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BELLUM AMERICANUM: THE U.S. VIEW OF TWENTY-FIRST CENTURY WAR AND ITS POSSIBLE IMPLICATIONS FOR THE LAW OF ARMED CONFLICT

*Michael N. Schmitt**

For nearly as long as humans have engaged in organized violence, there have been attempts to fashion normative architectures to constrain and limit it. Such architectures—labeled the law of armed conflict in late Twentieth century parlance—are the product of a symbiotic relationship between law and war. At times, humans, fearful that warfare is evolving in a negative direction, have acted *proactively* through law to forestall possible deleterious consequences. Thus, for example, many states, including the United States, have agreed to ban the use of blinding lasers in advance of any military force fielding them.¹ Much more frequently, however, law has proven *reactive*.² Indeed, in the

* Lieutenant Colonel, United States Air Force. Professor of Law, United States Air Force Academy. The author is indebted to Dean Barbara Safriet of Yale Law School for the opportunity to spend 1997/98 at Yale as a Visiting Scholar. The views, opinions, and conclusions expressed in this article are those of the author alone and should not be construed as an official position of the Department of Defense or United States Air Force.

1. See Additional Protocol to the Convention on the Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects, Protocol on Blinding Laser Weapons, Oct. 13, 1995, 35 I.L.M. 1218 [hereinafter Protocol IV]. The ban on bacteriological weapons also illustrates the proactive approach. Despite isolated uses of the weapons in modern warfare, for the great part their employment has been avoided. Instead, the international community has articulated a near universal abhorrence of these weapons, twice codifying prohibitions thereon in this century. See Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or other Gases, and of Bacteriological Methods of Warfare, June 17, 1925, 26 U.S.T. 571, 94 L.N.T.S. 65, 14 I.L.M. 49 (1975); see also Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, *opened for signature* Apr. 10, 1972, 26 U.S.T. 583, 1015 U.N.T.S. 164, 11 I.L.M. 309 [hereinafter Biological Weapons Convention]. Biological warfare activities of the Japanese during World War II are described in YUKI TANAKA, *HIDDEN HORRORS: JAPANESE WAR CRIMES IN WORLD WAR II* 135–65 (1996). For a fascinating account of the use of biologicals during antiquity, see Adrienne Mayor, *Dirty Tricks in Ancient Warfare*, Q. J. MIL. HIST., Autumn 1997, at 32.

2. For instance, the Union Army did not adopt Professor Francis Lieber's "set of regulations" (today known as the Lieber Code) regarding conduct in war, until the U.S. Civil War motivated the Army to do so. U.S. WAR DEP'T, GENERAL ORDERS NO. 100, INSTRUCTIONS FOR THE GOVERNMENT OF ARMIES OF THE UNITED STATES IN THE FIELD (1863), *reprinted in THE LAWS OF ARMED CONFLICTS: A COLLECTION OF CONVENTIONS, RESOLUTIONS AND OTHER DOCUMENTS* 101 (Dietrich Schindler & Jiri Toman eds., 3d ed. 1988) [hereinafter Schindler & Toman]; Richard R. Baxter, *The First Modern Codification of the Law of War*, 25 INT'L REV. RED CROSS 171 (1963). Likewise, it took Henri Dunant's account of the hor-

twentieth century, codification efforts have followed major wars in almost lock-step fashion.³

As the global community enters the next millennium, it is a propitious moment to consider how this symbiosis between war and the law of armed conflict will continue to evolve. That is the purpose of this article. It begins by asking what warfare might look like in the twenty-first century. This prognosis provides the foundation on which to offer suggestions as to how law might respond to future war.

Two obstacles stand in the way of any predictive endeavor along these lines. First, it quickly becomes apparent that there are myriad reasonable alternative futures, for the universe of variables is vast. Who are likely to be the core adversaries of the next century? How technologically advanced will these notional opponents be and what might they target? What types of conflict will dominate the future? Will States generally fight alone or cooperatively under umbrella organizations such as the UN, NATO, WEU or even the European Union? How will economic, political, ethical and social forces affect weapons development and acquisition?

The second obstacle is more basic than the first. Even assuming *arguendo* that a "best" guess can be discerned among potential futures, history, as Arthur Schlesinger has noted, teaches us that "the ability to foresee that some things cannot be foreseen is a very necessary quality."⁴ Who, for example, watching the Wright brothers' *Flyer* in 1903 would have predicted that air power would dominate late twentieth century warfare or that reconnaissance would be conducted from man-made objects circling the earth?⁵

rendous misery at the Battle of Solferino during the Italian War of Unification to focus international attention on the need for a humanitarian organization to address wartime suffering. See HENRI DUNANT, *SOUVENIR DE SOLFERINO* (1862). The International Committee of the Red Cross (ICRC) was created as a result.

3. These wars, for example, resulted in the following codifications: Russo-Japanese War of 1904–05—Geneva Convention of 1906 and Hague Conventions; World War I—1925 Gas Protocol and the Geneva Convention of 1929; World War II—Geneva Conventions of 1949 and 1954 Cultural Property Convention; Korea, Vietnam, and the "wars of national liberation"—Additional Protocols I and II, the Environmental Modification Convention, and the Conventional Weapons Convention. International law even reacted to the Cold War through treaties designed to limit the spread of nuclear weapons, the terrifying power of which had been demonstrated at Hiroshima and Nagasaki. Each of the law of armed conflict instruments is available at the ICRC documents website (visited May 18, 1998). See <<http://www.icrc.org/unicc/ihl_eng.nsf/web?OpenNavigator>>. Arms control treaties are available at the Arms Control and Disarmament Agency website (visited May 18, 1998). See <<<http://www.acda.gov/treatie2.htm>>>.

4. ARTHUR M. SCHLESINGER, JR., *THE BITTER HERITAGE: VIETNAM AND AMERICAN DEMOCRACY 1941–1966*, at 96 (1967).

5. On the difficulty of predictive efforts regarding technology, see Herb Brody, *Great Expectations: Why Technology Predictions Go Awry*, *TECH. REV.*, July 1991, at 39.

Despite the fog obscuring the future, the search for its correct trajectory is a necessary exercise in our efforts to affect it positively. This article acknowledges, but defers, the uncertainty by focusing on a particular alternative future, what will be called here *Bellum Americanum*—American war, the view of future war and warfare most prevalent in U.S. military circles. Hopefully, use of the model will be judged neither xenophobic nor ethnocentric. Rather, it was selected because its vision is, in a relative sense, developmentally mature. Moreover, as the construct of a technologically oriented military wielding significant influence over how even combined operations⁶ are executed, the U.S. approach will likely exhibit determinative influence over warfare's evolution for the foreseeable future.

After describing *Bellum Americanum* at some length, the article turns to the "stressors" it presents for the current law of armed conflict. The term stressors is used to suggest that law evolves as it is stressed by changing circumstances. Much as water seeks a constant level, law inevitably moves to fill normative *lacunae*. Correspondingly, law loses its normative valence when it no longer serves "community"—a relative concept—ends. Thus, law is contextual and directional. It is contextual in the sense that it is understood and applied based upon the specific social, economic, political, and military milieu in which it operates. It is directional, for it is characterized by distinct vectors; its generation or demise is rarely spontaneous or random. Cognizant of the suspect character of any predictive effort, then, this article will describe and analyze how the context of a notional future, *Bellum Americanum*, might affect law substantively and directionally. Of course, only time can validate the approach.

THE U.S. VISION OF THE TWENTY-FIRST CENTURY POLITICAL-MILITARY ENVIRONMENT⁷

In the U.S. vision of the twenty-first century world, the gap between rich and poor states—between "have" and "have nots"—will continue to grow. This chasm will result in great part from the ability of developed

6. Joint operations are those which include forces of more than one service. Combined operations include forces of more than one State.

7. This vision is based primarily on JOINT CHIEFS OF STAFF, CONCEPT FOR FUTURE JOINT OPERATIONS: EXPANDING JOINT VISION 2010, 8–9 (1997). See, e.g., U.S. SPACE COMMAND, VISION FOR 2020 (1997) [hereinafter SPACE COMMAND VISION]. Note that the term "vision" is employed here because it is the term used within the U.S. military when articulating views of the future. It is predictive rather than aspirational in nature. For example, it is not the U.S. desire to see the gap between technologically advanced and technologically disadvantaged states grow.

states to leverage their comparative economic and technological advantages. At the same time, global economic interdependence will increase due to specialization in production by individual countries or blocs thereof. That interdependence may play itself out in the form of regional trading blocs, possibly dominated by a single state. As might be expected, state-centrism will continue to weaken in the face of the growing influence of intergovernmental and nongovernmental organizations, multinational corporations, and even terrorist groups and international criminal syndicates.

Within the developed world, increased economic well-being and wider diffusion of advanced technology will give a greater number of states the wherewithal to play a consequential role on the international scene. In particular, more states will be able to invest a greater amount in weapons acquisition. Economic and technical prowess will also allow additional states to develop an indigenous weapons production capability, a destabilizing trend that would likely lead to further proliferation of high technology weapons.⁸

On the other side of the chasm, the lesser and undeveloped countries will suffer from declining standards of living. Citizens of the disadvantaged states will be increasingly cognizant of their plight due to the pervasiveness of mass communications. The result will be, at least in some areas, unrest and instability as the "have-nots" are sensitized to the gap between themselves and the "haves."

Regional conflict is expected to remain the major threat to international peace and security,⁹ and there will be an increasing likelihood of asymmetrical challenges. Stymied by the relative dominance of the U.S. and its allies in conventional warfare, opponents, whether states or not, will consider such unconventional means as weapons of mass destruction, information warfare, and terrorism to strike less traditional centers of gravity. Many threats will be transnational in nature—e.g., international drug and weapons trade; political, religious, or ethnic extremism; environmental damage. In addition, the risk of "wild card" events (i.e., unanticipated occurrences that fundamentally change the international power scheme) will always be present.

8. On the proliferation threat from both state and non-state actors, see, for example, OFFICE OF THE SECRETARY OF DEFENSE, *PROLIFERATION: THREAT AND RESPONSE* (1996).

9. The National Security Strategy categorizes the threats described herein as: regional dangers, asymmetric challenges, transnational dangers, and wild cards. See THE WHITE HOUSE, *A NATIONAL SECURITY STRATEGY FOR A NEW CENTURY* 8–10 (1997). For an argument that future clashes are likely to be driven by culture rather than ideology or economics, see generally, Samuel P. Huntington, *The Clash of Civilizations?*, FOREIGN AFF., Summer 1993, at 22.

Security specific visions of the next century are the byproduct of these larger trends.¹⁰ Military power will continue to be a major determinant of national strength, though resort to force by developed states will most often be in collaboration with others. Proliferation of conventional weapons will be widespread, and the number of nuclear powers will grow. Military forces will continue to be called on to conduct humanitarian operations and deter the spread of regional conflict, as in the case of Bosnia.

In the developed world, militaries will become smaller, compensating for their loss of personnel and equipment by leveraging technology to allow them to fight asymmetrically against larger forces.¹¹ Lesser developed but upwardly mobile countries, particularly those which aspire to regional dominance, will retain large standing armies because of the symbolism of such forces. Terrorism will be a growing factor in military planning, particularly if terrorists acquire nuclear, chemical, or biological weapons.¹²

Warfare will become ever more technologically driven and dependent. Advances in microtechnology, biotechnology, and information technology will radically transform the weapons of war and the way war is fought. So too will the growing dependence of the military on space-based assets. As society and warfare evolve, the desired targets of war will also shift. The goal will still be to strike decisively at an enemy's center of gravity (or that of a target state or non-state actor in situations short of armed conflict), but what constitutes a center of gravity in the future may radically differ from those with which warfighters are familiar today.¹³ The old paradigms of war and warfare are being broken as we enter the next millennium.

10. These trends are described generally in JOINT CHIEFS OF STAFF, *supra* note 7, at 9–10.

11. On leveraging the advantage in technology, see Anthony H. Cordesman, *Compensating for Smaller Forces: Adjusting Ways and Means through Technology*, in U.S. ARMY WAR COLLEGE, STRATEGIC CONCEPTS IN NATIONAL MILITARY STRATEGY SERIES 1(1992).

12. All of the likely adversaries of the United States in the Middle East are developing chemical and/or biological warfare capabilities. See OFFICE OF INTERNATIONAL SECURITY AFFAIRS, DEP'T OF DEFENSE, UNITED STATES SECURITY STRATEGY FOR THE MIDDLE EAST 17–18 (1995). Each also supports, in one form or another, terrorism. See *id.*

13. A wargame held recently at National Defense University illustrates the type of warfare the future may hold. Set in the year 2000, the scenario posits an OPEC meeting that collapses when Saudi Arabia opposes Iranian demands for a production cutback in order to drive prices up. After mobilizing its forces, Iran conducts several conventional attacks on Saudi naval vessels. Hoping to destabilize the Saudi government and keep the U.S. and UK out of the conflict, the Iranians conduct new-generation unconventional warfare. For instance, a Saudi refinery is destroyed when computer malfunctions in its control mechanism cause a fire to break out; a "logic bomb" placed in the computer system that runs trains in the U.S. causes a passenger train to crash into a freight train; computer "worms" begin to corrupt

THE U.S. RESPONSE

In order to deal effectively with this uncertain geopolitical environment, the United States has fashioned a National Security Strategy labeled *Engagement*, the underlying premise of which is a rejection of isolationism in favor of the post-World War II global involvement in world affairs—illustrated by the Marshall Plan, NATO, the UN, the International Monetary Fund, the World Bank, etc.—that is viewed as having won the Cold War.¹⁴ Because there are no well-defined adversaries, the military component of the strategy is capability-, not threat-based.¹⁵ The goal, one that will likely continue in rough form into the foreseeable future, is to “be able to deter and defeat nearly simultaneous, large-scale cross border aggression in two distant theaters in overlapping time frames, preferably in concert with regional allies.”¹⁶ This capability to fight and win two major theater wars is complemented by the ability to conduct “multiple, concurrent smaller-scale contingency operations,”¹⁷ such as limited strikes, no-fly zone enforcement, sanctions monitoring, or peace-keeping/enforcement operations.

