Strategy in the Contemporary World

An Introduction to Strategic Studies

John Baylis

James Wirtz

Eliot Cohen

Colin S. Gray

Outline of Contents

Detailed Contents

Acknowledgements

About the Contributors

John Baylis is a Professor and Head of the Department of Politics and International Relations and Director of the Centre for the Study of Conflict at the University of Wales, Swansea. His publications include *Contemporary Strategy* (with Ken Booth, John Garnett, and Phil Williams); *Masters of Nuclear Strategy* (ed. with John Garnett), and *Ambiguity and Deterrence*.

Stephen Biddle is Associate Research Professor of National Security Studies at the US Army War College Strategic Studies Institute (SSI), while on leave from the political science faculty at the University of North Carolina at Chapel Hill. He earned his AB (1981), MPP (1985), and Ph.D. (1992) degrees from Harvard University. He is currently completing a book on the determinants of military capability.

Eliot Cohen is Professor of Strategic Studies at the Paul H. Nitze School of Advanced International Studies of Johns Hopkins University. He earned his Ph.D. in political science from Harvard in 1982. His books include *Military Misfortunes: The Anatomy of Failure in War* (with John Gooch), and *Supreme Command: A Study in Leadership* (forthcoming).

Malcolm R. Davis is currently a lecturer in Defence Studies at the Joint Services Command and Staff College (JSCSC). He is finishing his Ph.D. in Security Studies at the University of Hull. His dissertation topic is 'East Asian Maritime Security in the 21st Century and the Impact of the Revolution in Military Affairs'.

Theo Farrell is College Lecturer in International Relations at University College Dublin. His publications include *Weapons without a Cause: the Politics of Weapons Acquisition in the United States* (Macmillan, 1997), *The Sources of Military Change: Culture, Politics, Technology*, ed. with Terry Terriff (Lynne Rienner, 2002). He is Associate Editor of the *Review of International Studies*.

Lawrence Freedman has been Professor of War Studies at King's College, London since 1982. He was educated at Whitley Bay Grammar School and the Universities of Manchester, York and Oxford. His most recent books include an Adelphi Paper on 'The Revolution in Strategic Affairs', an edited book on *Strategic Coercion*, and *Kennedy's Wars*.

Sir Timothy Garden is Visiting Professor at the Centre for Defence Studies, King's College London. He spent over thirty years in the Royal Air Force as a fighter, bomber, and helicopter pilot. He retired from the military as Commandant of the Royal College of Defence Studies in 1996 in the rank of Air Marshal (three-star General). His publications (available at www.tgarden.co.uk) include *The Technology Trap* and *Can Deterrence Last?*

John Garnett was educated at the London School of Economics where he graduated with first class honours and a masters degree in International Relations. He is currently Chairman of the Centre for Defence Studies at King's College London. His most recent publication is *British Foreign Policy: Constraints and Choices for the 21st Century* with Sir Lawrence Martin.

Colin S. Gray is Professor of International Politics and Strategic Studies, and is Director of the Centre for Strategic Studies at the University of Reading, UK. His most recent book is *Modern Strategy* (Oxford: Oxford University Press, 1999). His next major work is *Strategy and Chaos: RMA Theory and the Evidence of History* (London: Frank Cass, forthcoming).

James D. Kiras is currently a Research Analyst with the National Institute for Public Policy in Fairfax, Virginia. He has published chapters in *Brassey's Defence Annual 1999* (Brassey's, 2000) and *A Nation's Navy: In Quest of a Canadian Naval Identity* (McGill-Queen's University Press, 1996). He is completing his Ph.D. studies at the University of Reading, UK.

Daniel Moran teaches International and Military History in the Department of National Security Affairs at the Naval Postgraduate School, Monterey, California. He is also a Fellow of the Hoover Institution at Stanford University. His latest publication is entitled *The Legend of the Levée en Masse*. Professor Moran was educated at Yale and Stanford Universities.

Justin Morris is Lecturer in International Politics and Deputy Director of the Centre for Security Studies in the Department of Politics and International Studies, University of Hull, UK. He is co-author (with Hilaire McCoubrey) of *Regional Peacekeeping in the Post-Cold War Era* (The Hague: Kluwer Law International, 2000).

Keith B. Payne is the President and Director of Research at the National Institute for Public Policy. He also serves as Adjunct Professor at Georgetown University and Southwest Missouri State University. His most recent book is *The Fallacies of Cold War Deterrence and a New Direction* (University Press of Kentucky, 2001). Dr Payne earned his MA and Ph.D. in International Relations from the University of Southern California.

Sam J. Tangredi, Captain, US Navy, is currently Senior Military Fellow at the Institute for National Strategic Studies, National Defense University, Washington, DC. Previously, he commanded the amphibious warship USS HARPERS FERRY. He earned a Ph.D. in International Relations from the University of Southern California. His most recent publication is *All Possible Wars: Toward a Consensus View of the Future Security Environment, 2001–2025*.

C. Dale Walton is a Visiting Assistant Professor at Southwest Missouri State University in Springfield, Missouri. He is also a Managing Editor of *Comparative Strategy: An International Journal*. His book *The Myth of Inevitable US Defeat in Vietnam* is forthcoming from Frank Cass.

James J. Wirtz is Chairman and Professor in the Department of National Security Affairs, Naval Postgraduate School, Monterey, California. He is the author of *The Tet Offensive: Intelligence Failure in War* (Cornell University Press, 1991, pbk 1994), and is co-editor with Jeffrey A. Larsen of *Rockets' Red Glare: Missile Defenses and the Future of World Politics* (Westview Press, 2001). Professor Wirtz earned his degrees in political science from Columbia University (M.Phil. 1987, Ph.D. 1989).

Introduction

John Baylis and James J. Wirtz

Although the threat of nuclear Armageddon weighed heavily on everyone's mind during the Cold War, by the 1970s the confrontation between the United States and the Soviet Union was well organized. Alliances (the North Atlantic Treaty Organization and the Warsaw Pact) allowed both superpowers to order relations within their respective camps, preventing outbreaks of terrorism, ethnic cleansing, or even organized crime that could have diverted resources away from the Cold-War competition. If they were not formal allies, most states also could be counted as a client of one of the superpowers, which further helped to moderate international conflict. Financial or military aid to clients was based on the preferences of the superpower patron; if clients engaged in non-sanctioned initiatives, they ran the risk of being left alone to face regional competitors that still enjoyed the support of their superpower. Nuclear deterrence, which produced a situation of mutual assured destruction, moderated superpower behaviour, while arms control negotiations allowed Soviet and American policymakers at least to exchange views on their security objectives and concerns. When conflict did erupt between the competing blocs, it often occurred on 'the periphery' (e.g. Vietnam, Afghanistan), reducing the likelihood that the security of either the United States or the Soviet Union would be directly threatened.

The Cold War was extremely unpleasant, extraordinarily costly, and downright dangerous, but it presented strategists with a relatively simple problem: a political-military standoff between two competing camps. Because policymakers expected the Cold War to continue indefinitely, the conflict itself became institutionalized as both sides created bureaucracies and transnational organizations to deal with recurring problems. Strategic studies helped to channel superpower competition from outright war to more benign forms of competition, towards 'peaceful coexistence', to borrow an old Soviet phrase; strategic studies developed theories, policies, and operations that reduced the risk of war. But now that more than a decade has passed since the end of the Cold War, it is clear that the slow pace and relatively predictable nature of international relations has changed.

Everywhere one turns, international politics and military affairs seem to be in a state of flux.

A challenging set of strategic, military, arms control, technology, economic, and human rights issues have come to preoccupy policymakers in the twenty-first century. Some of these issues, for instance concerns about international terrorism, ethnic conflict, the spread of disease across borders, or the impact of new technology on the conduct of war, have been around for centuries. They now have emerged in new or more intense form. The simultaneous attacks of 11 September 2001 on the World Trade Center in New York and the Pentagon in Washington, D.C. were the worst terrorist attacks in history and demonstrated the vulnerability of even the United States to actions taken by well-organized fanatics who were prepared to commit suicide for their cause. Other problems, however, are distinctly twenty-first-century issues: the proliferation of chemical, bio-logical, and nuclear weapons might change the nature of global politics, while cyber-terrorism raises the possibility that individuals or small groups might be able to wreak enormous damage on national economies. Moreover, these issues are emerging at a time when new strategic relationships are beginning to take shape as one great power (Russia) is losing status while other centres of power (China and an increasingly united Europe) seem to be on the rise. New threats also are giving rise to new coalitions and alliances as former adversaries recalculate their common interests. Further complicating matters is the fact that these changes are now taking place before a worldwide audience drawn ever closer by globalization. People are being empowered by the information revolution. Strategists now have a dizzying array of complex and interconnected security issues to deal with, a far cry from the days when security was often measured by estimates of 'the nuclear balance of terror' between the United States and the Soviet Union.

Given this emerging global security agenda, it is surprising that some observers suggest that strategic studies has outlived its usefulness. Strategic studies was the dominant sub-field in the study of international politics from the 1950s to the 1980s. But with the easing of East–West tension in the early 1990s it came to be regarded by some as a 'Cold War subject' which was no longer relevant to the new developments in world politics. Critics have argued that the use of force is losing its utility in world politics and that attention should be shifted to new issues associated with the processes of globalization. As the conflicts that have occurred since the end of the Cold War testify, however, the role of force remains a significant feature of world politics. Strategy continues to be important in the study of international relations. This was vividly highlighted by the attacks of 11 September 2001 and the response by the United States and the coalition against international terrorism. Unlike the glacial pace of change during the Cold War, things are happening quickly in the world today. Both practitioners and students of strategy have their work cut out for them.

The purpose of this volume is to identify, update, and apply traditional concepts of strategy to an emerging security environment characterized by globalization, the infor-mation revolution, the new threats posed by international terrorism, the spread of weapons of mass destruction, and a host of ethnic and regional conflicts. All of our contributors place their consideration of today's issues in historical context by describing the intellectual, military, or political evolution of their topic. This background allows our contributors and readers to take a critical view of much of the hyperbole that surrounds

discussion of military and international affairs today. Some ideas that are touted as new, for instance, often turn out to be old concepts or even ideas discredited long ago dressed up to meet modern tastes. Many of the issues that animate strategic studies today make little sense without a knowledge of the history of what went before. For example, to understand why people today believe that air, land, or sea power is undergoing a period of revolutionary change, it helps to understand the general ideas that have shaped the use of military force during the last century. To judge which ideas might be discarded or updated to best meet current circumstances, it also helps to know the context in which they were developed.

In order to set the scene for the chapters that follow, this introduction gives answers to three questions: (1) What is strategic studies? (2) What criticisms are made of strategic studies, and (3) What is the relationship of strategic studies to security studies?

What is strategic studies?

