal systems are now about to spill out of laboratories and research facilities. Again, the notion is that by providing an intermediate capability – less than invoking traditional lethal force, but more than doing nothing – these developments can scratch an itch in a place that's hard

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