Operationally, these capabilities (and any others whose need may surface) will be achieved through “full spectrum dominance,”¹⁸ the ability to dominate warfare whether it occurs in space, the air, on land, or at sea and regardless of the level of hostilities. *Joint Vision 2010* is the U.S. articulation of how “full spectrum dominance” will be accom-

the U.S. military's classified deployment database; and a “sniffer” disrupts funds transfers in the Bank of England. Steve Lohr, *Ready, Aim, Zap*, N.Y. TIMES, Sept. 30, 1996, at D1.

14. See THE WHITE HOUSE, *supra* note 9, at 2.

15. See Admiral William A. Owens, *The Emerging System of Systems*, PROCEEDINGS, May 1995, at 36. A threat-based strategy is designed to counter specific threats—e.g., the Soviet threat during the Cold War. By contrast, a capability-based strategy is driven by particular capabilities—e.g., global mobility. Of course, the strategy selected drives force structure development. For a catalogue of the capabilities seen as necessary by the U.S. military, see JOINT CHIEFS OF STAFF, NATIONAL MILITARY STRATEGY 24–27 (1997). A comprehensive study of U.S. strategic strengths and weaknesses is NATIONAL DEFENSE UNIVERSITY, STRATEGIC ASSESSMENT 1996 (1996). The Department of Defense completed a major assessment of future force structure requirements in 1997. For the Secretary of Defense's overview of the Review, see, for example, WILLIAM S. COHEN, THE REPORT OF THE QUADRENNIAL DEFENSE REVIEW (QDR) (1997). A longer term assessment than the QDR is NATIONAL DEFENSE PANEL, TRANSFORMING DEFENSE: NATIONAL SECURITY IN THE TWENTY-FIRST CENTURY (1997).

16. JOINT CHIEFS OF STAFF, *supra* note 15, at 15. Today, the dual threat is generally viewed as consisting of North Korea and Iran or Iraq. It is recognized that these may not be the opponents of the future. However, the underlying concept, being capability-based, is that the United States needs to be ready to respond to two major theater wars, whoever the opponents might be.

17. *Id.* at 16.

18. JOINT CHIEFS OF STAFF, JOINT VISION 2010, at 25 (1996).

plished in the twenty-first century.¹⁹ *Joint Vision 2010* advances operational concepts, made possible through technological innovation and information superiority, that express how the United States will fight in the future. Three of these concepts are particularly relevant to this article.

The first, *dominant maneuver*, is "the multidimensional application of information, engagement, and mobility capabilities to position and employ widely dispersed joint air, land, sea and space forces."²⁰ In the past, battlefields were generally linear—fielded forces faced each other across a geographically distinct line. In dominant maneuver warfare the battlefield is replaced by the *battlespace*, with force being applied from a wide variety of precision platforms which are maneuvered in synchronization with other platforms to defeat a target pinpointed by superior information capabilities.²¹

Precision engagement, the second operational concept, "will consist of a system of systems that enables [U.S.] forces to locate the objective or target, provide responsive command and control, generate the desired effect, assess our level of success, and retain the flexibility to reengage with precision when required."²² The concept of precision implies more than precise weapons; it is the ability to achieve a desired effect on a specified objective.²³ Key to the concept is a robust surveillance and reconnaissance capability and a collection of weapons systems that can generate just the right degree and kind of effect. Complementing precision engagement is *full dimension protection*, which will employ information technology to enhance the survivability of U.S. forces.²⁴ It is based on the concept that the easiest threat to deter is a known one.²⁵

Conceptually, then, warfare as envisioned in *Joint Vision 2010*, will be fast-paced, mobile, and highly lethal. An array of information gathering and processing assets will operate synergistically to generate greater situational awareness of the battlespace and provide the means necessary to surgically shape it.²⁶ If successful, the warfighter of tomorrow

19. See *id.* Service specific visions complement JOINT VISION 2010. See, e.g., U.S. NAVY, FORWARD ... FROM THE SEA (1994); U.S. ARMY, ARMY VISION 2010 (1996); U.S. AIR FORCE, GLOBAL ENGAGEMENT: A VISION FOR THE TWENTY-FIRST CENTURY AIR FORCE (1996).

20. JOINT CHIEFS OF STAFF, *supra* note 19, at 20.

21. See JOINT CHIEFS OF STAFF, *supra* note 7, at 50.

22. JOINT CHIEFS OF STAFF, *supra* note 19, at 21.

23. See JOINT CHIEFS OF STAFF, *supra* note 7, at 51.

24. See JOINT CHIEFS OF STAFF, *supra* note 19, at 23.

25. Focused logistics, the fourth operational concept is the "fusion of information, logistics, and transportation technologies to provide rapid crisis response, to track and shift assets even while enroute, and to deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical levels of operations." *Id.* at 24.

26. The National Military Strategy cites the following "strategic enablers": 1) a high quality force; 2) robust all-source intelligence; 3) global command and control; 4) air and sea

will be able to operate within the enemy's decision cycle. This alternative future will cause new law to surface and highlight law which is no longer responsive to its changed context.

THE REVOLUTION IN MILITARY AFFAIRS

The question *du jour* among those who focus on security issues is whether these operational concepts are made possible by a "revolution in military affairs" (RMA).²⁷ Revolutions in military affairs occur whenever the nature of war and warfare fundamentally changes.²⁸ For instance, Napoleon's use of the citizen soldier in the French army of the 1790s presaged war in which entire societies would be involved. A more recent RMA occurred with the advent of nuclear weapons.²⁹ In the then existing bipolar world, off-setting nuclear arsenals led to war by proxy, but deterred the major-power mass conflicts that had characterized interstate conflict during the past century-and-a-half. As in other RMAs, new weapons and defenses (e.g., nuclear mines and artillery, intercontinental ballistic missiles, and antiballistic missile systems) were fielded and new operational concepts (e.g., limited nuclear options, extended deterrence, counterforce and countervalue targeting) were developed.

control; 5) space control; and 6) strategic mobility. See JOINT CHIEFS OF STAFF, *supra* note 15, at 27-29.

27. On the "revolution in military affairs," see Dennis M. Drew, *Technology and the American Way of War: Worshipping a False Idol?* AIR FORCE J. LOGISTICS, Winter 1987, at 21; James R. FitzSimonds, *The Coming Military Revolution: Opportunities and Risks*, PARAMETERS, Summer 1995, at 30; Dan Gouré, *Is There a Military-Technical Revolution in America's Future?*, WASH. Q., Autumn 1993, at 175; Andrew F. Krepinevich, *Cavalry to Computer: The Pattern of Military Revolutions*, in STRATEGY AND FORCE PLANNING 582 (Naval War College Faculty eds., 1995); Andrew F. Krepinevich Jr., *Keeping Pace with the Military-Technical Revolution*, ISSUES IN SCI. & TECH., Summer 1994, at 23; Kenneth F. McKenzie Jr., *Beyond Luddites and Magicians: Examining the MTR*, PARAMETERS, Summer 1995, at 15; Abhi Shelat, *An Empty Revolution: MTR Expectations Fall Short*, 35 HARV. INT'L REV. 49, 52 (1994).

28. Colin Gray, e.g., cites seven "historical transformations of warfare" since the fall of Rome: 1) fifth century cavalry, which "ushered in a long period of advantage for soldiers who could fight on horseback"; 2) the "military revolution" of the 16th and 17th centuries that "was led by the adoption of firearms for siege and open warfare"; 3) the "Nation in Arms," a "concept of popular warfare, increasingly armed and sustained by industrially and agriculturally modern states"; 5) "mechanized warfare", signaled in 1916 by use of the tank in the Battle of the Somme and large-scale aerial battles over Verdun; 6) "nuclear warfare"; and 7) information age warfare. Colin S. Gray, *The Influence of Space Power upon History*, 15 COMP. STRATEGY 293, 297 (1996). See also, Eliot A. Cohen, *A Revolution in Warfare*, FOREIGN AFF., Mar./ Apr. 1996, at 37.

29. For a comparison of the nuclear and information RMAs, see Martin C. Libicki, *Information & Nuclear RMAs Compared*, NAT'L DEF. U. STRATEGIC F., No. 82, July 1996 (visited Sept. 13, 1998) <<http://www/ndu.edu/ndu/inss/stforum/forum82.html>>.

When they occur, RMAs generate fundamental change in the normative architecture of war. For instance, the carnage that resulted from the clash of mass armies during the Napoleonic era motivated much of Hague law. Further, the sheer size of the resulting conflicts and the fact that they now often occurred where civilians were collocated led to greater suffering by non-combatants. Geneva law resulted.³⁰ So too with the nuclear RMA. In the very short period since nuclear weapons have been in existence, and despite only two uses of atomic bombs, the global community has responded with treaties,³¹ attempts to articulate customary law,³² and judicial opinions.³³ The causal relationship between RMAs and law is apparent.

In the U.S. view, an RMA is well under way. The United States sees fundamental change in three areas: information operations, weapons systems, and space.³⁴ This author would add a fourth arena of change,

30. "Geneva law" is a term used to denote that portion of the law of armed conflict addressing protected persons: civilians, prisoners of war, the sick or shipwrecked, and medical personnel. It is to be distinguished from "Hague law" which governs methods and means of combat, occupation, and neutrality. For a discussion of the international instruments which fall into each category, and of those which display elements of both, see FREDERIC DE MULINEN, *HANDBOOK ON THE LAW OF WAR FOR ARMED FORCES* 3-4 (1987).

31. See, e.g., Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, Aug. 5, 1963, 14 U.S.T. 1313, 480 U.N.T.S. 43, 2 I.L.M. 889; Treaty for the Prohibition of Nuclear Weapons in Latin America, Feb. 14, 1967, 634 U.N.T.S. 281, 6 I.L.M. 521; Treaty on the Non-Proliferation of Nuclear Weapons, *open for signature*, July 1, 1968, 21 U.S.T. 483, 729 U.N.T.S. 161, 7 I.L.M. 811; Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof, Feb. 11, 1971, 23 U.S.T. 701, 10 I.L.M. 146.

32. See, e.g., *Declaration on the Prohibition of the Use of Nuclear and Thermo-Nuclear Weapons*, G.A. Res. 1653, U.N. GAOR, Supp. No. 17, at 4, U.N. Doc. A/5100 (1961); *Resolution on the Non-Use of Force in International Relations and Permanent Prohibition of the Use of Nuclear Weapons*, G.A. Res. 2936, U.N. GAOR, Supp. No. 30, at 5, U.N. Doc. A/8730 (1972); *Resolution on the Non-Use of Nuclear Weapons and Prevention of Nuclear War*, G.A. Res. 35/152D, U.N. GAOR, Supp. No. 48, at 69, U.N. Doc. A/35/48 (1980).

33. See Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, July 8, 1996, 35 I.L.M. 809; see Michael N. Schmitt, *The International Court of Justice and the Use of Nuclear Weapons*, NAVAL WAR C. REV., Spring 1998, at 91.

34. JOINT CHIEFS OF STAFF, *supra* note 7, at 23-25. Some have cautioned about forgetting basic truisms of war in the haste to embrace new technologies as a panacea to clear the fog of war. Mackubin Owens of the Naval War College has noted that there is a:

[r]ecredence of a McNamara-like worship of technology in some parts of the Pentagon, a worship that ignores the principal lesson of military history: as long as war involves humans, no technology can completely eliminate friction, ambiguity and uncertainty, thereby ensuring that a military organization will function at 100 percent efficiency. . . . The question is, who is more relevant to war in the real world: Clausewitz, who observed that 'everything in war is simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war'; or those who reject him, explicitly or implicitly, assuming that technology will render friction in war obsolete?

one derivative of the other three—militarization of civilians and civilian activities. *Bellum Americanum* clearly envisions a leveraging of the advantages offered by this revolution.

*Information Systems.*³⁵ It would appear that Alvin and Heidi Toffler's "Third Wave" is upon us.³⁶ Most agree that the key to the RMA of the twenty-first century will be information.³⁷ Recognizing the importance of information in warfare hardly represents a strategic epiphany; however, in the next century these capabilities will themselves be a key source of national power.³⁸

But technology is only part of the equation. Any approach to war that ignores strategy and friction and tempts us to forget that war is waged against an adversary with an active will, is doomed to failure.

Mackubin T. Owens, *Planning for Future Conflict: Strategy vs. "Fads,"* STRATEGIC REV., Summer 1996, at 5–6.

35. See generally DOMINANT BATTLESPACE AWARENESS (Stuart Johnson & Martin Libicki eds., 1995).

36. See generally ALVIN TOFFLER & HEIDI TOFFLER, WAR AND ANTI-WAR (1993), ALVIN TOFFLER, THE THIRD WAVE (1980). The Tofflers posit three waves of warfare driven by the age in which they took place: agricultural, industrial, and information. Military objectives are in great part determined by the period during which they are pursued. For instance, in the agricultural era, land was an objective, whereas in the industrial period, industrial capacity was. The work of the Tofflers is now *de rigueur* in U.S. War Colleges, though not all are convinced of its validity. For a piece criticizing the work as neo-Marxist and charging that the Tofflers had to "rearrange certain chronologies so the events develop in proper sequence," see R.L. DiNardo & Daniel J. Hughes, *Some Cautionary Thoughts on Information Warfare*, AIRPOWER J., Winter 1995, at 69–70. For two fascinating discussions of the origin of war, see, for example, BARBARA EHRENREICH, BLOOD RITES (1997) and ROBERT L. O'CONNELL, RIDE OF THE SECOND HORSEMAN: THE BIRTH AND DEATH OF WAR (1995).