The definitions of 'strategy' contained in Box I.1 display some common features but also significant differences. The definitions by Carl von Clausewitz, [Field Marshal] Count H. Von Moltke, B. H. Liddell Hart, and André Beaufré all focus on a fairly narrow definition which relates military force to the objectives of war. This reflects the origins of the word 'strategy' which is derived from the ancient Greek term for generalship. The definitions from Gregory Foster and Robert Osgood, however, draw attention to the broader focus on 'power', while Williamson Murray and Mark Grimslay highlight the dynamic quality of 'process' inherent in the formulation of strategy. Recently, writers have emphasized that strategy (particularly in the nuclear age) has a peacetime as well as a wartime application. Strategy embodies more than just the study of wars and military campaigns. *Strategy* is the application of military power to achieve political objectives, or more specifically, 'the theory and practice of the use, and threat of use, of organized force for political purposes' (Gray, 1999). Broader still is the concept of *Grand Strategy* which involves the co-ordination and direction of 'all the resources of a nation or a band of nations, towards the attainment of the political objectives' (Liddell Hart, 1967).

Because strategy provides the bridge between military means and political goals, students of strategy require knowledge of *both* politics and military operations. Strategy deals with the difficult problems of national policy, the areas where political, economic, psychological, and military factors overlap. There is no such a thing as purely military advice when it comes to issues of strategy. This point also has been made in a different way by Henry Kissinger who stated that 'the separation of strategy and policy can only be achieved to the detriment of both. It causes military power to become identified with the most absolute application of power and it tempts diplomacy into an over-concern with finesse' (Kissinger, 1957).

Strategy is best studied from an interdisciplinary perspective. To understand the dimensions of strategy, it is necessary to know something about politics, economics, psychology, sociology, and geography, as well as technology, force structure, and tactics.

BOX I.1 DEFINITIONS OF STRATEGY

Strategy (is) the use of engagements for the object of war.

Carl von Clausewitz

Strategy is the practical adaptation of the means placed at a general's disposal to the attainment of the object in War.

Von Moltke

Strategy is the art of distributing and applying military means to fulfill the ends of policy

Liddell Hart

Strategy is . . . the art of the dialectic of force or, more precisely, the art of the dialectic of two opposing wills using force to resolve their dispute.

André Beaufré

Strategy is ultimately about effectively exercising power.

Gregory D. Foster

Strategy is a plan of action designed in order to achieve some end; a purpose together with a system of measures for its accomplishment.

J. C. Wylie

Strategy is a process, a constant adaptation to the shifting conditions and circumstances in a world where chance, uncertainty, and ambiguity dominate.

W. Murray and M. Grimsley

Strategy must now be understood as nothing less than the overall plan for utilizing the capacity for armed coercion—in conjuction with economic, diplomatic, and psychological instruments of power—to support foreign policy most effectively by overt, covert and tacit means.

Robert Osgood

Strategy also is essentially a pragmatic and practical activity. This is summed up in Bernard Brodie's comment that 'Strategic theory is a theory of action'. It is a 'how to do it' study, a guide to accomplishing objectives and attaining them efficiently. As in many other branches of politics, the question that matters in strategy is: will the idea work? In some ways, therefore, strategic studies is 'policy relevant'. It can be an intellectual aid to official performance. At the same time, it also can be pursued as 'an idle academic pursuit for its own sake' (Brodie, 1973).

Strategic studies, however, cannot be regarded as a discipline in its own right. It is a subject with a sharp focus—the role of military power—but no clear parameters, and it relies upon arts, sciences, and social science subjects for ideas and concepts. Many of those who have made a contribution to the literature on the subject have come from very different fields. Herman Kahn was a physicist, Thomas Schelling was an economist, Albert Wholstetter was a mathematician, Henry Kissinger was a historian, and Bernard Brodie was a political scientist.

Given the different academic backgrounds of strategic thinkers, it is not surprising that strategic studies has witnessed an ongoing debate about methodology (i.e., how to study the subject). Bernard Brodie, who more than anyone else helped to establish strategic studies as a subject in the aftermath of the Second World War, initially argued that strategy should be studied 'scientifically'. He was concerned that strategy was 'not receiving the scientific treatment it deserves either in the armed services or, certainly, outside them'. In his 1949 article entitled 'Strategy as Science', Brodie called for a methodological approach to the study of strategy similar to the one adopted by economics. Strategy, he argued, should be seen as 'an instrumental science for solving practical problems'. What he wanted was a more rigorous, systematic form of analysis of strategic issues compared with the rather narrow approach to security problems adopted by the military, who were preoccupied with tactics and technology.

As Brodie himself was later to recognize, however, the enthusiasm for science, which he had helped to promote, meant that strategic studies in the 1950s 'developed a scientistic strain and overreached itself'. By the 1960s, Brodie was calling for a 'mid-course correction'. The conceptualization of strategy using economic models and theories had been taken further than he had expected. Brodie was concerned about the 'astonishing lack of political sense' and the 'ignorance of diplomatic and military history' that seemed to be evident among those writing about strategy. Brodie's worries were heeded. From the 1970s onwards, more comparative historical analysis was introduced into strategic studies.

The academic approach to the study of strategy also raised concerns about the neglect of operational military issues. For Brodie (echoing Clemenceau) strategy was too serious a business to be left to the generals. As strategic studies developed in the late 1940s, civilian analysts came to dominate the field. By the 1980s, however, there was a growing feeling that many of the civilian strategists in their university departments and academic 'think tanks' were ignoring the capabilities and limitations of military units and operations in their analyses and theorizing. For a new breed of strategists, the reality of operational issues had to be brought back into their studies. Military science had become the 'missing discipline'. Writing in 1997, Richard K. Betts suggested that 'if strategy is to integrate policy and operations, it must be devised not just by politically sensitive soldiers but by military sensitive civilians'. Just as Brodie had been concerned about the overly narrow approach of the military in 1949, so Betts was concerned that the pendulum had swung too far in the opposite direction. Civilian strategists were neglecting the military side of strategy.

This concern with operational issues helped to revive an interest among strategists with the different 'elements' or 'dimensions' of strategy. In his study *On War* Clausewitz argued that 'everything in strategy is very simple, but that does not mean that everything is very easy'. Reflecting this sentiment, Clausewitz pointed out that strategy consisted of moral, physical, mathematical, geographical, and statistical elements. Michael Howard, in a similar vein, refers to the social, logistical, operational, and technological dimensions of strategy. This notion of strategy consisting of a broad, complex, pervasive, and interpenetrating set of dimensions is explored in Colin Gray's recent study, entitled *Modern Strategy*. Gray identifies three main categories ('People and Politics'; 'Preparation for War'; and 'War Proper') and 17 dimensions of strategy. Under the heading 'People and Politics' he focuses on people, society, culture, politics, and ethics. 'Preparations for War' includes

economics and logistics, organization, military administration, information and intelligence, strategic theory and doctrine, and technology. The dimensions of 'War Proper' consist of military operations, command, geography, friction, the adversary, and time. Echoing Clausewitz, Gray argues that the study of strategy is incomplete if it is considered in the absence of any one of these (interrelated) dimensions.

Strategic studies and the classical realist tradition

What are the philosophical underpinnings or assumptions of the scholars, soldiers, and policymakers who write about strategy? Most contemporary strategists in the Western world belong to the same intellectual tradition. They share a set of assumptions about the nature of international political life, and the kind of reasoning which can best handle political-military problems. This set of assumptions is often referred to by the term 'Realism'.

Although there are differences between 'Realists', there are certain views and assumptions that most would agree upon. These can be best illustrated under the headings of human nature; anarchy and power; and international law, morality, and institutions.

Human nature

Most realists are pessimistic about human nature. Reflecting the views of philosophers like Thomas Hobbes, they see people as 'inherently destructive, selfish, competitive and aggressive'. Hobbes accepted that human beings are capable of generosity, kindness, and co-operation but the pride and egoism which is inherent in human nature means that mankind also is prone to conflict, violence, and great evil. For realist writers, one of the great tragedies of the human condition is that these destructive traits can never be eradicated. Reflecting this view, Herbert Butterfield argued that 'behind the great conflicts of mankind is a terrible human predicament which lies at the heart of the story' (in Butterfield and Wight, 1966). Thus realism is not a normative theory in the sense that it purports to offer a way to eliminate violence from the world. Instead, it offers a way to cope with the ever-present threat of conflict by the use of strategy to minimize the likelihood and severity of international violence. Realists tend to stress what they see as the harsh realities of world politics and are somewhat contemptuous of Kantian approaches that highlight the possibility of 'permanent peace'. As Gordon Harland has argued: 'Realism is a clear recognition of the limits of reason in politics: the acceptance of the fact that political realities are power realities and that power must be countered with power; that self-interest is the primary datum in the action of all groups and nations' (in Herzog, 1963). In an anarchical system power is the only currency of value when security is threatened.

Anarchy and power

Given this rather dark view of the human condition, realists tend to view international relations in similarly pessimistic terms. Conflict and war are seen as endemic in world politics and the future is likely to be much like the past. States (upon which realists focus their attention) are engaged in a relentless competitive struggle. In contrast to the way in which conflicts are dealt with in domestic society, however, the clash between states is

more difficult to resolve because there is no authoritative government to create justice and the rule of law. In the absence of world government, realists note that states have adopted a 'self-help' approach to their interests and especially their security. In other words, they reserve the right to use lethal force to achieve their objectives, a right that individuals living in civil society have given up to the state. Who wins in international relations does not depend on who is right according to some moral or legal ruling. As Thucydides demonstrated in his account of *The Peloponnesian Wars*, power determines who gets their way. In international relations, *might* makes *right*.

International law, morality, and institutions

Realists see a limited role for 'reason', law, morality, and institutions in world politics. In a domestic context, law can be an effective way for societies to deal with competing selfish interests. In an international system without effective government, states will agree to laws when it suits them, but will disregard them when their interests are threatened. When states want to break the rules, there is very little to stop them from doing it apart from countervailing force.

Similarly, realists do not believe that moral considerations can significantly constrain the behaviour of states. Some realists believe that very little attention should be given to moralizing about the state of world politics. They point to the absence of a universal moral code and to the disregard of constraining moral principles by policymakers, especially when they believe their vital interests are threatened. This is not to argue that realists are wholly insensitive to moral questions. Great realist thinkers, including Reinhold Niebuhr and Hans Morgenthau, agonized about the human condition. Most realist writers, however, attempt to explain the way the world is, rather than how it ought to be. Realists view international institutions (e.g. the United Nations or the Nuclear Non-Proliferation Treaty) in much the same light as they view law and morality. Just as law and morality are unable to constrain state behaviour significantly when important state interests are threatened, international institutions also can play only a limited role in preventing conflict. Realists do not dismiss the opportunities created by institutions for greater co-operation. They see these institutions, however, not as truly independent actors but as agents set up by states to serve their national interests. As long as they do this, the member states will support the institution, but when support for the institution threatens national interests, nations tend to abandon or ignore them. Realists point to the inability of the League of Nations in the interwar period to stop aggression, or the way the United Nations became a hostage to the Cold War as evidence of the limited utility of these organizations When it really mattered, international institutions could not act against the interests of their member states.

What criticisms are made of strategic studies?

Although the shared philosophical underpinnings of strategists have helped to give the subject intellectual coherence, many realist assumptions have been subjected to fierce criticism. This critique has been discussed in detail elsewhere (Gray, 1982), but our purpose here is to give a flavour of the concerns expressed by critics of strategic studies. Strategists are said to be:

- obsessed with conflict and force;
- insufficiently concerned with ethical issues;
- not scholarly in their approach;
- part of the problem, not the solution;
- state-centric.