37. In anticipation of this reality, the U.S. Air Force, Army and Navy have all established information warfare centers, as has the Central Intelligence Agency, and doctrine on information warfare has recently been formally issued by the U.S. Joint Staff. See Mark Walsh, *U.S. Military Expands Information Warfare Defense*, DEF. NEWS, Apr. 28–May 4, 1997, at 25; Lohr, *supra* note 13, at D1; see, e.g., Chairman, Joint Chiefs of Staff Instruction (CJCSI), Joint Information Warfare Policy (1994) (series, some documents classified); JOINT CHIEFS OF STAFF, INFORMATION WARFARE DIVISION-J6K, INFORMATION WARFARE: LEGAL, REGULATORY, POLICY AND ORGANIZATIONAL CONSIDERATIONS FOR ASSURANCE, (1995).

38. This point is made by Joseph Nye and William Owens:

The core of these capabilities—dominant situational knowledge—is fungible and divisible. The United States can share all or part of its knowledge with whomever it chooses. Sharing would empower recipients to make better decisions in a less-than-benign world, and should they decide to fight, they could achieve the same kind of military dominance as the United States. . . .

As its capacity to provide this kind of information increases, America will increasingly be viewed as a coalition leader, not just because it happens to be the strongest but because it can provide the most important input for good decisions and effective action for other coalition members. Just as nuclear dominance was the key to coalition leadership in the old era, information dominance will be the key in the information age.

Many of the powerful information technologies are next generation improvements on current systems.³⁹ For example, by the early part of the twenty-first century, satellites will offer worldwide coverage any time of day and with astonishing spatial resolution. The future may even include sound sensors powerful enough to allow a satellite to detect a conversation on earth.⁴⁰ Advances in artificial intelligence will allow this data and that from other sensors to be fused, organized, and disseminated almost instantaneously.

Even more fantastic are new technologies. Consider micromachining. Scientists now believe that in the future they will be able to build robots disguised as insects that will have both optical and communications capabilities. Such systems could be used in areas where current systems are ineffective like jungles with thick canopies. Some scientists believe that the sensors may one day approach the size of dust mites⁴¹ and be seedable by unmanned aerial vehicles (UAV). More amazing still, micromachined sensors may be able to taste and smell, useful senses when seeking out chemical weapons or finding objects made with a particular substance, such as the metal of military vehicles or aircraft.⁴² Of course, whether new or improved, sensor technologies are no panacea, a fact well illustrated by the futile attempt to destroy mobile Scuds during the Gulf War.⁴³

The ultimate benefit of information technologies is that they allow the warfighter to "get inside" the opponent's OODA—observe, orient,

Joseph S. Nye, Jr. & William A. Owens, *America's Information Edge*, FOREIGN AFF., Mar./Apr. 1996, at 20, 27.

39. There are four categories of sensors: 1) far stand-off sensors such as satellites; 2) near stand-off sensors such as aircraft and unmanned aerial vehicles carrying various sensors (multispectral, passive microwave, electronic intelligence, etc.); 3) in-place sensors, such as acoustic, gravimetric, biochemical, and ground-based optical; and 4) weapons sensors, such as infrared, reflected radar, etc. See MARTIN C. LIBICKI, WHAT IS INFORMATION WARFARE? 22 (1995).

40. Resolution is expected to reach ten meters, improvable to two-to-three meters with signal-to-noise calculations. Periodic coverage in the submeter range will be made possible through multispectral, hyperspectral, and synthetic aperture radar (SAR) images. See Jeffrey E. Thieret et al., *Hit 'em Where it Hurts: Strategic Attack in 2025*, in 3.1 AIR UNIVERSITY, 2025, WHITE PAPERS 173, 187 (1996).

41. See Pat Cooper, *U.S. Develops Army of Tiny Robots*, DEFENSE NEWS, Nov. 11-17, 1996, at 4.

42. Smelling sensors would be designed to detect particular chemical molecules, which would cause an organic change in the sensor detectable by irradiated light or X-ray energy. Tasting sensors would attach themselves to particular substances. They too could be irradiated. In both cases, overhead sensors could be used to collect the data. See Thieret, *supra* note 40, at 187-88.

43. For an excellent review of future sensors and sensor operations, see *Spacecast 2020: Leveraging The Infosphere: Surveillance and Reconnaissance in 2020*, AIRPOWER J., Summer 1995, at 8.

decide, act—loop and shape the battlespace before the adversary can. This represents a decisive advantage. Consider the individual soldier. In the not too distant future, he or she will be equipped with the Land Warrior Modular Fighting System. Its components will include a helmet-mounted computerized display tied to an improved weapon with a thermal sensor capable of night vision and an image enhancer for accuracy. The system will be capable of seeing around corners and over barriers and all images can be digitized for transmission up the chain of command. Soldiers of tomorrow will be able to view a real time "picture-map" of the area they are in through eye-sized video displays. Not unexpectedly, the soldiers will also be equipped with computers linked to others in their unit. The net result will inevitably be to make the soldier more lethal and able to operate more autonomously in the heat of battle.⁴⁴

Similar enhancements will pervade other arenas of combat. Combat aircraft will benefit from information gathered by sensors on sister aircraft, as well as space and ground based sensors and uninhabited reconnaissance aerial vehicles (URAV).⁴⁵ This will improve targeting precision, enhance survivability, and reduce the possibility of fratricide. Ship-board information improvements may include the Force Threat Evaluation and Weapon Assignment system being tested by Johns Hopkins University. The system will fuse data from all of a naval battlegroup's radars to create a three-dimensional display containing graphics, rather than symbology, of threats; it will then recommend which should be engaged and when.⁴⁶

At the operational (theater) and strategic levels of warfare, decision-making will be enhanced by the new information C4ISR technologies.⁴⁷ Senior commanders will be able to literally watch the battle unfold. The transparency of one's opponents and the reliability and ease of communication with subordinate units will produce an unprecedented operations tempo. In particular, access to on-demand real-time informa-

44. See Barbara A. Jezior, *The Revolutionized Warfighter Circa 2025* (1997) (unpublished manuscript, on file at *Naval War College Library*); Art Pine, *Revolutionary High-tech Military Plan Isn't ready for the World's Battlefields*, PROVIDENCE J., Jan. 5, 1997, at D5. See also *Infantry System Turns Soldier into High-Tech Urban Warrior*, NAT'L DEF., Apr. 1997, at 24.

45. See, e.g., 11 U.S.A.F. SCIENTIFIC ADVISORY BOARD, *NEW WORLD VISTAS: AIR AND SPACE POWER FOR THE TWENTY-FIRST CENTURY* (1995).

46. Douglas Waller, *Onward Cyber Soldiers*, TIME, Aug. 21, 1995, at 38, 41.

47. U.S. approaches to these technologies, such as command, control, communications, computers, intelligence, surveillance, and reconnaissance, are outlined in JOINT CHIEFS OF STAFF, *C4I FOR THE WARRIOR: GLOBAL COMMAND AND CONTROL SYSTEM—FROM CONCEPT TO REALITY* (1994).

tion will allow real-time planning, rather than the current practice of executing plans developed in advance of the engagement.⁴⁸

Lest information be considered a panacea, one must recognize the technology that proponents of the new era herald may effectively prove to generate little more than additional Clausewitzian fog of war. For instance, microminiturization will enhance stealth (now labeled low observable/masking technologies—LOMT), as will active radio frequency and next generation passive infrared capabilities.⁴⁹ Similarly, by the removal of the pilot and cockpit—producing “uninhabited combat aircraft vehicles” (UCAC)—aircraft can be designed to reduce radar cross-section by a factor of two (or a factor of four for area radars).⁵⁰ A possible obstacle to transparency may even be data overload—so much information that human decision-makers will become over-tasked and over-stressed, and thereby make bad decisions.⁵¹

Finally, the availability of the systems may breed unhealthy dependencies—and vulnerabilities.⁵² Today the U.S. military alone has over 2.1 million computers and 10,000 local area networks.⁵³ Given their importance, information systems will be key targets. Indeed, during the Gulf War, they represented the lead target set for Coalition attacks.⁵⁴ To the

48. See JOINT CHIEFS OF STAFF, *supra* note 19, at 15. What these developments will do to the fundamental nature of military decision-making has yet to be seen. Greater technology could lead to greater restraints on the “shooter,” a phenomenon exemplified in the past by excessive radar based ground control over East-Bloc pilots conducting aerial intercepts. The danger is that the closer the senior commander is to being on the battlefield, the more he or she may want to control it. On the other hand, the individual shooter will have far more information available to make informed decisions than has been the case thus far. For example, today fighters patrolling no-fly zones depend on aircraft, such as the AWACS, to provide them with a verbal picture of their combat environment. In the Twenty-First century, that information will be immediately available in the cockpit. Such individual capabilities could have the effect of allowing greater autonomy to those who directly apply force. This danger is noted in JOINT CHIEFS OF STAFF, *supra* note 7, at 27. “Access to extensive information about the tactical situation may tempt strategic and operational commanders to take control of tactical actions.” *Id.*

49. U.S.A.F. SCIENTIFIC ADVISORY BOARD, *supra* note 45, at 60; JOINT CHIEFS OF STAFF, *supra* note 7, at 25. Even today a stealth Comanche helicopter and a T-3 unmanned, reconnaissance aerial vehicle (URAV) are under development. See *To Dissolve, to Disappear*, ECONOMIST, June 10, 1995, at 11.

50. U.S.A.F. SCIENTIFIC ADVISORY BOARD, *supra* note 45, at 8.

51. See DiNardo & Hughes, *supra* note 36, at 75.

52. See, e.g., James Blackwell, *Prospects and Risks of Technological Dependency*, in U.S. ARMY WAR COLLEGE, STRATEGIC CONCEPTS IN NATIONAL MILITARY STRATEGY SERIES 29 (1992); Neil Munro, *The Pentagon's New Nightmare: An Electronic Pearl Harbor*, WASH. POST, July 16, 1995, at C3.

53. See Thomas E. Ricks, *Information-Warfare Defense Is Urged*, WALL ST. J., Jan. 6, 1997, at B2.

54. The Operation Desert Storm Air Campaign Plan is described in U.S. DEP'T OF DEFENSE, CONDUCT OF THE PERSIAN GULF WAR 73-75, 95-101 (1992). The approach to current targeting philosophy has been set forth by Colonel John Warden as “Five Strategic

extent forces become dependent on information resources, will they be able to operate in the event of disruption?⁵⁵ Will information enable the forces of tomorrow . . . or cripple them?

Weapons Systems. The second change underlying the RMA is a quantum leap in weapons systems capabilities, an exaggerated continuation of a trend that has been underway for some time. For instance, through 1943 the U.S. Eighth Air Force attacked only fifty strategic targets in Germany. By contrast, in 1991 Coalition air assets struck 150 strategic targets on the first day of the war alone.⁵⁶ Advances on this scale will continue into the twenty-first century, and can be grouped into two categories: weapons systems intelligence and weapons effect.

Today's precision guided munitions (PGMs) are colloquially known as "smart" weapons. In the next century, weapons systems will be much more—they will be "brilliant."⁵⁷ The key to this improvement is the concept of a weapon *system*. Twenty-first century weaponry will draw information from a wide variety of sources (a system), not simply from on-board sensors or the launcher, to identify a target, strike it, and report results. To illustrate, consider an attack on a suspected biological weapons facility. Because of the risk that the attack could release biologicals, precision is essential. One Air Force study describes the type of information that would be gathered prior to such an attack:

In the year 2025, sensor collection provides enough data for a virtual 3-D model of the [target] to include its composition, internal structure, baseline characteristics, and tendencies. . . . [s]ensors determine the building's exact dimensions and floor plan. They then highlight soft spots. Sensors distinguish be-

Rings." The concentric rings are political leadership, economic systems, supporting infrastructure, population, and military forces. Attacking leadership targets (command and control, communications, etc.) greatly diminishes the difficulty of attacking military forces. Leadership is seen as the primary center of gravity. *See generally* John A. Warden, III, *The Enemy as a System*, AIRPOWER J., Spring 1995, at 41, 44.

55. For an argument that the "Network Force" must train to the possibility of disruptions in the information system, see, Mark Tempestilli, *The Network Force*, PROCEEDINGS, June 1996, at 42, 46.

56. *See* Jeffrey McKittrick et al., *The Revolution in Military Affairs*, in BATTLEFIELD OF THE FUTURE 65, 78 (Barry R. Schneider & Lawrence E. Grinter eds., 1995).