Many critics argue that because strategists focus on the role of military power, they tend to be preoccupied by violence and war. Because their view of the world is conflict oriented they tend to ignore the more co-operative, peaceful aspects of world politics. This leads critics to claim that strategists have a distorted, rather than a realistic, view of the world. Some critics even suggest that strategists are fascinated by violence, and even take grim satisfaction in describing the darker side of the human condition.

For their part, strategists accept that they are interested in violence and conflict. In their own defence, however, they point out that just as a doctor of heart disease does not claim to deal with all aspects of health, so they do not claim to be studying every aspect of international relations. They reject the notion that they have a distorted view of the world, and that they are fascinated, in an 'unhealthy' sense, by violence.

The claim to moral neutrality, sometimes made by strategists, is another shortcoming identified by critics. Strategists are depicted as clinical, cool, and unemotional in the way they approach the study of war, despite the fact that, in the nuclear age, millions of lives are at risk in the calculations that take place about strategic policies. Emphasizing the moral outrage felt by some, J. R. Newman described Herman Kahn's book, *On Thermonuclear War*, as 'a moral tract on mass murder, how to commit it, how to get away with it, how to justify it'. Philip Green, in his study of *Deadly Logic* (1966), also accused strategists who wrote about nuclear deterrence as being 'egregiously guilty of avoiding the moral issue altogether, or misrepresenting it'.

Although many strategists have justified the moral neutrality of their approach in terms of scholarly detachment, some have been sensitive to this criticism. As a result, a number of studies of ethical issues have been written. These include Joseph Nye's book on *Nuclear Ethics*, Michael Walzer's *Just and Unjust Wars* and Steven P. Lee's study of *Morality, Prudence and Nuclear Weapons*. These books (together with the moral critical studies by writers like Green) now form an important part of the literature on strategic studies.

Another important criticism levelled against strategic studies is that it represents 'a fundamental challenge to the values of liberal, humane scholarship, that define a University'. The implication is that it is not a scholarly subject and should not be taught at a

university. This criticism has a number of related parts. First, according to Philip Green, it is pseudo-scientific, using apparent scientific method to give it a spurious air of legitimacy. Second, because strategists often advise governments on a paid basis they are operating 'in a manner incompatible with the integrity of scholarship'. E. P. Thornton described the cosy relationship between strategists and government officials as 'suspect, corrupt and at enmity with the universal principles of humane scholarship' (E. P. Thornton, 1981). Third, critics charge that not only do strategists provide advice to governments, they are also involved in policy advocacy—which is not part of scholarship. Critics claim that strategists are an appendage of government and spend their time either providing advice on how to achieve policies or justifying dubious international objectives.

With a qualification on the issue of policy advocacy, strategists reject the view that their subject should not be found in a university. (See Box I.2.) They would argue that war cannot be made to disappear simply by ignoring it (Leon Trotsky, a leading figure in the Bolshevik revolution, put it best: 'You might not have an interest in war, but war has an interest in you'). They argue that war and peace are issues of profound importance that can, and should be, studied in a scholarly way. There have been attempts at developing a 'scientific' approach to strategy (and, as Brodie recognized, some writers might have taken this too far) but the debate about methodology is not confined to strategic studies. The nature of 'science' in a social science context remains a lively, ongoing debate.

In general, strategists recognize the dangers of developing too cosy a relationship with officials when they advise governments on a paid basis. Like many other experts, (e.g. economists), however, they see no necessary inconsistency between scholarship and advice. Because it is a practical subject, there are some benefits from analysing strategic issues at close hand, provided that a 'detached' approach is adopted. Policy advocacy, however, is a different matter. Some strategists do drift into the realm of advocating specific policies, but when they do so they slowly but surely lose their credibility. People who make a career out of arguing for the adoption of specific policies or weapons systems gain a reputation for knowing the 'answer' regardless of the question that is posed.

Another forceful criticism of strategic studies is that it is part of the problem, not the solution. What opponents mean by this is that the Clausewitzian perspective of strategists, which sees military power as a legitimate instrument of policy, helps to perpetuate a particular mindset among national leaders and the public which encourages the use of force. It is this realist thinking, critics argue, which lies behind the development of theories of deterrence, limited war, and crisis management which were so dangerous during the Cold War. Anatol Rapoport is one writer who charges strategists with a direct responsibility for promoting a framework of thinking about security which is largely hostile to what he regards as the proper solution to global conflict, namely disarmament. In a stinging attack he argues that 'the most formidable obstacles to disarmament are created by the strategists who place their strategic considerations above the needs of humanity as a whole, and who create or help maintain an intellectual climate in which disarmament appears to be unrealistic' (A. Rapoport, 1965). Instead of spending their time thinking about how better to justify and conduct mass murder, critics suggest that strategists should spend their time devising disarmament strategies, co-operative security arrangements, and global campaigns to denounce violence.

Linked to this criticism is the view that because strategists are so pessimistic about

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BOX 1.2 STRATEGIC STUDIES IN THE ACADEMY

The study of strategy in Universities may be defended on several different, yet complementary, grounds. In strictly academic terms, the subject poses sufficient intellectual challenge as to merit inclusion in, or even as, a course of study fully adequate to stretch mental resources. In, and of itself, that argument is sufficient to justify the inclusion of strategic studies in University curricula, but one can, and should, proceed to argue that the study of strategy is socially useful. . . . Many views are defensible concerning the proper and appropriate duties of a university. This author chooses a liberal, permissive perspective. He sees value in a field of study that seeks truth and may have relevance to contemporary policy and, as a consequence, may contribute to the general well-being.

C. S. Gray

In strategic studies the ability to argue logically and to follow a piece of strategic reasoning is very important, but even more important is the elusive, almost indefinable quality of political judgement which enables a man to evaluate a piece of analysis and locate it in a wider political framework.

J. C. Garnett

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human nature and the chances of significant improvements in the conduct of international politics, they *ignore the opportunities that exist for peaceful change*. It is suggested that to see the past as a history of constant conflict and to suggest that the future will be the same is to help create a fatalistic impression that plans for human progress will always fail. By emphasizing mistrust, self-help, and the importance of military power in an anarchic international system, their advice becomes self-fulfilling. In other words, if policymakers take strategists' advice to heart, deterrent threats and defence preparations would lead to a spiral of hostility and mistrust as leaders respond to the defence policies of their competitors. Given this 'socially constructed' view of the world, it is not surprising that states will constantly find themselves in conflict with each other.

Once again, strategists vigorously contest these criticisms. They argue that their ideas reflect (rather than create) the 'reality' of world politics. The fact that most policymakers and elected officials tend to share their 'realist' assumptions is due to an intellectual climate 'socially constructed' not by academic strategists but by the challenges and threats presented to them by international relations. The notion that strategic studies as a subject is 'a monstrous crime committed by self-interested strategists against the general public' is seen as absurd. Of course, throughout history, various observers have championed war as a preferred instrument of statecraft. Often they depict war in romantic or heroic terms; today's romantic image of war is simply a slightly more technologically embellished version of this traditional imagery. Enthusiasts see war as a relatively bloodless contest in which technically adept professionals use their superior skills and equipment to paralyse the opponent's military command, leading to quick and humane victories. Strategic studies, however, stands as a major impediment to those who claim to have found a quick and easy path to guaranteed victory. Because they recognize the true nature of war, most strategists consider armed conflict to be a tragedy, an activity unfit for human beings, and one that must be limited to the greatest extent possible.

On the question of 'peaceful change', strategists do not dismiss the fact that there are opportunities for periods of peaceful coexistence. They are, however, very sceptical about the prospects for 'perpetual peace' based on a radical transformation of world politics. They believe that conflict can be mitigated through effective strategy, but it is highly unlikely that it can be transcended completely. In such a context it is impossible to abolish the need for strategic studies.

The fact that strategists focus on the task of creating effective national strategies or international initiatives creates the basis for another criticism of the enterprise. Strategic studies incorporates a state-centric approach to world politics. According to this critique, strategists are so preoccupied by threats to the interests of states that they ignore security issues within the state. Many observers argue that the state is not the most appropriate referent for studying security. Rather, attention should be focused on the individual whose security is often threatened, rather than protected by the state. Other writers, who perceive the growing erosion of the state, prefer to focus on 'societal security' or even 'global security' issues.

Strategists would argue that while they have stressed the role of the state, they have not neglected intra-state conflict. Clausewitz himself dealt with 'people's war' and a considerable part of the strategic studies literature addresses revolutionary warfare. As wars of national disintegration (Bosnia, Kosovo, Chechnya) have become more prevalent, more attention has been given in the literature to the problem of ethnic conflict. Despite the prevalence of intra-state violence or the rise of important non-state actors, strategists continue to argue that even with all the current challenges to the modern state, it continues to be the major actor in world politics. Strategists offer no apologies for their continuing interest in issues of state security.

What is the relationship between strategic studies and security studies?

One of the main challenges to strategic studies since the end of the Cold War has come from those who argue that attention should be shifted away from the study of strategy to the study of security. According to this view 'security', defined in terms of 'freedom from threats to core values', is a more appropriate concept for analysis in the world at present. The problem with strategy, it is argued, is that it is too narrow and increasingly less relevant at a time when major wars are declining and threats to political, economic, social, and environmental security interests are increasing. Because it is defined more broadly, security is depicted as more valuable than strategy as an organizing framework for understanding the complex, multi-dimensional risks of today.

However, as Richard Betts noted in his article, 'Should strategic studies survive?', those who champion new definitions of security run two risks. First, Betts noted that even though it is appropriate to distinguish between 'strategy' and 'security' studies, security policy requires careful attention to war and strategy. In other words, military power

remains a crucial part of security and those who ignore war to concentrate on non-military threats to security do so at their peril. Second, he argued that 'expansive military threats to security quickly become synonymous with "interest" and "well-being", do definitions of security quickly become synonymous with "interest" and "well-being", do not exclude anything in international relations or foreign policy, and this becomes indistinguishable from those fields or other sub-fields'. In other words, by including potentially everything that might negatively affect human affairs, security studies creates the risk of being too broad to be of any practical value.

The contributors to this book recognize the importance of security studies while at the same time sharing these concerns about the coherence of the field. 'Strategy' remains a distinctive and valuable area of academic study. Strategy is part of security studies, just as security studies is part of International Relations, which itself is part of Political Science. This relationship is expressed in Figure I.1.

Despite all of the changes that have occurred in world politics since the late 1980s, there is in many respects an underlying continuity with earlier eras. The euphoria produced by the hope that a fundamental transformation of international relations was under way, has proved to be ill-founded. As we have seen from the Gulf war, Bosnia, Kosovo, Chechnya, mass-casualty terrorism, and the response to it, force and military power continue to be an important currency in the international system at the beginning of the twenty-first century. Certainly important changes are taking place in world politics, associated with the twin forces of globalization and fragmentation, and wars between the great powers, for the moment at least, have slipped into the background. The sad fact remains, however, that the utilization of military power as an instrument of political purpose and, therefore, strategic studies, remain just as relevant today as in the past.