57. The most publicly visible change has been in weapons accuracy, a result of misleading Gulf War news coverage of smart bomb (precision guided munitions—PGM) attacks. In fact, they were prematurely acclaimed. Only roughly eight percent of the weapons dropped during the war were precision guided. A General Accounting Office study of attacks on twenty major targets found that at least two laser guided weapons were used against each. At least six were dropped on twenty percent of the targets and fifteen percent of the targets were attacked by at least eight. *See* Tony Capaccio, *GAO Questions U.S. Air Power Impact on Gulf War*, DEF. WEEK, June 30, 1997, at 1. *See also*, Barton Gellman, *U.S. Bombs Missed 70% of the Time: "Smart" Munitions far More Accurate*, WASH. POST, Mar. 16, 1991, at A1.

tween rooms containing biological agents, test equipment, sleeping quarters, and even the snack bar. Target acquisition sensors also construct a baseline, or living archive, of data concerning routine activity and environmental conditions. Examples include the average number of people who enter and exit each day, the number of vehicles in the parking lot, and the level of noise generated by the facility.⁵⁸

Using this information, mission planners can determine when the facility appears to be generating biologicals, where they are stored, and when it can be struck without causing high numbers of civilian casualties.⁵⁹ To destroy the biologicals before they can be released into the atmosphere, an incendiary will be used that will actually count walls penetrated to ensure it explodes in the proper room.⁶⁰

Systems not only will be better capable of determining where to strike, they will be better able to strike the exact point selected. With global positioning, inertial navigation, and other guidance systems, in the not too distant future accuracy will be measured in centimeters, not meters as it is today.⁶¹ Weapons systems will also be much smaller due to miniaturized munitions technology (MMT), thereby allowing more weapons to be carried.⁶² In the future, a single UCAV carrying multiple brilliant weapons for release far from the target may have the same effect as a flight of manned aircraft that today have to fight their way to the release point.⁶³

The second fundamental change in weapons will be in their effect on targets. In this century most weapons have been designed to destroy through penetration and explosive force. In the twenty-first century the continuum of effect will be multi-dimensional. Explosives will

58. Thieret, *supra* note 40, at 185–86.

59. Technologies that will enable such analysis include hyperspectral and magnetic resonance imaging. In the former, the electromagnetic spectrum is broken into its constituent bands for hundreds of individual analyses. The data is then fused for a single readout. This capability frustrates the possibility of a target avoiding detection in one spectrum (e.g., visual or infrared). In magnetic resonance imaging, UAVs may spread particles over a building that are sucked into it through the ventilation system. Air or space-borne sensors would then image the particles to determine the building's internal structure. *See id.* at 187.

60. *See* William Matthews, *New Bombs Penetrate, Incinerate*, AIR FORCE TIMES, Feb. 16, 1998, at 6.

61. U.S.A.F. SCIENTIFIC ADVISORY BOARD, *supra* note 45, at 38.

62. *See* Thieret, *supra* note 40, at 189. For instance, today hardened targets are best attacked with at least a 2000 pound guided bomb unit. Programs are underway to reduce that to 250 pounds, smaller than the average conventional bomb in today's arsenal.

63. From a ground perspective, consider the Army's BAT, the brilliant antiarmour submunition that will be fired by the Army Tactical Missile System. The munitions will use acoustic and infrared sensors to identify a formation of vehicles, single one out for attack, and destroy it. *See* Owens, *supra* note 15, at 37.

still predominate, but be much more refined. For example, microtechnology will make possible microexplosives that can destroy targets with mere grams of explosive.⁶⁴ At the other end of the spectrum, non-lethal (also known as "less lethal" to indicate they still have the capacity to kill) weapons will increasingly be employed to limit collateral damage and incidental injury during armed conflict and provide commanders greater tactical flexibility during peace operations.⁶⁵

The variety of non-lethals being considered is impressive. Acoustic weapons can produce sound frequencies that disorient, cause pain, and bring on nausea. Microwave weapons will be able to induce seizures or simply bring on discomfort by raising the target's body temperature.⁶⁶ There is even some discussion of the development of sleep-inducing agents.⁶⁷

Non-lethals can also incapacitate weapons and equipment. Electromagnetic pulse weapons generate radio frequency wavelengths that damage electrical components, but in most cases cause no direct harm to humans.⁶⁸ Supercaustics and liquid metal embrittlement agents will attack surfaces, the former by corroding them (bridges, optical system lenses, roads, tires, etc.), the latter by making them brittle and thereby subject to fracture. Both could be delivered by shell or sprayed from an aircraft.⁶⁹ Microbes that eat rubber, silicon, electronics, and possibly even oil, have also been mentioned as possibilities.⁷⁰ Seemingly more benign are "stick-ums" and "slick-ums". The first uses polymers that form a sticky foam capable of immobilizing humans without killing them. A variant is a "super glue" that can be dispensed from the air to foul weapons and equipment components. Slick-ums, by contrast, coat surfaces with an anti-traction chemical that make them difficult to walk or drive upon.⁷¹

64. U.S.A.F. SCIENTIFIC ADVISORY BOARD, *supra* note 45, at 9-10.

65. Department of Defense policy on the use of non-lethal weapons is set forth at DOD DIRECTIVE 3000.3, POLICY FOR NON-LETHAL WEAPONS (July 9, 1996). See also James W. Cook, III et al., *Nonlethal Weapons: Technologies, Legalities, and Potential Policies*, AIRPOWER J., Special Edition 1995, at 77, 78; see, e.g., James C. Duncan, *A Primer on the Employment of Non-Lethal Weapons*, NAVAL L.REV. (forthcoming 1998).

66. See Douglas Pasternak, *Wonder Weapons*, U.S. NEWS & WORLD REP., July 7, 1997, at 38, 45. Both acoustic and microwave weapons could be used for perimeter defense or crowd control, and both, used to the extreme, are potentially lethal.

67. See GREG R. SCHNEIDER, NONLETHAL WEAPONS: CONSIDERATIONS FOR DECISION MAKERS 27 (1997).

68. See *id.* at 14.

69. See *id.* at 20-22.

70. See Jezoir, *supra* note 44, at 16; SCHNEIDER, *supra* note 67, at 27.

71. See SCHNEIDER, *supra* note 67, at 9-10. Especially useful in urban warfare because of dependency on roads, slick-ums could also be used to disrupt resupply, provide blockage in maneuver warfare, or temporarily disable runways.

Finally, given the reliance of future war on information systems, it is inevitable that weapons will be developed to attack them. Such traditional tactics as the use of jammers or missiles that home in on electrical signatures will continue to be refined. More revolutionary will be attacks on computer networks, sometimes called "hacker war." This form of warfare includes sending computer viruses into an adversary's computer system to destroy or alter data and programs. For example, logic bombs can be introduced that sit idle in a computer system, awaiting activation at the occurrence of a particular event or a set time. To illustrate, an air defense system logic bomb might be set to "explode" only when the missile launch sequence is initiated. A Trojan horse, by contrast, is accepted into a system before it attacks. Other techniques for disrupting an information system may be as simple as flooding it with false information, or using sniffer programs to collect access codes that allow entry into a target system.⁷² In some cases, such attacks may occur without revealing the source, or even the fact of, the attack.

Space. The third defining aspect of the current RMA is the use of space. In much the same way that the airplane revolutionized twentieth century warfare by opening a third medium from, through and in which to fight, so too will access to space revolutionize warfare in the twenty-first. The Gulf War dramatically illustrated the value of space operations.⁷³ By the twenty-first century, they will transform how war is fought, the lethality that can be brought to bear against military objectives, the extent of collateral damage and incidental injury to civilians and civilian objects, and even where conflict will occur. It is the ultimate high-ground, that objective that militaries have sought since the first combat. The fact that it is a high-ground of infinite depth renders it more valuable still.⁷⁴

Given its value, control of space is an alluring prospect. The United States Space Command Vision includes space control—the ability to defend one's own space assets, whether from space or ground based threats, while denying the use of space to an opponent—in its operational concepts.⁷⁵ The reasoning is clear:

[S]o important are space systems to military operations that it is unrealistic to imagine that they will never become military

72. On the threat posed by information warfare, see OFFICE OF THE UNDER SECRETARY OF DEFENSE FOR ACQUISITION & TECHNOLOGY, REPORT OF THE DEFENSE SCIENCE BOARD TASK FORCE ON INFORMATION WARFARE-DEFENSE (IW-D), Nov. 1996, App. A (Threat Assessment).

73. Space systems used during the war are described in U.S. DEP'T OF DEFENSE, *supra* note 54, at 801–09.

74. On this point, see Gray, *supra* note 28, at 306.

75. See U.S. SPACE COMMAND, *supra* note 7.

targets. Just as land dominance, sea control, and air superiority have become critical elements of current military strategy, space superiority is emerging as an essential element of battlefield success and future warfare An increased dependence on space capabilities may lead to increased vulnerabilities. As space systems become lucrative military targets, there will be a critical need to control the medium to ensure U.S. dominance on future battlefields. Robust capabilities to ensure space superiority must be developed—just as they have been for land, sea, and air.⁷⁶

Should space *control* operations become a reality, the next logical step is force *projection* from space. Not surprisingly, the USAF Scientific Advisory Board is already discussing such possibilities as space based lasers or the use of space based mirrors to direct ground based lasers.⁷⁷ Space is clearly the next arena of warfare in the *Bellum Americanum*.

Militarization of Civilians and Civilian Activities. The final factor revolutionizing warfare is a growing military dependency on civilians, and on civilian objects and activities. This continues a trend that began with Napoleonic style warfare and the advent of the industrial revolution. By the time of the Second World War, civilians and civilian objects were being attacked directly, reflecting their criticality to military forces. In the future, the relationship with civilians and civilian activities will be closer still. As draw-downs in military forces occur in the developed world, many of the activities traditionally performed by military personnel are being assumed by civilian contractors. For example, the U.S. military is contracting out aircraft maintenance, facilities maintenance, base security, transportation, communications, and the feeding and housing of troops. Increasingly, it is approaching a point where "member of the armed forces" will be synonymous with "trigger-puller."

Moreover, as emphasis shifts to information operations, equipment becomes less identifiable as military in character. The push to purchase

76. *Id.* The Air Force's Scientific Advisory Board concurs: "Capabilities to defend our own space based resources and to disrupt, degrade, deny or destroy that of an enemy will be needed sooner or later in the Twenty-First century." U.S.A.F. SCIENTIFIC ADVISORY BOARD, *supra* note 45, at 61.

77. *See Id.*, at 47. The Board has further noted that "[t]he future Force will, eventually, contain space, ground, and airborne weapons that can project photon energy, kinetic energy, and information against space and ground assets. Many space and information weapons will destroy. Others will confuse the enemy and weave the 'bodyguard of lies' that will protect our forces." *Id.* at 11 (*citing* Winston Churchill, said to Josef Stalin; Teheran; November, 1943).

“off-the-shelf” products in order to lower acquisition costs means that ascertaining character can only be reliably performed once an item is put into use. Indeed, the bulk of information operations hardware and software consists of commercial products adapted to military use. As former Vice Chairman of the Joint Chiefs of Staff Admiral William Owens has noted,

Today, the center of technological acceleration in each of these technologies [battlespace awareness, C⁴I, and precision use of force] lies generally in the commercial, non-defense sectors. Our ability to accelerate the fielding of systems, on which we will base our future military superiority, thus depends on our capacity to tap into developments taking place for the most part outside the existing Department of Defense laboratory and development infrastructure.⁷⁸

Compounding the difficulty of distinguishing civilian from military is the fact that to keep costs low, many facilities—ranging from office buildings to airports—are shared by military and civilian operations. Such sharing is particularly likely with space based assets, because of the cost of putting them in orbit. Thus, Space Command is actively seeking partnerships with commercial entities and consortiums, sometimes multinational in character, as well as civilian agencies (e.g., NASA) involved in space operations. It also seeks partnerships with foreign and international space operators such as the European Space Agency.⁷⁹

THE LEGAL IMPLICATIONS OF BELLUM AMERICANUM

As noted at the outset, the context in which law operates determines its content. Changing contexts stress existing normative architectures, causing new law to emerge or outdated and irrelevant law to fade away. The remainder of this article will shift from the predictive to the speculative by suggesting certain stressors found in *Bellum Americanum* and

78. Owens, *supra* note 15, at 38.

79. Global Partnership is one of Space command's four operational concepts. See generally U.S. SPACE COMMAND, *supra* note 7. This adds another dimension to the complexity-nationality. For example, consider neutrality. What if a belligerent was receiving dual data (e.g., weather) from a satellite owned by a neutral or a multinational corporation with neutral partners? Could it be attacked? Can the U.S. use data received from a satellite that it shares with a neutral? Such complexity will only be exacerbated in the next century as space commercialization explodes.

their possible effects on the current law of armed conflict.⁸⁰ The catalogue is neither exhaustive, nor definitive, but merely the reflections of one writer on the possible implications of one alternative future. Moreover, the analysis is not an effort to suggest *lex ferenda*. The goal is to posit probable normative vectors rather than offer aspirational visions of the twenty-first century.

Jus ad Bellum. *Bellum Americanum* will stress the current *jus ad bellum* in a number of significant ways. Most fundamentally, the concept of war and peace—of the difference between an act that is merely unfriendly and one that is wrongful as a threat or use of force under Article 2(4) of the United Nations Charter⁸¹—will be strained. In particular, because information operations “attack” an adversary without actually employing force in the kinetic sense, they will raise serious questions about what constitutes “force.”⁸² Should the term include state-sponsored or conducted hacker attacks on a country’s banks, communications networks, or stock exchange? Does it make a difference if the operations are conducted to “prepare the battlefield” in anticipation of an actual conflict by, for instance, destroying military deployment plans and reserve force records, corrupting intelligence systems, or sending satellites off-course? Similar stressors exist vis-à-vis the Article 39 threats to the peace, breaches of peace, or acts of aggression that empower the Security Council to authorize Chapter VII responses.⁸³ Moreover, the information era will challenge

80. For superb summaries of the current law of armed conflict, see, for example, L. C. GREEN, *THE CONTEMPORARY LAW OF ARMED CONFLICT* (1993), and *THE HANDBOOK OF HUMANITARIAN LAW IN ARMED CONFLICTS* (Dieter Fleck ed., 1995) [hereinafter Fleck]. The latter work reproduces the *Bundeswehr* or German Law of War Manual, Joint Services Regulations (ZdV) 15/2, (Aug. 1992), and provides extended commentary thereon by international law experts.

81. U.N. CHARTER art. 2, para. 4: “All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.” *Id.*

82. It would appear that the drafters of the Charter did not intend the term “force” to apply beyond armed force. See Albrecht Randelzhofer, *Article 2(4)*, in *THE CHARTER OF THE UNITED NATIONS: A COMMENTARY* 106, 112 (Bruno Simma ed., 1994).

83. Under Article 39 of Chapter VII, the Security Council determines whether a “threat to the peace, breach of the peace, or act of aggression” exists. When the Council finds one does, it may “call upon the parties concerned to comply with such provisional measures as it deems necessary or desirable.” U.N. CHARTER art. 40. It may also directly impose “measures not involving the use of armed force,” such as interrupting aerial “means of communication.” *Id.*, art. 41. When the Security Council determines that non-forceful measures would be or have proved inadequate, it may authorize the United Nations, regional organizations, or member States to use force under Article 42 to restore or maintain peace. Force includes “such action by air, sea, or land forces as may be necessary to maintain or restore international peace and security . . . [including] . . . demonstrations, blockade, and other operations by air, sea, or land forces of Members of the United Nations.” *Id.*, art. 42. For a discussion of

the concept of self-defense under Article 51 and under the inherent right to self-defense found in customary international law. Under what circumstances might a state be justified in responding forcefully to an information attack? Might such an attack constitute an "armed attack" under Article 51?⁸⁴ When may a state use information operations in anticipation of an armed attack?⁸⁵

Arguably, such stressors might move the *jus ad bellum* in the direction of a consequences-, not an act-based regime. In the current normative scheme, the consequences of an act are often less important than its nature. For instance, a devastating economic embargo is not a "use of force" nor an "armed attack" justifying forcible self-defense,

the terms "threat, breach, and aggression," see Jochen Frowein, *Article 39*, in Simma, *supra* note 82, at 605, 608–12.

84.

Nothing in the present Charter shall impair the inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations, until the Security Council has taken the measures necessary to maintain international peace and security. Measures taken by members in the exercise of this right of self-defense shall be immediately reported to the Security Council and shall not in any way affect the authority and responsibility of the Security Council under the present Charter to take at any time such action as it deems necessary in order to maintain or restore international peace and security.

U.N. CHARTER art. 51.

For a discussion of "armed attack," see Albrecht Randelzhofer, *Article 51*, in Simma, *supra* note 82, at 661, 668–74. Numerous international agreements and pronouncements have reaffirmed this right of self-defense since ratification of the UN Charter. *See, e.g.*, Inter-American Treaty of Reciprocal Assistance, Sept. 2, 1947, art. 3, T.I.A.S. No. 1838, 21 U.N.T.S. 77 [hereinafter Rio Treaty]; Declaration on Principles of International Law Concerning Friendly Relations and Cooperation Among States in Accordance with the Charter of the United Nations, G.A. Res. 2625 (XXV), princ. 1, U.N. Doc. A/8028 (1971), 9 I.L.M. 1292 (1970); North Atlantic Treaty, Apr. 4, 1949, art. 5, 63 Stat. 2241, 34 U.N.T.S. 243; Treaty of Friendship, Cooperation and Mutual Assistance, May 14, 1955, art. 4, 219 U.N.T.S. 3 [hereinafter Warsaw Pact Treaty].

85. Anticipatory self-defense is self-defense which occurs immediately prior to the attack. The most widely accepted standard is that articulated by U.S. Secretary of State Daniel Webster with regard to the *Caroline* incident. The *Caroline* incident involved a Canadian insurrection in 1837. After being defeated, the insurgents retreated into the United States where they recruited and planned further operations. The *Caroline* was being used by the rebels. British troops crossed the border and destroyed the vessel by setting her afire and sending her over Niagara Falls. Britain justified the action on the grounds that the United States was not enforcing its laws along the frontier and that the action was a legitimate exercise of self-defense. Webster replied that self-defense was to "be confined to cases in which the necessity of that self-defense is instant, overwhelming, and leaving no choice of means, and no moment for deliberation." *Letter from Daniel Webster to Lord Ashburton on Aug. 6, 1842*, reprinted in 2 JOHN BASSETT MOORE, A DIGEST OF INTERNATIONAL LAW § 217 (1906). Professor Yoram Dinstein adopts the terminology "interceptive" self-defense. It occurs after the other side has "committed itself to an armed attack in an ostensibly irrevocable way." He argues that interceptive self-defense is consistent with Article 51. *See* YORAM DINSTEIN, WAR, AGGRESSION, AND SELF DEFENSE 190 (2d ed. 1994).

even though the embargo may result in enormous suffering.⁸⁶ On the other hand, a relatively minor, armed incursion across a border is both a use of force and an armed attack.⁸⁷ This contrary result derives from the law's use of "acts" as cognitive short-hand for what really matters—consequences. Acts are more easily expressed (to "use force" versus to cause a certain quantum and quality of harm) and more easily discerned than an effects-based standard, on the harm suffered. This cognitive short-hand does not work well in the age of information operations because information attacks, albeit potentially disastrous, may be physically imperceptible. Thus, as the nature of an hostile act becomes less determinative of its consequences, current notions of "lawful" coercive behavior by states, and the appropriate responses thereto, are likely to evolve accordingly.

Even beyond information warfare, the reality of military operations in the next century will stress existing understandings of the line between a premature use of "defensive" force and valid self-defense. In tomorrow's high-tech battle the first shot may be the last. As weapons become more lethal, the incentive to strike first grows⁸⁸ and the threshold for preemption in self-defense on the basis of apparent hostile intent drops precipitously.⁸⁹

86. On economic sanctions, see Paul Szasz, *The Law of Economic Sanctions*, in *THE LAW OF ARMED CONFLICT: INTO THE NEXT MILLENNIUM* 455 (Michael N. Schmitt & Leslie C. Green eds., 1998) [hereinafter Schmitt & Green].

87.

There appears now to be general agreement on the nature of the acts which can be treated as constituting armed attacks. In particular, it may be considered to be agreed that an armed attack must be understood as including not merely action by regular armed forces across an international border, but also "the sending by or on behalf of a State of armed bands, groups, irregulars, or mercenaries, which carry out acts of armed force against another State of such gravity as it amount to" (*inter alia*) an actual armed attack conducted by regular forces, "or its substantial involvement therein."

Military and Paramilitary Activities (Nicar. v. U.S.), 1986 I.C.J. 4, 103 (June 27).

88. On this point, see generally, Donald C.F. Daniel, *The Evolution of Naval Power to the Year 2010*, *NAVAL WAR C. REV.*, Summer 1995, at 62.

89. In order to act in self-defense, U.S. forces must face either a hostile act or a demonstration of hostile intent by an opponent. Hostile intent is defined as:

[T]he threat of imminent use of force by a foreign force or terrorist unit, or organization against the United States and US national interests, US forces, and in certain circumstances, US citizens, their property, US commercial assets, or other designated non-US forces, foreign nationals and their property. When hostile intent is present, the right exists to use proportional force, including armed force, in self-defense by all necessary means available to deter or neutralize the potential attacker or, if necessary, to destroy the threat. A determination that hostile intent exists and requires the use of proportional force in self-defense must be based on convincing evidence that an attack is imminent.

Bellum Americanum may also call into question *jus in bellum* participatory notions. Since the Peace of Westphalia in 1648 and the rise of the nation-state, war has been the province and, until the turn of this century, the prerogative of states. When non-state actors have participated in organized violence, the normative paradigm has been that of international and domestic criminal law, not the law of armed conflict. Even the involvement of international organizations is a relatively new phenomenon.

Yet if the U.S. vision is accurate, in the next century military forces will increasingly face non-state actors, ranging from terrorists to drug cartels. As that occurs, there will be growing pressure to articulate neoteric legal justifications for forceful responses. Consider Operation El Dorado Canyon, the 1986 strike on targets in Libya in response to Libyan supported terrorist attacks against Americans in Europe, including the La Belle Disco bombing in Berlin. Though justified in terms of self-defense, it is difficult to articulate the instant and overwhelming⁹⁰ need to resort to force once those bombings had taken place.⁹¹ Or consider a hypothetical well-guarded drug laboratory in a remote region. Under current international law there is no legal basis for bombing the facility if more traditional law enforcement techniques fail. Or even consider a terrorist group that acquires biological weapons but is sheltered by a rogue state. Again, under present law there are no grounds for attacking the group until the point when it is actually employing (or immediately about to employ) the weapons. If twenty-first century national security threats are to come from non-state actors, then the law governing the resort to force is bound to evolve in a way that permits an

CHAIRMAN, JOINT CHIEFS OF STAFF INSTRUCTION (CJCSI) 3121.02, STANDING RULES OF ENGAGEMENT FOR UNITED STATES FORCES, at GL-9 (1994). This is a classified document, but large portions, including this quote, are unclassified.

90. "Instant and overwhelming" is the *Caroline* standard. MOORE, *supra* note 85, at 412.

91. Actually, the Administration's statements seemed to include justifications based on both anticipatory self-defense and retaliation. For example, in the President's national address on the subject, he initially appeared to use reprisal as the basis for the attack: "Several weeks ago in New Orleans, I warned Colonel Qadhafi we would hold his regime accountable for any new terrorist attacks launched against American citizens. More recently, I made it clear we would respond as soon as we determined conclusively who was responsible. . . ." He then offered a classic self-defense justification: "Self-defense is not only our right, it is our duty. It is the purpose behind the mission undertaken tonight—a mission fully consistent with Article 51 of the UN Charter." President Ronald Reagan, Address to the Nation (Apr. 14, 1986), in DEP'T ST. BULL., June 1986, at 1-2. See also, White House Statement, in DEP'T ST. BULL., June 1986, at 1. Much attention has been paid to the fact that the U.S. believed Libya was planning attacks on up to thirty U.S. diplomatic facilities worldwide. See Joint News Conference by Secretary Schultz and Secretary Weinberger, (Apr. 14, 1986), in DEP'T ST. BULL., June 1986, at 3.

effective defense against them; this will necessitate either blurring the state—non-state actor distinction or sharpening it by a new body of law governing actions against non-state actors.

The Jus in Bello Generally. In terms of the *jus in bello*, the differentiation between international and non-international conflict will continue to be strained.⁹² *Bellum Americanum* sees more Bosnias on the horizon as ethnic and religious tensions remain divisive. The applicative difficulties posed by the conceptually “neat” distinction between international and non-international armed conflicts—Additional Protocol I vs. II and common Articles 3 of the Geneva Conventions vs. the Conventions in their entirety⁹³—have been well illustrated in the seemingly

92. The distinction between international and non-international armed conflict is not always clear. Protocol II Additional to the Geneva Conventions, an agreement designed to govern the latter, describes non-international armed conflict as “armed conflicts . . . which take place in the territory of a (party to the Convention) between its armed forces and dissident armed forces or other organized armed groups which, under responsible command, exercise such control over a part of its territory as to enable them to carry out sustained and concerted military operations. . . .” Protocol Additional to the Geneva Conventions of August 12, 1949, and Relating to the Protection of Victims of Non-international Armed Conflicts, June 8, 1977, art. 1, para. 1, U.N. Doc. A/32/144, Annex II (1977), 16 I.L.M. 1442 (1977), [hereinafter Protocol II]. International armed conflict is that which arises between states (or other subjects of international law). See, e.g., Article 2 to the Geneva Conventions: “[T]he present Convention shall apply to all cases of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties, even if the state of war is not recognized by one of them.” Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, Aug. 12, 1949, art. 2, 6 U.S.T. 3114, 75 U.N.T.S. 31 [hereinafter Geneva Convention I]; Geneva Convention for the Amelioration of the Condition of the Wounded, Sick and Shipwrecked Members of the Armed Forces at Sea, Aug. 12, 1949, art. 2, 6 U.S.T. 3217, 75 U.N.T.S. 85 [hereinafter Geneva Convention II]; Geneva Convention Relative to the Treatment of Prisoners of War, Aug. 12, 1949, art. 2, 6 U.S.T. 3316, 75 U.N.T.S. 135 [hereinafter Geneva Convention III]; and Geneva Convention Relative to the Protection of Civilian Persons in Time of War, Aug. 12, 1949, art. 2, 6 U.S.T. 3516, 75 U.N.T.S. 287 [hereinafter Geneva Convention IV]. Additional Protocol I, which supplements the Geneva Conventions with regard to international armed conflict, simply refers back to Common Article 2. Protocol Additional to the Geneva Conventions of August 12, 1949, and Relating to the Protection of Victims of International Armed Conflicts, June 8, 1977, art. 1, para. 3, U.N. Doc. A/32/144, Annex I, 16 I.L.M. 1391 (1977) [hereinafter Protocol I]. In a somewhat controversial provision, Protocol I includes as *international* armed conflicts “armed conflicts in which peoples are fighting against colonial domination and alien occupation and against racist regimes in the exercise of their right of self-determination.” *Id.* art. 1, para. 4. Note that “internal disturbances and tensions, such as riots, isolated and sporadic acts of violence and other acts of a similar nature” are not armed conflict, either international or non-international. Protocol II, *supra*, art. 1 para. 2.