Our exploration of strategy in the contemporary world is divided into three sections. In Part One, our contributors describe the enduring issues that animate the study of strategy. Our study opens with an essay on the evolution of strategy, describing the intellectual history of the way humans have tried to cope with the possibility that military force might be used to achieve political objectives. Part One also describes thinking about the causes of war, a complex issue that ultimately shapes approaches to mitigating interstate violence. The issue of morality and war is also addressed. Despite popular imagery,
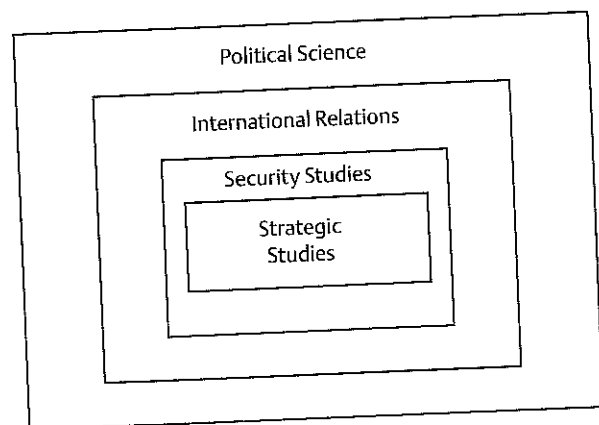
legal and moral considerations play a role in shaping both the recourse to and the conduct of war. These chapters are important because they illustrate the normative basis for strategy: to help to mitigate both the occurrence of and the death and destruction produced by war.

In Part Two, our authors trace the evolution of the theory, technology, and practice of war on land, at sea, and in the air. The chapters highlight the particular challenges and opportunities created by war in each of these environments and the intellectual and organizational traditions that have shaped how states and militaries try to exercise land, sea, and air power. They show how wars have helped shape strategic thinking, often by demonstrating that prewar doctrines and plans were disastrously out of step with battlefield realities. They also explore how the information and computer revolution is affecting the way future war is likely to be conducted. Part Two is important because it illustrates how the requirements for fighting in these different environments act as constraints on what states can hope to achieve by fighting on land, at sea, and in the air.

In Part Three, our contributors explore a number of issues which dominated the main strategic debates during the Cold War, namely deterrence, arms control and disarmament, and terrorism. The aim is to investigate the theoretical bases of these approaches to peace and security and to consider how they need to be up-dated to deal with the evolving changes of the post-Cold War period. In Part Four, our authors explore issues that appear in today's headlines and that animate the contemporary strategic debate. Peacekeeping and humanitarian intervention pose unique problems for military forces and seem to be on the rise now that the stability produced by the Cold War is fading. The role of nuclear weapons and strategy also seems to be ready for a reappraisal as the proliferation of nuclear, chemical, and biological weapons continues. Similarly, it is important to consider the complex challenge posed by the spread of weapons of mass destruction even to non-state actors. Part Four also describes new security issues, for example the environment, resource scarcity, migration, disease, that populate national agendas, and what role strategy and military organizations can play in responding to these threats. There is also discussion in this section of the 'revolution in military affairs' (RMA) and how it is likely to transform terrestrial, space, and virtual warfare.

The conclusion provides an overview of contemporary strategy not by summarizing the findings of each of our contributors, but by describing the evolution of strategy over the last one hundred years and the prospects for strategy and strategists in the new century.

Figure I.1

GUIDE TO FURTHER READING

For a useful account of the nature and development of strategic studies see J. C. Garnett, 'Strategic Studies and its Assumptions', in John Baylis, Ken Booth, John Garnett, and Phil Williams, *Contemporary Strategy: Theories & Policies* (London: Croom Helm, 1975) and John S. Gray, *Strategic Studies: A Critical Assessment* (London: Aldwych Press, 1982). See also William Murray, Macgregor Knox, and Alvin Bernstein, eds., *The Making of Strategy: Rulers, States and War* (Cambridge: Cambridge University Press, 1994) for a good historical view of strategy.

Other useful studies include B. H. Liddell Hart, *Strategy: The Indirect Approach* (London:

Faber & Faber, 1967); R. E. Osgood, *NATO: The Entangling Alliance* (Chicago: University of Chicago Press, 1962); B. Brodie, *War and Politics* (London: Cassell, 1973); André Beaufré, *An Introduction to Strategy* (London: Faber, 1965) and *Deterrence and Strategy* (London: Faber & Faber, 1965); A. Herzog *The War–Peace Establishment* (London: Harper & Row, 1963); H. A. Kissinger, *Nuclear Weapons and Foreign Policy* (New York: Harper & Row, 1957); H. Kahn, *On Thermonuclear War* (Princeton, N.J.: Princeton University Press, 1960); R. Niebuhr, *Moral Man and Immoral Society* (London: Charles Scribner's Sons, 1932); Michael Howard, *War in European History* (Oxford: Oxford University Press, 1976); and C. S. Gray, *Modern Strategy* (Oxford: Oxford University Press, 1999).

For criticisms of strategic studies see P. Green, *Deadly Logic* (Ohio: Ohio State University Press, 1966) and J. R Newman, Review in *Scientific American*, Vol. CCIV, No. 3 (1961).

Other useful studies include H. Butterfield and M. Wight, *Diplomatic Investigations* (London: Allen & Unwin, 1966): E. P. Thornton, 'A Letter to America', *The Nation*, Vol. 232, 24 January 1981; A. Rapoport, 'The Sources of Anguish', *Bulletin of Atomic Scientists*, Vol. 21, No. 10, December 1965; and R. K. Betts, 'Should Strategic Studies survive?', *World Politics*, Vol. 50, No. 1, October 1997.

PART ONE

Enduring Issues of Strategy
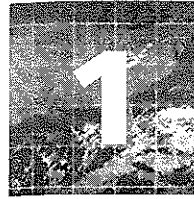
1 Strategic Theory and the History of War

Daniel Moran

READER'S GUIDE

This chapter surveys the development of strategic theory from its emergence in the seventeenth century through the era of the world wars. Although the focus is on ideas, some account is also taken of the changing historical circumstances against which strategic thought has unfolded. The goal of theory in any field is to improve our understanding of reality, and our ability to act effectively. In the case of strategic theory, the interaction between thought and action is especially intimate, because war is such an unforgiving enterprise, and because, until recently, serious thinking about how war should be conducted has been confined mostly to those responsible for its organization. Before the advent of nuclear weapons, military theory was almost exclusively the concern of practitioners. Most have proceeded by way of historical inference, scrutinizing recent (and occasionally remote) experience in search of an underlying logic capable of explaining battlefield events. The result is a body of work displaying substantial intellectual continuity, despite much intervening technological and social change; but one whose basic outlook would eventually be called into question by the introduction of nuclear weapons on the one hand, and by the rising prominence of guerrilla insurgency, terrorism, and other forms of irregular warfare on the other.

Introduction: The organization of violence

Strategic theory is the branch of **social theory** concerned with the use of force to achieve the goals of one community in conflict with others. It explores how to employ armed forces to advance political, social, economic, cultural, or ideological interests. War's **instrumental** nature—its logical and practical subordination to objectives outside itself—is in theoretical terms its most important characteristic. The first step in strategic analysis, as Napoleon said, is to ask 'What is the war about?' In the absence of an answer—or, alternatively, if the proposed answer is 'Nothing'— war becomes mindless bloodshed that can only be discussed in technical terms. It is because war is an organized social enterprise that **strategy**, which is the calculated application of collective violence for some ulterior purpose, becomes both possible and necessary.

The most famous assertion of war's status as a means occurs in Carl von Clausewitz's *On War*, where war is identified as 'a political instrument, a continuation of political activity by other means'; politics being defined elsewhere in the same work as the 'trustee' and 'representative of all the interests of the community'.[1] Clausewitz's originality as a theorist, however, derives not from his identification of war as a political instrument, but rather from his insistence that politics permeates all levels of military action. In itself the notion that war is a function of politics was already commonplace, as symbolized by the practice, popularized by Cardinal Richelieu (1585–1642), of casting the words *Ultima Ratio*—'the final argument'—into the barrels of cannon. This view of war as 'the final argument of kings' has predominated throughout the modern era.

Once it has been accepted as an adjunct of politics, however, war often is relegated to the margins of political theory. War does not loom large in the work of John Locke, or Montesquieu, or David Hume, or John Stuart Mill, or (with some qualification) Karl Marx. On the contrary, the dominant issue in Western political thought has always been how to organize and legitimize power within communities. That such communities would fight with each other was obvious but difficult to grasp analytically, because the contest was so chaotic. Most writers were content to follow Locke (and Thomas Hobbes before him) in envisioning the international arena as akin to the state of nature, lacking, in Locke's parlance, a 'common judge' whose authority was recognized by everyone. War served as a place-holder for the missing judge. At the same time, war's cruel and arbitrary character illustrated what life outside organized politics was like. When Clausewitz wrote in the 1820s that the natural element of war was chance, he was to some extent echoing a well-established understanding of where war fitted into the larger scheme of things.

The reasons why governments and individuals might venture into the chaos of war have always been subject to moral scrutiny. The literature on the justice of war, and justice in war, is more extensive and more impressive intellectually than writings on the conduct of war. Such concerns have impinged but little upon strategic theory, not because military theorists are necessarily indifferent to humanity, but because such external forces lie beyond the scope of their work.

Napoleon's question, however useful as a starting point, is deceptive in suggesting that, once war's purposes have been identified, its reality becomes easier to grasp. This is only marginally true. Compare with it, for instance, the question 'What is *Hamlet* about?' A

reasonably direct reply to this question—revenge, maybe, or perhaps betrayal—will only strike anyone familiar with Shakespeare's play as naive. Knowing that Hamlet feels betrayed and is bent upon revenge is inadequate to explain the complexity of his behaviour. Hamlet's actions and fate are determined by psychological and cultural forces that are remote from his conscious purposes, and beyond his cognitive reach.

In the end, the question 'What is *Hamlet* about?' is more likely to inspire an impatient demur than a firm answer. War is much the same, decidedly so in the case of protracted conflicts that affect society as a whole. As in *Hamlet*, most of what happens in war is driven by **unique or contingent circumstances**: cultural or institutional preferences, economic resources, geographic facts, or ethnic animosities, many of which are poorly understood even by the participants. The ability of theory to explain or incorporate such influences is limited. A belligerent's strategy typically arises directly from its military capabilities, refracted by habit: as often as not, you just do what you can, regardless of what course of action may be deemed optimal in principle.

Still, the impact of theory upon practice has not been negligible. The contemporary armies of China, France, Brazil, Egypt, and the United States resemble each other more than they do the armies of their ancestors because, despite cultural differences, they share a common understanding of the basic character and use of military force. That understanding is rooted in intellectual developments that occurred in Europe and America over the last three hundred years.

The force structures, weapons systems, and fighting methods of good armies in the seventeenth century—the period when the systematic study of war first gains importance—were markedly more diverse and idiosyncratic than they would be later on. A number of factors contributed to their eventual convergence, including the development of new technologies, and the progressive social and economic integration of Europe (and, eventually, of its colonial hinterlands). The exemplary achievements of France during the Revolutionary and Napoleonic wars (1792–1815) and of Prussia during the wars of German unification (1866–71) established models of military excellence for others to emulate. By the late 1800s, the soldiers of the leading powers were already learning to think about war along similar lines. The profession of arms had come to involve not just personal courage and the right social position, but distinctive intellectual preparation.