93. Article 3 of each of the Geneva Conventions is identical and provides basic protections for “[p]ersons taking no active part in the hostilities, including members of the armed forces who have laid down their arms and those placed *hors de combat* by sickness, wounds, detention, or any other cause.” Geneva Convention I, *supra* note 92, art. 3; Geneva Convention II *supra* note 92, art. 3. Geneva Convention III, *supra* note 92, art. 3. Geneva Convention IV, *supra* note 92, art. 3. The remainder of those conventions address international armed conflicts.

contradictory conclusions regarding conflict status issued by the International Criminal Tribunal for the Former Yugoslavia.⁹⁴ The difficulty of fitting future conflicts into what William Fenrick has labeled the "two box" approach will create pressures to dissolve the distinction.⁹⁵ Resistance to this pressure will come, of course, from those states who jealously guard their autonomy. Thus, the natural tension between humanitarian concerns and sovereignty, a tension evidenced in such issues as humanitarian intervention, will exacerbate as attempts are made to determine which law applies to which twenty-first century conflicts.

Discrimination. Discrimination is a general principle of the law of armed conflict that requires an attacker to distinguish between civilians and civilian objects on the one hand and military objectives (combatants or objects) on the other, and to use weapons capable of discrimination between them.⁹⁶ Paradoxically, despite vast improvement in weapons systems accuracy and battlespace transparency, complying with the principle may become increasingly difficult.⁹⁷ The problem is that the lines between lawful targets and protected objects will blur due to the growing dependency on civilians and civilian activities during military operations.

The Additional Protocol I approach to ascertaining military objectives is relatively restrictive. Before an object may be deemed a legitimate target, it must "make an effective contribution to military action" or offer the other side a "definite military advantage."⁹⁸ Objects which make an effective contribution are those that are by nature

94. Compare Prosecutor v. Drazen Erdemovic, Case No. IT-96-22-A, Appeals Chamber Judgment, Oct. 7, 1997 (finding an international conflict vis-à-vis the Bosnian Croats) with Prosecutor v. Dusko Tadic, Case No. IT-94-1-T, Opinion and Judgment, May 7, 1997. For a discussion of these cases, see Leslie C. Green, *Erdemovic-Tadic-Dokmanovic: Jurisdiction and Early Practice of the Yugoslav War Crimes Tribunal* in LESLIE C. GREEN, FURTHER ESSAYS ON THE MODERN LAW OF WAR (forthcoming, 1998).

95. See William J. Fenrick, *The Development of the Law of Armed Conflict Through the Jurisprudence of the International Criminal Tribunal for the former Yugoslavia*, in Schmitt & Green, *supra* note 86, at 77-78.

96. See Protocol I, *supra* note 92, art. 48: "In order to ensure respect for and protection of the civilian population and between civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and civilian objects and military objectives and accordingly shall direct their operations only against military objectives." *Id.*

97. See Protocol I, *supra* note 92, art. 48.

98. *Id.*, art. 52, para 2. The term "object" includes combatants within its scope. INTERNATIONAL COMMITTEE OF THE RED CROSS, COMMENTARY ON THE ADDITIONAL PROTOCOLS OF 8 JUNE 1977 TO THE GENEVA CONVENTIONS OF 12 AUGUST, 1949 at 635 (Yves Sandoz, et al, eds., 1987). Military advantage should be evaluated in terms of the entire campaign/war and not simply in terms of the advantage which accrues directly to the attacking force. On this point, see Stefan Oeter, *Methods and Means of Combat*, in Fleck, *supra* note 80, at 105.

beneficial to the military effort: weapons, aircraft, communications, etc. Definite military advantage refers to objects which contribute by virtue of their location, such as bridges and buildings used for shelter. Such objects may not be attacked if only a "potential or indeterminate" advantage is anticipated.⁹⁹ Civilians may not be attacked¹⁰⁰ unless taking "direct part in the hostilities."¹⁰¹ The International Committee of the Red Cross (ICRC) commentary to the Protocol defines "direct" as "acts of war which by their nature or purpose are likely to cause actual harm to the personnel and equipment of the enemy armed forces."¹⁰² When doubt exists, a presumption of civilian status attaches.¹⁰³

The degree of nexus between the object or individual to be attacked and military operations is already the subject of considerable debate.¹⁰⁴ The United States generally opposes an interpretation as restrictive as that propounded by the ICRC.¹⁰⁵ For instance, the U.S. Army has issued a legal opinion that mission essential civilians working at U.S. bases during an armed conflict would be appropriate targets of attack by the enemy.¹⁰⁶ Moreover, the most recent of the U.S. military manuals, *The Commander's Handbook on the Law of Naval Operations* states that "[e]conomic targets that indirectly but effectively support and sustain the enemy's war-fighting capability may . . . be attacked."¹⁰⁷ While this is not the place to resolve the debate, it is clear that a further blurring of

99. See INTERNATIONAL COMMITTEE OF THE RED CROSS, *supra* note 98, at 635-36.

100. See Protocol I, *supra* note 92, art. 51, para. 2.

101. See *id.*, art. 51, para. 3.

102. INTERNATIONAL COMMITTEE OF THE RED CROSS, *supra* note 98, at 619.

103. See Protocol I, *supra* note 92, art. 50, para. 1-2.

104. For an argument directly opposing the ICRC's restrictive approach, see W. Hays Parks, *Air War and the Law of War*, 32 A.F. L. REV. 1, 113-45 (1990).

105. For a general unofficial compilation of the U.S. views on Protocol I by then State Department attorneys, see Abraham D. Sofaer, *AGORA: The U.S. Decision Not to Ratify Protocol I to the Geneva Conventions on the Protection of War Victims*, 82 AM. J. INT'L L. 784 (1988); Michael J. Matheson, *Session One: The United States Position on the Relation of Customary International Law to the 1977 Protocols Additional to the 1949 Geneva Conventions*, 2 AM. U. J. INT'L L. & POL'Y 419 (1987).

106. Letter from DAJA-IA to Counselor for Defense Research and Engineering (Economics), Embassy of the Federal Republic of Germany (Jan. 22, 1988), *cited in* Parks, *supra* note 104, at 134 n. 400.

107. U.S. DEP'T. OF THE NAVY, *THE COMMANDER'S HANDBOOK ON THE LAW OF NAVAL OPERATIONS* § 8.1.1 (1995). The manual labels this a "statement of customary law." *Id.* *citing* Letter from J. Fred Burzhardt, General Counsel, Dep't of Defense, to Senator Edward Kennedy, Chairman of Sub-Comm. on Refugees of Comm. on the Judiciary, *reprinted in* Arthur W. Rovine, *Contemporary Practice of the United States Relating to International Law*, 67 AM. J. INT'L L. 118, 122 (1973). The annotated version of NWP 1-14M specifically defers on the more controversial issue of "[w]hether this rule permits attacks on war-sustaining cargo carried in neutral bottoms at sea, such as by Iraq on the [Iranian] tankers carrying oil exported by Iran during the Iran-Iraq war. . . ." U.S. DEP'T. OF THE NAVY, *supra*, at 8-3, n.11 (1997).

the lines can only increase pressures to render the standard less restrictive. By what logic, for example, would a civil engineer responsible for rapid runway repair at Base X be immune from direct attack, when his military counterpart at Base Y would not be? An analogous dilemma is presented by objects. By current standards a munitions factory is a valid target. Given the essentiality of computers in twenty-first century warfare, would a Microsoft factory not also offer an information dependent military definite enough advantage such that it could be included on the Air Tasking Order? Might the internet itself be a lawful target?

The operational principle of dominant maneuver set forth in *Joint Vision 2010* is a further potential stressor for the principle of distinction. As the battle becomes virtual and non-linear, as battlefields are transformed into battlespaces, military objectives and civilians and civilian objects will be increasingly intermingled. This diminishes the *de facto* protection formerly provided by distance from the forward edge of the battle area. While it is true that the fast-paced maneuver warfare of, for example, the German blitzkrieg made it difficult to achieve this protection, the difference with prior warfare was quantitative, not qualitative—civilians could still flee the onslaught. Dominant maneuver generates qualitative evolution, because, at least in belligerent territory, there are far fewer, maybe no, places to which to flee. Similarly, in the past strategic bombing could be avoided by moving from the vicinity of strategic targets. In the twenty-first century, by contrast, both the tactical and strategic fight may occupy the same space. Thus, civilians might move away from strategic targets (factories, storage facilities, etc.) only to find themselves in the midst of battle proper.¹⁰⁸

This reality is likely to encourage enhanced obligations for precaution in attack, particularly target verification.¹⁰⁹ The information environment and existence of brilliant weaponry will ease compliance should this occur. One potential downside of the greater transparency of targets may well be to encourage placement of military personnel and equipment near protected objects or persons in the hope that the other side will hesitate to attack lest harm befall them. The use by Saddam Hussein of civilians and cultural sites as shields is well known.¹¹⁰ Indeed, since the

108. Parties to Protocol I are obligated to "endeavour to remove the civilian population, individual civilians and civilian objects under their control from the vicinity of military objectives." Protocol I, *supra* note 92, art. 58, para. a. However, even if a Party intentionally uses civilians as a shield, the attacker remains obligated to consider collateral damage and incidental injuries in their discrimination and proportionality calculations. *See Id.*, art. 51., paras. 7–8.

109. The requirements for precautions are set forth in Protocol I, *supra* note 91, art. 57.

110. After attacking Kuwait, the Iraqis used Western and Kuwaiti hostages to shield their military sites from Coalition air attacks. The non-Kuwaiti civilians were eventually

conflict ended, Iraqi civilians have flooded potential targets on numerous occasions to protect them in the face of threatened air attacks against which the Iraqi military would likely prove impotent.¹¹¹ In much the same way that Iraqi use of these tactics should not be particularly surprising given their weakness vis-à-vis their opponents, the risk of such tactics in the notional asymmetrical battles of *Bellum Americanum* is especially high.

Perhaps an even more ominous prospect is that transparency may create incentives for perfidious acts by potential targets.¹¹² If I cannot hide, then perhaps my only means of survival is to appear to the enemy as other than what I am. In fact, the relaxation of the criteria for combatant status in the past decades is historical precedent supporting the likelihood of such a tendency. Recall that under the Regulations annexed to Hague Convention IV, combatants were those who were members of the regular armed forces (or formal militia), were commanded by a person responsible for their conduct, wore a fixed distinctive emblem (or uniform), carried their weapons openly, and conducted operations in accordance with the law of war.¹¹³ The 1949 Geneva Convention on Prisoners of War extended this status to members of an organized resistance movement which otherwise complied with the Hague IV requirements.¹¹⁴ This change was one of status, not acts. Thus, for example, Josip Broz Tito's guerrillas would have fallen within the definition.

As the nature of warfare evolved in the post-War period from state on state to wars of national liberation and the like, many of the forces involved dispensed with distinguishing themselves and carrying weap-

released in December 1990 when the tactic resulted in near universal condemnation. See CONDUCT OF THE PERSIAN GULF WAR, *supra* note 54, at 607-08. Using a civilian or other protected person is a violation of Geneva Convention IV and Protocol I and constitutes a Grave Breach. Geneva Convention IV, *supra* note 92, arts. 29 & 147; Protocol I, *supra* note 92, arts. 75 para. 2(c) & 85 para. 2. Other examples included the dispersal of helicopters to residential areas, placing surface-to-air missiles in a school in a populated area of Kuwait City, and placement of fighter aircraft next to the Temple of Ur. See CONDUCT OF THE PERSIAN GULF WAR, *supra* note 54, at 613-15.

111. Even if a party intentionally uses civilians as a shield, a specific violation of Protocol I, the attacking party remains obligated to consider collateral damage and incidental injuries in their discrimination and proportionality calculations. See Protocol I, *supra* note 92, art. 51, paras. 7-8.

112. Perfidy consists of "[a]cts inviting the confidence of an adversary to lead him to believe that he is entitled to, or is obliged to accord, protection under the rules of international law applicable in armed conflict, with intent to betray that confidence." Protocol I, *supra* note 92, art. 37. In addition to Protocol I, perfidy is forbidden in the Hague IV Annexed Regulations. Convention Respecting the Laws and Customs of War on Land, Oct. 18, 1907, art. 23, para. F, Annex, 36 Stat. 2277, 1 Bevans 631 [hereinafter Hague Convention IV].

113. Hague Convention IV, *supra* note 112, art. 1.

114. See Geneva Convention IV, *supra* note 92, art. 4 para. A(2).

ons openly. The reason was quite practical. Facing a militarily superior force which occupied much of the territory in which they were operating, guerrilla fighters could not possibly distinguish themselves and have any chance of success.¹¹⁵ This fact was recognized in Additional Protocol I's Article 44 exception to the aforementioned criteria for situations where "owing to the nature of the hostilities an armed combatant cannot so distinguish himself."¹¹⁶ In such cases, a combatant need only carry his arms openly "during each military engagement" and "during such time as he is visible to the adversary while he is engaged in a military deployment preceding the launching of an attack . . ."¹¹⁷ Law responded to practicalities that rendered compliance difficult or dangerous for particular participants in the conflict.

The pervasiveness of surveillance and reconnaissance capabilities in next generation warfare can only serve to exacerbate this trend as the disincentives for distinguishing themselves swell for many combatants. In light of the technology that will be available, even revealing themselves briefly during or immediately preceding an attack will prove risky. How states react to this reality will be driven by their perspective on the humanitarian issues presented. But just as it is not surprising that those states who might be expected to face guerrillas tended to oppose Article 44 while those that either had arisen from guerrilla movements or were unlikely ever to face one did not, states which enjoy a technological advantage can be expected to resist further erosion of the standard. Those which are technologically disadvantaged may not.