KEY POINTS

- Strategic theory is concerned with the use of force to advance or defend communal interests.
- War's most important characteristic, from the perspective of strategic theory, is its instrumental nature.
- Modern armies tend to resemble each other in part because they share a common intellectual outlook, based upon Western theoretical models.

The Art of War in the Age of Reason

By the turn of the twentieth century, Western armies had arrived at a **common strategic vision** that would endure until after the Second World War. All sought the same basic end: to **concentrate strong forces against weaker ones,** by exploiting favourable terrain, or by striking the enemy at a place where they were inherently (or inadvertently) weak, or at a time when they were poorly prepared.

Such possibilities were thought to exist even between well-matched opponents because everything that fights on land, from the individual soldier to the army of which he is a part, is stronger on its front than on its flanks and rear; stronger when it has its feet under it than when it is moving to a new position; and dependent upon logistical and communications links that grow more vulnerable and less efficient in proportion to their length. Strategy was essentially a search for advantage among these facts. It was recognized that, given the firepower of modern armies, plus the fact that all of them operated according to similar methods, the likely result of combat between them was **stalemate,** or perhaps some modest territorial gain should one side manage to drive back the other. True victory, capable of deciding great political questions, however, required that the enemy's forces be not just repelled or reduced, but destroyed. Achieving this sort of success was a matter of high professional skill, to which civilians could make no contribution, either as political overseers, or as irregular combatants. This strategic consensus derived from a systematic study of war that began in the wake of the early-modern **scientific revolution.** War had, of course, been a subject of intense reflection long before then. Any number of works handed down from antiquity—the *Iliad* of Homer, the histories of Thucydides, Tacitus, and Josephus, Caesar's *Commentaries*—had treated war with much insight. Yet the aim was not to develop a generalized understanding of how war should be conducted, but to commemorate great events, and inspire courage and virtue.

In antiquity and the Middle Ages, war was studied in historical terms, and as a craft, in which excellence was a matter of practice and direct instruction. Military handbooks and doctrinal works existed, but they were empirical and antiquarian in character. The only one to survive intact into modern times, *Epitoma rei militaris* by the fourth-century Roman writer Vegetius, was a summary of traditional practices in such matters as drill, fortifications, discipline, and military administration. Vegetius' work was still being read by soldiers a thousand years later, which may well justify its description, in the most recent *Encyclopaedia Britannica,* as 'perhaps the most influential military treatise in the Western world'. Its longevity, however, is a tribute less to its brilliance than to the absence of intellectual competition. Even Machiavelli's *The Art of War* (1521), the most famous book on war produced during the Renaissance, is an attempt to recapture the wisdom of the ancients.

Thereafter, however, a new military literature would arise whose central impulse was **analytic** and **systematic**, rather than descriptive. A variety of cultural influences helped bring this about, above all the increasing prestige of natural science as the pre-eminent form of human knowledge. If nature would yield up its secrets to disciplined enquiry, based upon a combination of close observation and logical reasoning, there was no reason why human affairs should not do so as well. Viewed in this light war,

along with politics, economics, and law, might become something like a scientific enterprise.

This new intellectual orientation was given an additional push, in the military sphere, by institutional changes known collectively as the **'military revolution'**. Its components included the displacement of cavalry by infantry as the most important formation on the battlefield; the introduction of firearms; the development of fortifications capable of withstanding prolonged bombardment by artillery; and, above all, the establishment of standing armies much larger than the feudal levies, urban militias, and mercenary bands of the past. Waging war with such tools required more than courage, common sense, and a firm seat on a horse. Some theory of how to proceed was required, and it was the generals of the new-model armies who would provide it.

One of the first to attempt a systematic account of how to fight in the new conditions was **Raimondo de Montecuccoli** (1609–80), a field marshal of the Austrian Habsburgs renowned for his skill at manoeuvring troops in the field.[2] As is usually the case in writing about warfare, Montecuccoli's views on issues such as the best ratio of pikes to muskets, the proper way to organize a march, or the maximum practicable size for a field army (50,000 men, already a low number when he was writing) have lost their interest except to specialists. It is rather the general structure of his ideas that has exerted enduring influence.

In his own day, Montecuccoli was known for having declared that the sole objective of war was **'victory'**—a seemingly unexceptionable claim, but a challenging one at the time, because it elevated an illusive military abstraction above traditional, socially defined concerns with honour, glory, plunder, and prestige. Montecuccoli did not offer a categorical definition of what victory entailed, though he accepted that 'all possible means' might be employed to achieve it. He also was insistent, at a time when no government possessed anything like a general staff or a military budget, that victory required intense planning and preparation, and huge sums of money.

Montecuccoli, drawing on recent work in international law, was the first military writer to draw a systematic distinction between **offensive and defensive operations**, and between **international and civil war.** The latter contrast has proven especially critical, since, until quite recently, strategic theory has been concerned with international conflict, while taking undue comfort in the notion that other applications of military force must follow the same patterns.[3] Montecuccoli's dismissal of internal war as a subject for analysis represented a radical simplification of reality. The Europe in which he lived had for over a century witnessed a continuous and debilitating struggle for pre-eminence between the French monarchy and the Habsburg empire. This rivalry had involved civil wars, peasant uprisings, and religious strife of every description. Montecuccoli wrote not to capture this reality, but to overcome it. The goal of theory, for him and nearly all his successors, was not to systematize the full range of forms that social conflict might take, but to cut through them, and so, by exerting intellectual mastery, to achieve better practical control. Strategy would be the box within which the violence of war could be contained.

Most of Montecuccoli's work is taken up by operational maxims, expressed in an aphoristic style that would be much imitated as the appropriate way to report the results of scientific inquiry. True knowledge, it seemed, took the form of ideas sufficiently simple

to be expressed in a few sentences. This desire for **simplicity** is understandable. Despite its self-confident didacticism, the new military theory could not conceal the enormous difficulty involved in assembling, moving, and feeding a modern army, whose mobility had not improved in proportion to its size (and would not for another century or more). It was in understanding the motions of bodies in space that contemporary science, from Galileo to Newton, had achieved its greatest triumphs. Military theorists conceived their own problems in similar terms.

The proposition that the secret of military success lay in mastering the laws of motion and the rules of geometry received telling expression in the work of a man best remembered for making the movement of armies more difficult: **Sébastien Le Prestre de Vauban** (1643–1715). Vauban was chief military engineer to Louis XIV, and the person responsible for laying out the fortress system that still guarded France's eastern frontier in 1914.[4] Vauban's fortresses were examples of what are sometimes called 'star bastions' (or '*traces italiennes*', after the country in which they first appeared). Their outstanding feature is an intricate profusion of arrow-head-like structures protruding progressively from a central core. Star bastions had replaced the curtain-walled castles of the Middle Ages because they were equally resistant to artillery and to attack by storm. The key, however, was precision in design. In the old days, the only thing that mattered about a castle's walls was that they be high and thick. In modern fortresses, the complex angles of the walls, required to deflect the penetrating round shot of cannon, and the overlapping fields of fire created by the intricate tracery of salients, traverses, ditches, glacis, ravelins, and outworks, were all matters of exact mathematical calculation, in which tactical issues were resolved, quite literally, into engineering problems.

The same approach applied to the attack, where everything depended on the methodical elaboration of saps and entrenchments which, if properly done, would eventually put the assailant in position to batter through a chosen spot while suffering minimal casualties. All of this was expounded in Vauban's work, which acquired enormous reputation, despite its technical character, because sieges were the characteristic military operations of that time and because modern siegecraft exemplified a **disciplined** approach to fighting that contemporary commanders longed to apply to the operations of armies in the field. If those operations could be reduced to a similar system of linear relationships and orderly procedures, war itself might become something like engineering. The need for actual violence would be reduced, and replaced by patterns of manœuvre whose import would be apparent to both sides. Not for the last time, there were some who imagined that, if war could be subsumed within some mutually transparent strategic rationality, it would cease to be necessary at all. Strategy would not merely organize the violence of war. It would replace it.[5]

Military writing in the eighteenth century attempted to apply the algebraic reasoning of siegecraft to the conduct of **manœuvre warfare**. This proved to be a futile exercise. Even the awkward, slow-moving armies of the Old Regime were too full of life to be treated like bricks and mortar. Yet it produced insights of enduring importance. One revelation had to do with the synergistic effects of **weapons**. Armies of that era comprised infantry, artillery, and cavalry, each of which had strengths and weaknesses in relation to the others. Each was raised and trained separately from the rest owing primarily to the prerogatives of an aristocratic officer corps and the weakness of state finances; this

tendency remained a major barrier to military efficiency. The three 'arms' moved at different speeds, and were desperately vulnerable if forced to fight alone against the combined arms of the enemy. Bringing all three together to good effect was a vexing problem, which was solved by the development of new military formations, later called corps and divisions, in which all arms were combined in a single, integrated body large enough to operate alone for extended periods.

This new force structure also eased the logistical difficulties involved in keeping a large, concentrated force supplied. An army subdivided into units small enough to live off the territory through which it passed possessed a fundamental advantage over one tied to pre-positioned depots by an endless chain of wagons. Once such independent movements had been mastered, new forms for converging attack became possible, as detached formations moved toward the same battlefield—no easy thing given the military communications of the day, but the wave of the future none the less.

It also was recognized that, among all the imaginary lines of movement and position that might be drawn on a military map, the most critical was the one extending from an army to what would now be called its '**base**', the rear area on which it relied for supplies, information, and reinforcements. Because the army itself was the chief means for defending the base, movement away from it—that is, toward the enemy—was fraught with peril, which was perceived to grow not simply with distance, but also as the angle formed by the line of the base and the line of advance changed. Contemplation of this geometry led some to think they knew, within a few degrees of arc, the moment at which prudence gave way to folly and danger. Equally spurious was the related supposition that disrupting an adversary's **communications** was synonymous with defeating his army. There is no question, however, that the new emphasis on operations directed against the enemy's rear was of permanent importance.

From the study of siegecraft soldiers also gained new insight into the nature of victory: that its central characteristic was not destruction, but **disruption**. A bastion falls not because every brick is torn down, but because its structural integrity has been shattered. 'It is the same with strategy as with the siege of fortresses,' the young Napoleon once observed. 'Concentrate fire on a single point: when the breach is made the equilibrium is broken; all the rest becomes useless.'[6] From there, it is but a small step to Clausewitz's still more comprehensive observation, that in war 'minor successes help bring about major ones.'[7]

The climactic figure of this rationalist strategic tradition was **Antoine-Henri de Jomini**.[8] In biographical terms Jomini was a man of another time. He was born in Switzerland in 1779, served as a staff officer in Napoleon's armies, and later rose to the rank of general in the Russian service. His personal military experience thus transcended that of the Old Regime; and so did his writings, at least superficially.

Jomini was the pre-eminent interpreter of **Napoleonic warfare**, in which incremental military innovations in tactics, gun founding, logistics, and map-making, combined with the social and political dynamism of the French Revolution to instil European warfare with a *decisiveness* it had not previously possessed. Until the last years of his rule, Napoleon's armies were not remarkably larger than those of the past; his most brilliant campaign, culminating in the Battle of Austerlitz in 1805, was accomplished with a total force of about 200,000 men, of whom 75,000 were present at the final battle. Nor were his

battles bloodier, if one reckons according to a soldier's chance of becoming a casualty. Napoleon's battles were decidedly more **numerous**, however, and more **consequential**. It was this above all that impressed observers.

The increasing frequency with which Napoleon's armies were able to fight was a result of the revolutionary mobilization of French society, which included the introduction of universal **conscription**, a democratic innovation that France's conservative opponents were loath to adopt. The continuous flow of replacements lowered the risks of pitched battle. One reason these had been rare among the professional armies of the Old Regime was the difficulty of replacing losses. Napoleon's battles also counted for more than those of the past because they were conducted, at the tactical level, in ways designed to destroy the adversary's organizational cohesion and prevent further resistance. Eighteenth-century battles were as violent as any in history, but they did not decide the wars in which they occurred, because the armies of that day were too brittle to risk the ruthless pursuit in which Napoleon specialized. The great battles of the Seven Years War (1756–63) all took place during its first four years; whereas the war itself was finally brought to an end by the exhaustion of all concerned. The war of which Austerlitz was a part, in contrast, ended three weeks later, a tantalizing example of **strategic efficiency** from which, it was hoped, much could be learned.

Jomini attributed Napoleon's success to his superior grasp of a small number of timeless principles. In so doing, he assimilated the Emperor's unnerving career to a familiar intellectual structure. The emphasis on geometry by earlier writers was rendered more flexible and realistic through concentration on the **reciprocal interactions** of opposing armies rather than geographic objectives or terrain features. War was not won by holding ground deemed important, Jomini declared, but by beating the opponent in the field. Although manoeuvre remained the key to victory, its goal was not to substitute for fighting, but to bring it about. Jomini stressed the inherent superiority of the **offensive**, and the importance of seizing the initiative and dominating the enemy. He also identified the need for deception and surprise, and for energetically pursuing a beaten foe. Above all, he insisted that the acme of strategic excellence lay in concentrating superior forces against what he called **'the decisive point'**, with the goal of destroying the enemy army.

It is not always easy, given Jomini's stress upon energetic and aggressive conduct, to recognize his work for what it was: a **conservative** synthesis well suited to the needs of a post-Revolutionary international order that, far from wishing to reanimate the ghost of Napoleon, longed to get the genie of war back into the bottle of professional strategy. In practice, Jomini's ideas made the conduct of decisive military operations terribly difficult. His emphasis on concentrated forces, methodical planning, and secure communications, made the other things he admired—offensive operations, cunning manoeuvre, vigorous pursuit—almost impossible. He himself believed his ideas were best suited to small, well-trained professional armies, the kind of army industrial technology would soon make obsolete. Jomini, who died in 1869, at the age of 90, lived to see the onset of this shift. Yet he remained insistent that the basic **principles of war** exemplified by Napoleon, and codified by Jomini himself, would survive all technological change—a point of view that has been thoroughly vindicated by events. All good armies today profess to base their doctrine and operational methods upon 'principles of war' similar to those Jomini identified (see Box 1.1).

BOX 1.1 JOMINI: PRINCIPLES OF WAR

The fundamental principle upon which every military combination rests, is to operate with the greatest mass of forces, a combined effort, upon a decisive point. The methods of applying this maxim are not numerous; let us endeavor to point them out.

The first measure is to take the initiative . . . The general who takes the initiative knows what he is to do. He conceals his march, surprises and overwhelms one extremity or a feeble part of his adversary's lines. He who awaits the attack is beaten upon one of his points even before he may be informed of the attack.

The second measure is to direct our movement against the most advantageous feeble part. The choice of that feeble part depends upon the position of the enemy. The most important point will always be the one whose occupation will ensure us the most favorable opportunities and results; for example, positions that tend to give us control of the enemy's communications with his base of operations, or to throw him back upon an insurmountable obstacle, such as a sea, a great river without a bridge, or the territory of a strong neutral power.

In order to operate a combined effort with a strong mass upon a single point, it is important, in conducting the strategic movement, to hold our forces concentrated upon a space nearly square, that they may be more disposable . . .

It is most important, when we take the initiative of a decisive movement, that we should be careful to perfectly inform ourselves of the positions of the enemy and of the movements he can make . . .

It is of the greatest importance that the combined attack of all our forces be simultaneous. It is not the masses present that decide a battle, but those which are brought into action . . .

If the art of war consists in concentrating a superior effort, with a mass against weak portions, it is most indispensably necessary to follow up closely a beaten enemy. The strength of an army consists in its organization, in the unity resulting from the connection of all the several parts with the head or the central power. After a defeat this unity or oneness no longer exists . . . The entire army becomes weak, and [a subsequent] attack upon it is almost certain triumph.

To render the superior shock of a mass attack decisive, it is equally necessary for a general to bestow the same care upon the morale of his army. Of what use is it to bring into action fifty thousand men against twenty thousand, if they lack the impulsion necessary to rush upon and overthrow the enemy? . . . All troops are brave when their leader sets the example [of] true, heroic devotion. It is not well that a soldier should remain under fire from fear of discipline alone, but from pride and self-esteem, not yielding to being outdone by his officers in honor and bravery.

Adapted from Antoine-Henri Jomini, *Treatise on Grand Military Operations* (1816), trans. S. B. Holabird (New York, 1865), vol. 2: pp. 448–59, in John I. Alger, *The Quest for Victory: The History of the Principles of War* (Westport, Conn., 1982), pp. 204–8.

Jomini is the most influential strategic theorist of modern times. This may seem surprising, given the eventual eclipse of his personal reputation by that of his great contemporary, Clausewitz. Yet the practical impact of Jomini's ideas can hardly be overstated. He rescued the scientific spirit of the Enlightenment from the mechanistic rigidity that threatened to overwhelm it in the military sphere. His insistence that warfare be based upon **universally applicable**, but also **broadly adaptable**, principles, rather than upon a dogmatic system of approved practices, was an intellectual advance of lasting

importance. At the same time, Jomini detached Napoleon's military achievements from their revolutionary roots, and infused military theory with a **political and social naiveté** from which it still struggles to free itself. Jomini's work purported to demonstrate that the essence of military success lay in **rational decision-making**, designed to bring opposing armies together in a sequence of violent clashes whose political implications would be readily apparent. It was a point of view understandably reassuring to those called upon to fight, but one that would scarcely come up to the realities of modern war.

KEY POINTS

- Early-modern strategic theory was an attempt to introduce scientific rigour into the conduct of war.
- The goal of strategy is to optimize military effectiveness while limiting the social costs of war, relative to the interests at stake.
- Although it has proven impossible to develop universally applicable rules for the conduct of war, the belief that military success depends upon the observance of a small number of general principles remains widespread to this day.

Clausewitz and the modernization of war

For Jomini, the wars of Napoleon constituted a clarifying moment, when rules dimly grasped by the greatest soldiers of earlier times were finally made plain to all. It was a broadly persuasive vision. Some, however, saw differently. One who did was **Carl von Clausewitz**. Clausewitz was born in Prussia in 1780. He entered the army as an officer cadet at the age of 12, on the eve of what would prove to be a quarter-century of war against Revolutionary France. Afterwards his career devolved into a series of conventional peacetime assignments, including a long stint as administrative head of the military academy in Berlin, a post that required no teaching, but afforded ample opportunity for study. He died of cholera in 1831, having published virtually nothing. Among his literary remains was the unfinished manuscript of *On War*, which was published by Clausewitz's widow the year after his death.

On War is widely regarded as a perplexing text. Part of the difficulty lies in the fact that Clausewitz died before completing his work, so that it contains more incidental inconsistencies and gaps than it might have. Part also lies in his habit of **never considering any action in isolation** from the reaction it inspires, a form of analysis that may appear to introduce contradiction where a synthesis is intended. Still, much of *On War* is presented in a perfectly straightforward way. If propositions like 'every attack loses impetus as it proceeds', or 'war does not consist in a single blow', or 'the only means in war is combat', are judged baffling, it cannot be because they are complicated in themselves.

One source of complexity is Clausewitz's determination to view concepts from every possible angle, and to demonstrate their application by attaching them to **metaphorical**

or historical referents that illustrate his meaning without necessarily exhausting it. A good example is the brilliant and oft-cited passage at the end of the first chapter of *On War*, in which Clausewitz compares war's 'dominant tendencies' to 'a remarkable Trinity, composed', as he says:

of primordial violence, hatred, and enmity, which are to be regarded as a blind force of nature; of the play of chance and probability within which the creative spirit is free to roam; and of its element of subordination, as an instrument of policy, which makes it subject to reason alone.

The first of these three aspects mainly concerns the people; the second the commander and his army; the third the government. The passions that are to be kindled in war must already be inherent in the people; the scope which the play of courage and talent will enjoy in the realm of probability and chance depends on the particular character of the commander and the army; but the political aims are the business of government alone.

These three tendencies are like three different codes of law, deep-rooted in their subject and yet variable in their relationship to one another. A theory that ignores any of one of them or seeks to fix an arbitrary relationship between them would conflict with reality to such an extent that for this reason alone it would be totally useless.

Our task therefore is to develop a theory that maintains a balance between these three tendencies, like an object suspended between three magnets.[9]

Any number of readers have concluded from this passage that the 'Trinity' to which Clausewitz refers is comprised of the people, the army, and the government; and, moreover, that all three must be committed to war, lest the resulting imbalance lead to defeat. Yet this reading is wrong. Clausewitz's Trinity consists of abstractions: **violence, chance, and reason**, all themes that recur repeatedly throughout his work. His association of them with the people, the army, and government, respectively (which, incidentally, does not recur) may appear reasonable, and is certainly worth pondering; yet it does not describe all the possibilities even in Clausewitz's day, much less throughout history. Clausewitz's own studies of Napoleon's campaigns leave no doubt that the 'blind force of nature' propelling French armies across Europe did not come from the French people, but from Napoleon himself, in whom the functions of 'army' and 'government' combined. Similarly, Clausewitz's assertion that all elements of the Trinity deserve equal consideration is qualified at once by the observation that, despite their logically co-equal status, *no fixed relationship* could be established among them. This warning might have made more of an impression if it had not been followed by an elegant but misleading reference to theory 'balance[d]' among three magnets, again suggesting a condition of equilibrium where none is required: it is, after all, perfectly possible to suspend an object among magnets of unequal strength.[10]

Despite its rhetorical difficulty, *On War* remains the greatest work on its subject yet written. Its subject, however, is *war*, not *strategy* per se. For Clausewitz, the expansion of war during his lifetime represented a call, not to perfect received ideas, but to reconsider first principles. Although Clausewitz has much to say about how war should be conducted, such matters are of secondary importance, and are addressed by way of illustrating and fleshing out more fundamental arguments. His governing concerns are **cognitive** and **phenomenological**. *On War* sets out to show what war is, what it does, and how it can be known. It is not a book about how to fight. It is a book about *how to think about war*.

Part of what sets Clausewitz's work apart is its attitude toward the past. The rise of natural science invigorated the study of human affairs by providing a new model of intellectual rigour and excellence. It also helped dissolve the notion, prevalent throughout the Middle Ages and into the Renaissance, that Western history was a story of decline from the achievements of Greece and Rome. With the advent of the new science, history became a tale of progress, in which each generation profited from the experiences of previous generations. It was in these terms that Jomini thought about Napoleonic warfare: it was the culmination of a long process of trial and error, leading at last to a breakthrough from which durable conclusions could be drawn.