A final aspect of the *Bellum Americanum* that may prove a stressor for discrimination is the use of "non-lethal" weapons. Non-lethals, while less deadly, tend to be less discriminatory. A slick-um will render

115. The requirement that combatants distinguish themselves from non-combatants through use of a distinctive emblem dates back to the Brussels Declaration of 1874. See *Project on an International Declaration concerning the Laws and Customs of War*, reprinted in Schindler & Toman, *supra* note 2, at 25. With regard to Protocol I, according to the Rapporteur, the "exception recognized that situations could occur in occupied territory and in wars of national liberation in which a guerrilla fighter could not distinguish himself throughout his military operations and still retain any chance of success." XV OFFICIAL RECORDS OF THE DIPLOMATIC CONFERENCE ON THE REAFFIRMATION AND DEVELOPMENT OF INTERNATIONAL HUMANITARIAN LAW APPLICABLE IN ARMED CONFLICTS, CDDH/407/Rev.1, 453 para. 19 (1974-77).

116. Protocol I, *supra* note 92, art. 44, para. 3.

117. *Id.* The United States opposes this provision on the ground that it will place civilians at greater risk by making it harder for military personnel to distinguish them from lawful combatants. See U.S. AIR FORCE, OFFICE OF THE JUDGE ADVOCATE GENERAL, OPERATIONS LAW DEPLOYMENT DESKBOOK (1993), tab 12, para. 1.7.6.1. Thus, by the U.S. view, those who fail to comply with the requirements of Hague become illegal combatants who can be targeted and, if determined to be illegal combatants by an appropriate Tribunal, tried and punished. See U.S. DEP'T. OF THE NAVY, *supra* note 107, § 12.7.1.

a road treacherous regardless of who passes down it and an acoustic device is as likely to make a child playing nearby sick as it is to keep potential attackers away from a perimeter. Interestingly, the use of non-lethals derives from a desire to foster proportionality in warfare—less precise weapons are employed in lieu of less lethal ones. Accordingly, there will be significant support for relaxing the demands of discrimination when it conflicts with efforts to enhance proportionality by limiting the quantum of collateral damage and incidental injury.

Proportionality. Proportionality is the general principle in the law of armed conflict that prohibits means and methods of warfare which cause collateral damage to civilian objects or incidental injury to civilians disproportionate to the military advantage sought.¹¹⁸ The *Joint Vision 2010* operational concept of precision engagement enabled by information systems and brilliant weaponry is likely to push traditional proportionality calculations towards a point where immediately foreseeable collateral damage or incidental injury is unacceptable, at least when caused by a technologically advanced military.¹¹⁹ In the twenty-first century, the mere possibility of such damage may cause mission planners, or even individual soldiers, to shift to different weapons or tactics.

Collateral damage and incidental injury have historically been the product of three factors: 1) a lack of full knowledge as to what is being hit; 2) the inability to surgically craft the amount of force being applied to the target; and 3) the inability to ensure that the weapon strikes precisely the right point. With regard to the first, consider the Al - 'Amariyah Bunker incident.¹²⁰ Some 300 noncombatants were killed during the Persian Gulf War when U.S. aircraft destroyed an Iraqi command and control bunker unaware that civilians had entered it during the night. As to weapons availability and capability, extended gaps along the continuum of force remain. For instance, because non-lethals are absent from the inventory of most militaries, forces sent into a crowd control or perimeter defense situation have nothing to resort to between

118. Protocol I, *supra* note 92, art. 51, para. 5(b) defines it as "an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated." A similar prohibition is found in the Article 57 requirements for precautions in attack. *Id.*, art. 57, para. 2(a)(iii) & art. 57, para. (2)(b). On proportionality generally, see William J. Fenrick, *The Rule of Proportionality and Protocol I in Conventional Warfare*, 98 MIL. L. REV. 91 (1982); Judith G. Gardam, *Proportionality and Force in International Law*, 87 AM. J. INT'L L. 391 (1993).

119. The targeting policy of the Coalition forces during the Persian Gulf War was clearly moving in this direction. For instance, only PGMs were used against targets in downtown Baghdad to avoid collateral damage and incidental injury. See CONDUCT OF THE PERSIAN GULF WAR, *supra* note 54, at 97-98.

120. See *id.* at 615.

warnings or warning shots and the use of deadly force. Finally, in terms of accuracy—and despite the morbidly spectacular film of PGM strikes during the Persian Gulf War—the reality is that many weapons continue to lack fully reliable precision guidance. Today, for instance, fighter-bombers still “toss,” “drop,” or “dive bomb” the majority of their weapons, which in most cases are unguided general purpose bombs.¹²¹

Each of these obstacles will eventually be overcome by technology. “Shooters” will be able to know what is they are hitting, and hit it with a weapon that applies only the amount of force necessary to destroy or disable it. Accuracy will be at nearly 100%. The question will no longer be whether the commander, planner, or shooter properly weighed expected collateral damage and incidental injury against the concrete and direct military advantage he anticipated.¹²² After all, properly planned and executed, the attack should theoretically have minimal collateral damage or incidental injury.

But civilian casualties will inevitably occur and civilian objects will be damaged and destroyed—even in the twenty-first century. The evaluation of such results will turn on the exercise of “due care” in analyzing the target and selecting the weapon and tactic to use. Of course, this standard is operative today in Article 57 of Additional Protocol I and in customary international law.¹²³ The difference in the future will be the complexity of the process given the greater availability of target information, wider selection of weapons, and the discrimination difficulties noted above. Al -’Amariyah Bunker provides a prototype example of the concerns that will surround collateral damage and incidental injury. The weapon selected, the GBU-28, was a 5,000 pound

121. For a description of current aerial weaponry and their employment techniques, see, for example, Robert A. Coe & Michael N. Schmitt, *Fighter Ops for Shoe Clerks*, 42 A.F.L. REV. 49 (1997).

122. See Protocol I, *supra* note 92, art. 51 para. 5(b), and, art. 57 para. 2(b).

123. For instance, Article 57 requires “those who plan or decide upon an attack” to “do everything feasible to verify that the objectives to be attacked are neither civilians nor civilian objects and are not subject to special protection” and to “take all feasible precautions in the choices of means and methods of attack.” Protocol I, *supra* note 92, art. 57 para. 2(i-ii) (emphasis added). The ICRC Commentary imposes a fairly demanding standard:

[T]he identification of the objective, particularly when it is located at a great distance, should be carried out with *great care*. Admittedly, those who plan or decide upon such an attack will base their decision on information given them, and they cannot be expected to have personal knowledge of the objective to be attacked and of its exact nature. However, this does not detract from their responsibility, and in case of doubt, *even if there is only a slight doubt*, they must call for additional information and if need be give orders for further reconnaissance. . . . The evaluation of the information obtained must include a serious check of its accuracy.”

INTERNATIONAL COMMITTEE OF THE RED CROSS, *supra* note 98, at 680–81 (emphasis added).

laser guided bomb that has the ability to penetrate twenty feet of concrete before exploding. It was just the right weapon to use because though it would destroy the bunker, laser guidance and the fact that the thick walls of the bunker would contain the blast meant that collateral damage and incidental injury were unlikely. The question, therefore, was not whether the ensuing deaths outweighed the military advantage gained in destroying this important Iraqi command and control facility, but whether the planners *knew or should have known* there were civilians therein.

Nonetheless, proportionality, as traditionally understood, will retain its utility in assessing reverberating effects, i.e., those effects not directly caused by the attack but rather by first tier effects. The most often cited example is the attack on the Iraqi electrical grid during the Gulf War.¹²⁴ That attack severely degraded Iraqi command, control, and air defenses; unfortunately, it also denied electricity to the civilian population, affecting hospitals, refrigeration, emergency response capabilities, and so forth. This type of problem will only be exacerbated in the next century due to the interconnectivity of military and civilian functions. For instance, an attack on a satellite providing weather data necessary for flight operations may also deny weather data necessary for agriculture and disaster relief operations. Destruction of a satellite providing positioning data may likewise endanger civilian aircraft or ships by denying them essential navigational information. Shutting down a computer used to direct rail traffic in an effort to disrupt the military logistic chain may cause shortages of essential civilian goods. The spreading dependency on highly interconnected information and communications systems contains within it particular risks of reverberating effects during information warfare. These future realities will impel proportionality calculations towards a macro view of collateral damage and incidental injury.¹²⁵

Military Necessity. The full spectrum dominance envisioned in *Bellum Americanum* will surely stress, in an unintended way, traditional

124. For an excellent discussion of attacks on electrical grids, see James W. Crawford, *The Law of Noncombatant Immunity and the Targeting of National Electrical Power Systems*, FLETCHER F. WORLD AFF., Summer/Fall 1997, at 101. For criticism of the air campaign's effect on the civilian population, see Roger Normand & Chris af Jochnick, *The Legitimation of Violence: A Critical Analysis of the Gulf War*, 35 HARV. INT'L L.J. 387, 399-402 (1994); William M. Arkin, *The Environmental Threat of Military Operations*, in PROTECTION OF THE ENVIRONMENT IN ARMED CONFLICT 116 (Richard J. Grunawalt, et al. eds., 1996).

125. Paradoxically, reverberating effects may enhance the deterrent or compellant effect of an action, for the greater the impact, the more likely a target state's decision-making will be affected.

understandings of military necessity.¹²⁶ Under current norms, an actor must be able to articulate the imperative military advantage intended to be gained by an attack. "There must be some reasonable connection between the destruction of property [or individuals] and the overcoming of the enemy forces."¹²⁷ The problem is that as one side faces an opponent capable of militarily dominating across the diverse spectrum of war, it will inevitably consider asymmetrical attacks, possibly using unconventional means.

The Iraqi Scud missile attacks against Israeli population centers were portentously archetypal. In no way did the attacks contribute to overcoming Iraq's enemies; Israel was not even involved in the conflict. Yet the apparent randomness of the attacks disguised a very clever attempt to fragment the Coalition by drawing the Israelis in and thereby creating the specter of Arabs allied with Israelis in an attack on fellow Arabs. Facing full spectrum dominance, Saddam Hussein sought other means to weaken the forces facing him.¹²⁸

History teaches that forces facing vastly superior opponents often resort to seemingly random acts of violence. As incidents ranging from the bombing of the King David Hotel in Jerusalem to that of the Khobar Towers in Riyadh demonstrate, when frustrated on the battlefield disadvantaged opponents often carry the fight beyond the fields of fire in order to rupture alliances, cause an enemy to lose the will to fight, or weaken public or international support for their adversary's war effort. If full spectrum dominance becomes a reality, acts that would seemingly appear wanton or random, that is, not militarily necessary, will be more readily characterized as all that is available to the disadvantaged side. This may cause the concept of military necessity to slip over time in much the same way that practicalities have caused a relaxation in the criteria for combatant status.

Humanity. By contrast, *Bellum Americanum* exhibits stressors which may suggest a heightening of the standards of humanity. Initially expressed in the St. Petersburg Declaration of 1868 as the use of means that "uselessly aggravate the sufferings of disabled men, or render their death inevitable,"¹²⁹ the maturation of the principles of proportionality

126. On the subject of necessity generally, see H. McCoubrey, *The Nature of the Modern Doctrine of Military Necessity*, 30 REVUE DE DROIT MILITAIRE ET DE DROIT DE LA GUERRE 215 (1991); DE MULINEN, *supra* note 30, at 82-84.

127. Hostages (U.S. v. List), 11 T.W.C. 759, 1254 (1950).

128. For an argument that the Coalition violated the principle of necessity, see Normand & af Jochnick, *supra* note 124, at 402-09.

129. Declaration of St. Petersburg, 1868, *reprinted in* Schindler & Toman, *supra* note 2, at 101. The principle is also expressed in Protocol I: "It is prohibited to employ weapons,

and humanity have subsumed much of its original meaning. After all, to the extent the suffering is useless it is militarily unnecessary and, because it offers no direct and concrete military advantage, disproportionate. Putting this cumulative component of humanity aside, what remains are *ab initio* prohibitions on methods and means of warfare that are not so much inhumane as inhuman. We intuitively recognize them as wrongful regardless of the context in which they occur. To some extent, they are acts which violate the "dictates of public conscience,"¹³⁰ acts that civilized people *just don't do*.

There has been a clear trend in the direction of prohibiting weapons on the basis of humanity, most recently evidenced by the Chemical Weapons,¹³¹ Biological Weapons,¹³² Conventional Weapons,¹³³ and Anti-Personnel Mines¹³⁴ Conventions. There is little doubt that the employment of each of the prohibited weapons can, in specific scenarios, cause minimal suffering and little risk to civilians or civilian objects. The use of tear gas to protect a facility is more humane than the use of a rifle. Similarly, Protocol IV of the Conventional Weapons Convention forbids the use of permanently blinding lasers, thereby driving soldiers into the

projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering." Protocol I, *supra* note 92, art. 35 para. 2.

130. This phrase is drawn from the Martens Clause. Found in Hague IV, it provides:

Until a more complete code of laws has been issued, the high Contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and belligerents remain under the protection and the rule of principles of the laws of nations, as they result from the usages established among civilized peoples, from the laws of humanity, and from the dictates of public conscience.

Hague Convention IV, *supra* note 112, preamble.

A similar provision is found in Protocol I, *supra* note 92, art. 1 para. 2.

131. Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction, Jan. 13, 1993, U.N. Doc. CD/CW/WP.400/Rev.1, 32 I.L.M. 800 (1993).

132. See Biological Weapons Convention, *supra* note 1.

133. See Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects, Oct. 10, 1980, 1342 U.N.T.S. 7, 19 I.L.M. 1523 (1980)[hereinafter Conventional Weapons Convention].

134. See Conventional Weapons Convention, Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices (Protocol II), 19 I.L.M. 1529 (1980), as amended on May 3, 1996, 35 I.L.M. 1209 (1996). In 1997 anti-personnel mines were banned completely (for Parties) in the Ottawa Treaty on Personnel Mines. Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, Sept. 18, 1997, available on-line at ICRC website, *supra* note 3. The Convention is not yet in force.

use of lethal force to protect themselves.¹³⁵ The rationale for these and other cases is humanity. No matter how much it may make sense in a particular context, civilized human beings do not blind or poison each other, and therefore such behavior is outlawed.

Recall just some of the weapons imagined for the twenty-first century—acoustic weapons that induce vomiting, microwaves that cause the human body to heat up, and electromagnetic pulses that will cause an airplane to fall to the earth because its engine shuts down. Such weapons may be humane in certain circumstances, but there is little doubt that many individuals will react to them viscerally as *inhuman*. Given the current trend in humanity based conventions, we can expect many of these weapons to be targeted for prohibition, regardless of their military necessity or the possibilities they offer for proportionate use.

Treaty Regimes. War as envisioned in *Bellum Americanum* will stress a number of treaty regimes. For instance, the 1972 Biological Weapons Convention prohibits the development, stockpile, acquisition, or retention of “microbial or other biological agents, or toxins in quantities that have no justification for prophylactic, protective or other peaceful purposes” or of “weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.”¹³⁶ By this standard the use of microbes capable of “eating” rubber, silicon, electronics or oil is likely forbidden. Similarly, the 1972 Chemical Weapons Convention prohibits parties from developing, acquiring, stockpiling, or using chemical weapons. Chemical weapons include toxic chemicals which through their “chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals.”¹³⁷ Many supercaustics and metal embrittlement agents could certainly fall into this category, and there is little doubt that sleep-inducing agents would.

A particular challenge of *Bellum Americanum* is to the current legal regime of space. There are a number of conventions which limit military activities in space, the Outer Space Treaty being that with the widest scope.¹³⁸ Article I of the treaty creates a *res communis*, *res nullius* area

135. See Protocol IV, *supra* note 1. Extensive discussion of the laser and mines issues can be found at the ICRC's homepage website. <<http://www.icrc.org/unicc/icrcnews.nsf/DocIndex/home_eng?OpenDocument>>.

136. Biological Weapons Convention, *supra* note 1, art. 1.

137. Chemical Weapons Convention, *supra* note 131, art. 2.

138. On military activities in space, see Peter Jankowitsch, *Legal Aspects of Military Space Activities*, in *SPACE LAW: DEVELOPMENT AND SCOPE* 143 (Nandasiri Jasentuliyana ed., 1992); Richard A. Morgan, *Military Use of Commercial Communications Satellites: A New Look at the Outer Space Treaty and "Peaceful Purposes,"* 60 J. AIR L. & COM. 237 (1994); Colleen Driscoll Sullivan, *The Prevention of an Arms Race in Outer Space: An Emerging Principle of International Law*, 4 TEMP. INT'L & COMP. L.J. 211 (1990).

by providing that "[o]uter space . . . shall be the province of all mankind. . . [and]. . . shall be free for exploration and use by all States." Article III requires all activities in space be carried on "in the interest of maintaining international peace and security" and restricts use of the moon and other celestial bodies to peaceful purposes.¹³⁹

These provisions would appear at odds with the conception of space operations set forth in *Joint Vision 2010*, and by both the U.S. Space Command and the U.S. Air Force Scientific Advisory Board. How, for example, does the operational concept of space control, which includes denial of the use of space to the enemy, comport with the Article I requirement that it be preserved for use by all states? How can concepts of force projection be squared with the reservation of space for peaceful purposes? Indeed, how can the centrality of space to the U.S. vision of warfare in the twenty-first century be at all consistent with the treaty prohibitions?

In fact, the inconsistency is not as clear cut as might at first glance appear. First, there is no prohibition on the placement of weapons in space, only upon weapons of mass destruction. Thus whether or not their use is prohibited, their development and emplacement would not be. More fundamentally, whether or not the treaty would survive the outbreak of hostilities is the subject of vigorous debate.

Under classic international law, treaties did not retain their effect during armed conflict because war existed beyond the realm of international relations—*bellum omnium contra omnes*. The more modern approach accepts the survival of certain legal relationship between opposing belligerents.¹⁴⁰ Three schools of thought characterize this camp. The first maintains that whereas selected legal relations do survive, treaties do not. A second group argues that treaties survive armed conflict unless their existence is fundamentally contrary to the existence of conflict, as for example a collective defense treaty between two adversaries would be. The third approach, labeled the "theory of differentiation," takes a middle ground by asking whether continued vitality of the treaty

139. See Treaty on Principles Governing the Activities of States in the Exploitation and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, arts. 1 & 3, 18 U.S.T. 2410, 610 U.N.T.S. 205, 6 I.L.M. 386 (1967).

140. This was the position taken by Judge Benjamin Cardozo in *Techt v. Hughes*: "international law to-day (sic) does not preserve treaties or annul them, regardless of the effects produced. It deals with such problems pragmatically, preserving or annulling as the necessities of war exact. It establishes standards, but it does not fetter itself with rules." 128 N.E. 185, 191 (N.Y.), *cert. denied*, 254 U.S. 643 (1920).

in question is consistent with the larger context in which it operates (such as the existence of Parties not involved in the conflict).¹⁴¹

This area of law remains unsettled, particularly when applied in the context of a multilateral treaty governing an entire media of the earth-space environment. Nevertheless, the fervor of the debate can only be exacerbated by *Bellum Americanum*'s emphasis on space-based operations. As this occurs, calls to establish some degree of normative clarity are certain to be heard.

Clarity will also surely be sought over the concept of the reservation of space for peaceful purposes. There is a long-standing dispute over the term, with some arguing that peaceful purposes should be understood to be "nonmilitary," whereas others, including the United States, interpret it as meaning "nonaggressive."¹⁴² Any military activities conducted under U.N. Charter VII mandate, pursuant to the Article 51 right to individual or collective self-defense, or consistent with the inherent right of self-defense under customary international law would by definition be non-aggressive. As some states begin to enjoy full spectrum dominance grounded in great part on space-based assets, whereas others without the resources to exploit space are rendered vulnerable by their relative nonparticipation in the space regime, the peaceful uses issue is likely to resurface as a major substantive point of international discord.

Dissemination. In *Bellum Americanum*, the ability to direct lethal force is increasingly pushed down the chain of command. Individual soldiers, sailors or airmen of the twenty-first century will have far more information on which to base the decision to employ force than their twentieth century counterparts. Moreover, they will control a wider spectrum of force capable of being applied with greater precision. Thus, they will be both more and less lethal, and operate more autonomously than ever before. This will drive up the need for relatively complex training in the law of armed conflict at increasingly lower levels. Future warfare will, therefore, move current law of armed conflict dissemination requirements towards reinforcement and strengthening, and increase the importance of the role of legal advisers.¹⁴³

141. For a brief discussion of the approaches, see Michael N. Schmitt, *Green War: An Assessment of the Environmental Law of International Armed Conflict*, 22 YALE J. INT'L L. 1 (1997).

142. See U.S. DEP'T. OF THE NAVY, *supra* note 107, at 2-38 n.114.

143. The requirement to train military personnel in the law of armed conflict is found in many instruments. See, e.g., Hague Convention IV, *supra* note 112, art. 1; Geneva Convention I, *supra* note 92, art. 47; Geneva Convention II, *supra* note 92, art. 48; Geneva Convention III, *supra* note 92, art. 127; Geneva Convention IV, *supra* note 92, art. 144; Protocol I, *supra* note 92, arts. 83 & 87; Protocol II, *supra* note 92, art. 19; Conventional Weapons Convention, *supra* note 133, art. 6. On the role of legal advisers, see generally L.C. GREEN, *ESSAYS ON THE MODERN LAW OF WAR* 73-82 (1985).

Normative Relativism. As the gap between the military “haves” and “have nots” widens, there will be subtle stressors that encourage an interpretation of the law of armed conflict relative to the state to which it is applied. For instance, due to their high cost, not all states can afford the precision munitions that help foster discrimination and proportionality. State A, which cannot afford them, is not criticized when it drops an unguided bomb that causes incidental injuries that are proportional to the military advantage gained. However, when state B, which can afford PGMs, elects to employ an unguided bomb in lieu of a precision weapon, it must justify that decision as reasonable in the circumstances (e.g., preserving PGMs for other targets which present a greater risk of collateral damage and incidental injury). *In abstracto*, an identical standard is applied to both states—a requirement to minimize collateral damage and incidental injury. In practice, however, the developed state is held to a higher standard.

In the high-tech war of the twenty-first century this reality will be exaggerated many-fold as the gap between “haves” and “have nots” widens. If state A has limited sensor capabilities, whereas state B’s are robust, must state B reasonably exhaust those capabilities to ensure the target is what B believes it to be *or* will it only be held to the standard of care imposed on A? In all likelihood, the answer lies in the teleological underpinnings of the law of armed conflict. It is no longer a body of law designed to ensure a fair-fight between two opponents. On battlefields of the twentieth and twenty-first centuries, the law of chivalry has been overtaken by humanitarian law. Today, the law of armed conflict is designed primarily to minimize suffering and prevent unnecessary destruction. This being so, belligerents are held to the standards to which they are capable of reasonably rising. The sole exceptions are absolute prohibitions, such as the direct targeting of civilians or the use of poison.

This normative relativism may take on a new form in the next century. If the economic and technological gap widens as the alternative future set forth above suggests, the move towards a capability-based humanitarian regime may play itself out in an obligation to *field* weapons that pose the least risk to protected persons and objects.¹⁴⁴ Some may even argue that if a wealthy state has the economic wherewithal to arm its forces with precision weapons, it should be obligated to do so.

144. Since the Persian Gulf War, the U.S. military has invested heavily in smart weapons. For example, the two U.S. carriers deployed to the Persian Gulf during the February 1998 crisis carried with them more smart weapons than all six of the carriers deployed during the war. See Bradley Graham, *New Weapons Give Navy Top Air Role This Time*, WASH. POST, Feb. 12, 1998, at 1, 25.

Similarly, it may be argued that if it has access to non-lethal weapons, its forces must be armed with them so long as doing so is otherwise operationally sound. This subtle shift from dictating tactics to dictating public policy may well prove a by-product of the "haves-have nots" polarization of the twenty-first century.

The polarization may also determine the position states take towards law of armed conflict codification efforts. For very logical reasons, states likely to be the target of a particular mean or method of warfare are most likely to support its prohibition; those likely to use it will generally oppose its banning. Thus, for example, the United States opposes the Ottawa Treaty on Antipersonnel Mines in part because it sees great utility for the weapon on the Korean Peninsula.¹⁴⁵ Similarly, the United States, which will remain the major space power into the next century, interprets the Outer Space Treaty quite liberally. Given the technological gap between militaries that will emerge in the twenty-first century, there are certain to be attempts to offset weaknesses through bans on weaponry and its use. Support for such efforts, whether motivated by genuine humanitarian concerns or a healthy dose of reality therapy about one's own military impotence, will be determined in great part by the extent to which a state enjoys the benefits of *Bellum Americanum*.

Of course, one must always be careful of what one wishes for. The "haves-have nots" dichotomy is driven by warfighting concerns. In terms of *humanitarian* principles, opposition to weaponry may not always be a positive stance. After all, much of the weaponry on the drawing boards will effectively reduce collateral damage and incidental injury to civilians and civilian objects. Those states which are neither likely to use new weapons or be the target thereof will, therefore, play a vital role as "honest-brokers" in maintaining the humanitarian *raison d'être* of the law.

CONCLUSION

Only time will tell whether the alternative future that has here been labeled *Bellum Americanum* will be realized. To the extent that it is, law can be expected to respond reactively and proactively to its changed context. The normative consequences, some of which have been suggested above, are clearly likely to be momentous. Assessments of whether such changes are steps forward or backwards will often depend

145. U.S. policy on this issue is described in White House Office of the Press Secretary Fact Sheet, *U.S. Efforts to Address the Problem of Anti-Personnel Landmines*, Sept. 17, 1997 (visited Sept. 13, 1998) <<<http://www.state.gov/www/global/arms/index.html>>>.

on one's perspective—nationality, ethical and humanitarian values, economic station in life, etc. Nevertheless, regardless of the conclusions individual cognitive contexts lead us to, there are portents of danger on the horizon for humanitarian principles. The line between war and peace and between inter and intra-state conflict may become dangerously blurred. Discrimination is placed at risk by growing militarization of civilians and civilian activities. The widening gap between military “haves” and “have-nots” will encourage disadvantaged forces to fight asymmetrically in ways that stress, possibly even violate, current normative parameters. The risk of warfare extending into a new arena—space—is looming.

In light of these risks, and the fact that a revolution of military affairs is upon us, perhaps the international community should take an increasingly proactive approach to normative change. As new technologies in warfare are brought on-line, the disincentives for the “haves” to abandon or limit them and the incentives for the “have-nots” to defeat them through other than conventional means will be high. In a world evolving as rapidly as today's, time is of the essence. Of course, this is not to suggest codification for the sake of codification. Some weapons and operational concepts foster humanitarian ends. The point is that the time to think clearly about twenty-first century war and what can be done to shape it is now.

In closing, it is worth noting that what is an *objectively* valid threat to a normative architecture which fosters world order in the twenty-first century is the seeming sterility of the acts future warriors will engage in. The further removed they are from their act of wars, the more difficult it will be for them to retain the humanitarian spirit which underlies the law of armed conflict. It is one thing to push a button while flying through the sky surrounded by nothing but clouds. It is quite another to watch a human being you have shot bleed to death in front of you. The latter act brings home much more vividly the moral significance of the authority to use deadly force that you have been entrusted with. As we enter the next millennium, we must guard against losing sight of the reality of armed conflict, a reality found only in the consequence of an act, not the act itself.