For Clausewitz, however, the fact of historical change did not present a story of progress. It testified to the instability of human affairs and the limitations of human knowledge. The past did not point toward the present, but was simply itself, coherent in its own terms but no more. It was not possible, for instance, to declare Napoleon a better general than Frederick the Great, as Jomini routinely did, simply because Napoleon conquered more territory, won more battles, or commanded more powerful armies. Such perceived superiority, in Clausewitz's view, was the product of social and political conditions that had not existed in Frederick's time, and would not last forever. The future would render Napoleon's methods as obsolete as those of Frederick or, for that matter, Attila the Hun. The goal of theory therefore could not be to define the *ideal form* that war should take, so that soldiers might strive to achieve it. The best that could be hoped for were theoretical insights that could improve our understanding of war *as it really happened*.

The question posed by history for theory was thus not 'Where does all this lead?' but rather 'What factors govern war in all its forms?' Most basic, and the starting point of Clausewitz's analysis, is **violence**: war is a violent clash of wills, whose defining features arise from the mutual antagonism of the opponents. If one holds this proposition up against the historical record, however, a question arises. There is nothing in the idea of violence itself that would limit its scope. Yet the violence of war is obviously limited by any number of practical difficulties—which Clausewitz characterized as 'friction'—and often by the goals of the belligerents. While all wars were a clash of wills, the issues at stake might not always justify the maximum use of force. War, it seemed, had a 'dual nature': most were fought for *limited purposes*, and employed *limited means*. A few were fought to overthrow the enemy completely, in which case violence might approach the highest level that the resources of the belligerents would allow. Either way, however, there was no doubt of war's subordinate status: it was 'simply a continuation of political intercourse, with the addition of other means'.[11]

In appraising his own work, Clausewitz said that its main value lay not in its conclusions, but in the way they were arrived at. One distinctive feature of his method is a pronounced realism, a refusal to make things simpler than they are to expedite the task of reasoning about them. This impulse is exemplified by the concept of 'friction', a metaphor from the world of engineering, by which Clausewitz sought to grasp an aspect of war that was normally ignored: the tendency of things to go wrong, far more disastrously than they do ordinarily.[12] War, Clausewitz observed, involved action in a resistant medium, like walking underwater. Some might think that the surest path to clarity is to ignore incidental difficulties, in the same way that a scientist seeking a consistent pattern

or 'signal' within a mass of data ignores the 'noise' that surrounds it. For Clausewitz, however, it was unrealistic to adopt such an attitude toward war, in which the effects of **chance** are so profound that they become the central reality, and not simply a distraction.

A similar approach underlies the related concept of **'genius'**, the term Clausewitz used to describe the elements of character and intellect that make for success in military commanders. 'Genius' is the intelligence and willpower of the commander that moves the machinery of war forward, despite the friction that impedes it. For Clausewitz, 'genius' did not imply exceptional ability. On the contrary, even modest success in an environment dominated by chance and danger cannot be achieved through the application of fixed rules and procedures. Like many other writers on war, Clausewitz sometimes compared war to art, another field in which technical expertise is not sufficient to ensure success. The point, however, was not merely to affirm that mental flexibility is a virtue in soldiers, but to insist again on the subordination of theory to reality: 'what genius does', Clausewitz wrote, 'is the best rule, and theory can do no better than show how and why this should be the case.'[13] As in art, true excellence in war cannot be taught, only cultivated, and studied with as few preconceptions as possible.

Clausewitz was intensely preoccupied with the *psychological* dimensions of war, ranging from the communal passions and political ambitions that animate military violence, to the fear and courage that accompany its use, to the insights or mistakes that genius, or the lack of it, may contribute to victory or defeat. This concern is illustrated by another of his habitual metaphors, that of *war as a game*. Analogies between war and games are usually intended to capture war's formal properties. Chess, the greatest of all Western 'war games', has precisely this character. Clausewitz, however, preferred to compare war not to chess, with its subtle positional strategies, but to gambling at cards, where the rules are simple and the **calculation of risk** is everything. If the first question of strategy is 'What is the war about?' the second, in a Clausewitzian spirit, would have to be 'How much do you want to bet?' (See Box 1.2.)

Clausewitz's conviction that war was first and foremost a gamble defined his approach to strategy, in which the inherent tension between the goals of policy and the violence of its chosen instrument must somehow be reconciled. The primacy of politics meant that there could never be a purely military solution to any strategic problem. Military objectives derived from political purposes, and strategic plans should in turn be defined by, and proportionate to, the objective. Yet it also was true that war's **escalatory character** could impress itself upon policy. Although one side's political goals might justify only a modest military effort, the passions that violence inspired, as each antagonist sought to outdo the other, would push against such limits, raising the stakes. Such complex interactions are always central to Clausewitz's thinking. Risk and reward, attack and defence, friction and genius, reason and chance, strategy and politics—these and other interdependent concepts weave their way throughout his work, and provide its essential structure. Each interacts with, and is defined by, the other. None, Clausewitz would have insisted, should ever be thought about alone.

If Jomini represents the apex of the **classic** tradition of strategic theory, in which the deep, permanent structure of military action takes centre stage, Clausewitz is the great **modernist**, for whom, as Marx said, 'all that is solid melts into air', and one is left to

BOX 1.2 CLAUSEWITZ: FRICTION, CHANCE, AND GENIUS

Clausewitz's strategic assessments often differed from the conventional wisdom of his day (and ours), in part because of the unusual weight he accorded to psychological and political factors in war. This is illustrated in the conclusion to his *History of the Campaign of 1812 in Russia* (1814–23). Most observers believed that Napoleon's famous defeat was a foreseeable result brought about by objective conditions—the vastness of Russia, the coldness of winter, and so on. For Clausewitz, however, Napoleon's failure demonstrated the complex interaction between military genius and the uncertainties of war.

Finally, the author would like to offer his opinion on Bonaparte's plan of operation in this much-discussed campaign.

Bonaparte wanted to conduct and conclude the war in Russia as he had conducted and concluded all his campaigns. To begin with decisive blows and to employ the advantages he gained from them to achieve further decisive battles, always placing his winnings on the next card until the bank was broken—*that was his way*, and it must be said that he owed the tremendous success that he had achieved only to *this* way; his degree of success was scarcely conceivable by any other means . . .

To defeat the enemy's army, to destroy it, to occupy his capital, to drive the government to the farthest corner of the country, and then in the chaos that followed to win the peace—that until now had been the operational plan of all his wars. In Russia he had the vastness of the country against him and the disadvantage of two widely separated capitals [Moscow and St. Petersburg]. These circumstances would diminish the *psychological* effects of his victories, a loss that he probably hoped would be made up by two other factors: one was the weakness of the Russian government, its lack of energy and ability; the other, the dissension that he might be able to sow between the nobility and the crown. This is why he was so disturbed when he found Moscow abandoned and destroyed. From Moscow he had hoped to influence opinion in St Petersburg and the rest of Russia.

That under these circumstances Bonaparte should have attempted to reach Moscow in one thrust was only logical.

The effects of Russia's vast territory and of a possible popular war—in short, the weight of a great state with all its powers—could only make themselves felt gradually and might prove overwhelming if he did not master them at the first attempt.

[Even] if Bonaparte . . . had to count on two campaigns to win the war, it still made a great difference whether or not he reached Moscow in the first. Having occupied the capital, he might hope to undermine preparations for further resistance by employing the power that remained to him, the power to impress, to lead public opinion astray, to turn people's feelings against their duty . . .

These seem to us the natural conceptions of a man like Bonaparte. It is simply a question of whether one can say such a plan would not work in Russia, and whether another might have been better.

We do not believe so. To defeat the Russian army, disperse it, and occupy Moscow was a goal that could certainly be achieved in one campaign; but we believe that this goal omits one further, essential condition: *to remain strong even in Moscow.*

We believe that Bonaparte neglected this last consideration solely out of the arrogant recklessness that was characteristic of him. He reached Moscow with 90,000 men—and should have reached it with 200,000 . . .

What of the other plan, which after the event some critics held to be more reasonable or, as they prefer to characterize it, more methodical?

BOX 1.2 continued

Bonaparte should have halted his advance at the Dnieper and Duna [rivers], or at least concluded the campaign with the occupation of Smolensk; then establish himself in the occupied territory and secure his flanks to achieve a better base of operations; arm the Poles, to increase his striking power; and march on Moscow in the following campaign, with a better start and more staying power . . .

That would have meant ending the [first] campaign without having defeated the Russian army, which would have remained more or less intact, with Moscow not even threatened. The Russian forces, which were still weak at the start of the campaign, and which would nearly double during its course, would thus have had time to prepare and during the winter begin an offensive against the vastly extended French defenses . . .

Setting all this aside, however, we will concede the possibility that such a campaign might have achieved its goal and prepared the ground for further gains in the following campaign. But we must also consider matters as they appeared from Bonaparte's perspective: that he found the Russians only half prepared; that he brought a huge preponderance of force against them; that he might gain a victory that would give his whole enterprise that cataclysmic rapidity so essential to paralyzing the enemy; that he could be fairly certain of reaching Moscow in one stride, with the *possibility* of having peace in his pocket in three months. If we consider all this, and compare these possibilities with the results of a so-called methodical campaign, it seems very likely that Bonaparte's plan held a greater probability of ultimate success than the other, and that his was the correct way—not the *more daring*, but in fact the *more cautious* of the two . . .

The dangers of the moment always exert the most powerful influence on men, and therefore it often happens that an action seems audacious which in the end proves to be the only road to safety, and which is therefore the most prudent course. Mere intelligence is rarely sufficient to allow men to rise to this level of insight; it is for the most part a natural boldness of character that equips an individual to discern such prudent paths. This boldness was so much a part of the great conqueror that he would have chosen the most audacious course from pure inclination, even if his genius had not also shown it to be the wisest.

We repeat, everything that he was he owed to his daring and resolute character; and his most triumphant campaigns would have suffered the same censure as this one, had they not succeeded.

From Peter Paret and Daniel Moran, ed. and trans., *Carl von Clausewitz: Historical and Political Writings* (Princeton, 1992), pp. 201–4, emphasis in the original.

reason with what Clausewitz called 'variable quantities'.[14] Among the generations of soldiers that have followed him, the appeal of his work has lain primarily in its emphasis upon psychological elements, and upon the preponderant role of uncertainty and chance in war. The rapid increase in firepower that followed the introduction of rifled weapons in the 1840s meant that armies would grow much larger, while adopting decentralized tactical methods that put a premium upon initiative and spontaneous insight at all levels of command. On the other hand, the simultaneous expansion of military planning, by which the imponderables of the ever-expanding battlefield were supposed to be tamed, reintroduced much of the intellectual rigidity Clausewitz disdained; while the (for a time commonplace) proposition that superior morale was an antidote to the lethality of modern weapons would have struck him as the last word in absurdity.

The mechanization of war also strengthened the technocratic and managerial ethos of

military officers, and with it their natural resistance to Clausewitz's most essential proposition: that war is permeated by politics. Although soldiers in democratic countries have come to accept their subordination to civilian authority as a constitutional principle, the actual introduction of political considerations into the planning and execution of military operations is still invariably regarded as interference in an activity best left to a professional officer corps.

KEY POINTS

- Clausewitz's outstanding characteristic as a theorist is his concern with the role of chance, human personality, and other imponderables in the conduct of war.
- Clausewitz regarded war as permeated by politics, not simply in its origins, but in all aspects of its conduct.
- For Clausewitz, strategic theory is chiefly concerned with the real-life interactions of adversaries, and with the dynamic interaction of complementary concepts, rather than with the development of ideal models to which practitioners should conform.

Beyond the battlefield: Sea power

In the second half of the nineteenth century serious thinking about land warfare was dominated by problems posed by new technologies—rifled weapons, railways, telegraphic communications—that increased the ability of armies to inflict casualties. The small, well-trained forces that prevailed in the immediate post-Napoleonic period were replaced by **mass armies** of conscripts, whose **rapid initial mobilization** was judged strategically decisive. Once vast numbers of indifferently trained citizens in arms were in the field grappling with each other, the chances of reaching a politically useful result were regarded as slim. By contrast, if a fully mobilized army equipped with modern weapons could fall upon an unready opponent, swift victory seemed assured. Speed was of the essence, because of the risk of stalemate once defensive lines stabilized, and because the **social costs** of war were thought to have increased. The same technology-driven processes that made warfare more deadly had (to all appearances) made advanced societies more fragile, because of their dependence upon international markets and suppliers, and because of the rising importance of industrial workers, who might seize upon protracted war as an opportunity to force revolutionary social or political change.

The burden of strategic theory on the eve of the First World War was thus to preserve war's usefulness as an instrument of policy in the face of rising pressure from two sources: **industrial technology** and **capitalism**. As applied to land warfare, the effect was to concentrate attention on tactical and organizational issues. Strategy remained a matter of relational manœuvre by regular forces in space and time, in which the key problem was what to do as the space grew larger, the forces more deadly, and the time shorter. Strategic success became identified with tactical success, above all with

prevailing in the first great clash of arms at the outset of a war, from which all subsequent results would follow.

These same technical and economic forces also impressed themselves upon **navies**, whose activities previously had been of no great interest to military theorists. In the Age of Sail, naval warfare was a more technically demanding problem than war on land: building, maintaining, and fighting sailing warships required all kinds of specialized knowledge, plus a capital-intensive infrastructure far more elaborate than that required to field a good army. Yet naval war had never been subjected to comprehensive analysis, since its strategic effects were thought to be reasonably well accounted for by another emerging field of social theory: **economics**.

Sailing navies were the instruments by which European empires were created. Water also was the only avenue over which large quantities of goods could be moved. These facts defined the basic role of navies in war, which was to disrupt the seaborne commerce of the other side while protecting their own trade. The resulting deprivation, accumulating over years, might contribute to an adversary's decision to sue for peace, and was worthwhile anyway to the extent that resources that had once been theirs would now become yours. But even granting all that, the means by which such slowly mounting pressure was applied seemed to be of limited importance.

War at sea was a natural strategic expression of the economic competition between states: the pursuit of commerce by other means. This conformed to the dominant economic outlook of pre-industrial Europe, known as '**mercantilism**', which defined economic success in terms of the accumulation of assets under a state's control. In the absence of self-sustaining economic growth, material life was regarded as a zero-sum game, in which the interests of all states conflicted. To mercantile theorists like Louis XIV's great minister of finance, Jean-Baptiste Colbert (1619–83), the founder of the modern French navy, trade, piracy, and war all ran together along a single continuum of rivalry and conflict.

One of the achievements of early capitalist economics was to challenge these concepts, thereby ushering in a new, if strategically problematic, understanding of the relationship between war and a state's economic interests. Market theorists like Adam Smith (1723–90) and David Ricardo (1772–1823) identified a society's economic success not with hoarding wealth, but with mutually beneficial exchange and the circulation of money, two processes that operated most efficiently when least disrupted by government action.

It soon became apparent that these new ideas might force a revision of strategic thinking. Capitalists calculated the cost of war on less favourable terms than their mercantilist predecessors. In addition to the direct expense of maintaining navies and armies, and of suffering destruction and death, they added large intangible expenses, caused by the disruption of commerce, forgone investment, and the tendency of war to go hand in hand with protectionist trade practices. These '**opportunity costs**' were, in aggregate, an immense tax upon organized violence—more economically significant, it was argued, than the immediate suffering war caused. From the point of view of free-market economics, war was no different from other misguided practices, like excise taxes or the licensing of monopolies, in which governments engaged only because they were ignorant of the true costs.

Those professionally concerned with the conduct of war were not prepared to concede

that the 'final argument' of international relations had somehow relocated from the battlefield to the marketplace. Yet strategy could not but take account of new material conditions, of which the new economics was merely a theoretical expression. On land, the response was to focus attention upon the swift destruction of the organized forces of the enemy, and to underline the **efficiency of new technology**, whose increased lethality was purported to make war less destructive by making it shorter. On the high seas, however, a more searching appraisal was called for. It was not possible to disentangle maritime war completely from the civil commerce that surrounded it. It was, however, possible to provide it, for the first time, with an explicit theoretical foundation, upon which new claims for naval warfare's decisiveness and economic rationality might be based.

Alfred Thayer Mahan, an American naval officer, sought to do for naval war what Jomini had done for war on land: define its basic principles, from which operational methods could be derived. Mahan proposed that what he called **'sea power'** was the key to world history, and the central feature of modern war. No nation cut off from its normal overseas suppliers and markets could wage industrialized war for long; one that 'commanded' the sea could do what it wished militarily, while continuing to afford its people the material goods to which they were accustomed. To command the sea meant to drive the enemy from it, a task that could only be accomplished by a **battle fleet** that comprised the most powerful ships available. No lesser naval force could stay in the same water with such a fleet, and its ability to go anywhere meant that, once its supremacy was secure, its influence would become general. The crucial step in securing command of the sea was thus to *defeat the enemy fleet*, which should be crushed in battle (or bottled up in its harbours) at the earliest possible moment.

Mahan's conclusions were based on historical study, chiefly of the great contest for global supremacy fought out between France and Great Britain between the wars of Louis XIV and those of Napoleon.[15] Mahan attributed Britain's eventual triumph to its consistent ability to defeat the French fleet in battle. Without such victories, Mahan believed, it would have been impossible for the British to blockade the French coast or harass its trade. This was, to say the least, a selective reading of a complex period, a point made with great force by the British writer **Julian Corbett**.[16]

Corbett, like Mahan, affirmed the strategic importance of navies, while following Clausewitz in insisting that the actual exercise of sea power was a more diversified business than Mahan claimed. At no time during the period Mahan had studied, for instance, had the French navy ceased to operate, while most naval actions had been fought by single ships and small squadrons. Nor did great battles prove decisive at the strategic level. The last 'fleet action' of the Napoleonic Wars, Trafalgar, occurred ten years before Waterloo, and involved only a small fraction of the ships available to both sides. For most of that subsequent decade France and its allies still had more warships than Great Britain did. It was only continuous pressure by dispersed British squadrons that had prevented those resources from coalescing into a force capable of threatening Britain itself. In the end, Corbett proposed, it was on the battlefield that British sea power had made its greatest contribution:by cutting off Napoleon's army in Egypt, while sustaining that of Wellington in Iberia, and above all by protecting the trade and colonial possessions that provided the money with which Britain paid the expenses of the continental armies that

finally brought Napoleon down. Navies, Corbett concluded, might weigh heavily in war, but their strategic effects were **inherently indirect, attritional**, and **time-consuming**.

Corbett was the superior historian and the better prophet. Yet Mahan's outlook proved more persuasive, in part because it glossed over some of the practical limitations of steam-and-steel warships. Such vessels possessed irresistible tactical advantages over their wooden-hulled predecessors, but lacked the range and staying power of ships that required no fuel. Close **blockade**, long the classic expedient of strong navies, was ruled out by the inability of the new warships to stay on a blockade station for long periods of time, and by new weapons—long-range coastal guns, underwater mines, and torpedoes—that made it exceedingly dangerous to bring modern ships close to a hostile shore. By contrast, the classic expedient of weak navies, **commerce raiding**, was despised by the (increasingly influential) commercial interests of all nations, and was deemed a waste of resources, since the small, fast ships required to perform that mission were of no use in an encounter between battle fleets. In truth, the industrialization of navies had transformed them into great, powerful beasts with short legs and poor eyesight, best suited to fight each other. Mahan's conception of sea power (see Box 1.3) explained why that was precisely what they should do, while leaving the world's commerce in peace.

Mahan's work, far more than that of any earlier writer on strategy, attracted a wide readership among civilians fascinated by a vision of global politics that only navies could create, based upon a high-tech infrastructure of canals, coaling stations, dockyards, and steel mills. Later on his reputation would decline, because the future failed to live up to the expectations his books inspired. The battle fleets of the Great Powers did not determine the outcome of the First World War, while the advent of seagoing submarines rescued commerce raiding from the dustbin of history, and turned it into what appeared for a while to be a war-winning strategy. A similarly disconcerting pattern followed in the Second World War, in which naval warfare by the winning side was dominated by **commerce protection** and **amphibious operations**, two missions that Mahan had deemed strategically obsolete.

The Industrial Revolution proved to be less favourable to the interests of navies than Mahan imagined. Although the progressive globalization of the world economy increased the value of the goods that moved across the oceans, and so the value of 'commanding' those oceans in war, it also introduced new modes of transportation—railways, paved highways, eventually aircraft—that reduced the relative advantages of movement over water, and contributed to the growth of integrated continental economies highly resistant to the effects of prolonged deprivation. But even so, navies had less reason to be disappointed about the future than armies did. Neither of the world wars was settled by a great initial clash of arms, and in the end victory in both (and in the Cold War that followed) went to alliances that included the great maritime democracies, which held on long enough to mobilize a crushing material superiority. Sea power thus remains an important theoretical conception, less because its possession ensures victory than because its absence has proved to be disproportionately associated with defeat.

BOX 1.3 MAHAN: SEA POWER

Alfred Thayer Mahan coined the term 'sea power', and identified its central expression as the massed battle fleet. This basic idea is set forth concisely in the following passage, from a work written at the height of the naval rivalry between Germany and Great Britain, which preceded the outbreak of the First World War. Mahan's view of the strategic issues was shared by both the British and German admiralties at the time.

In naval operations [decisive] successes are wrought less by the tenure of a [geographic] position than by the defeat of the enemy's organized force—his battle fleet. The same result will follow, though less conclusive and less permanent, if the fleet is reduced to inactivity by the immediate presence of a superior force; but decisive defeat suitably followed up, alone assures a situation. As has been remarked before, the value of any position, sea or land, though very real, depends upon the use made of it; that is, upon the armed forces which hold it, for defense or offense. The sea is not without positions advantageous to hold; but peculiarly to it, above the land, is applicable the assertion that the organized force is the determining feature. The fleet, it may be said, is itself the position. A crushing defeat of the fleet, or its decisive inferiority when the enemy appears, means a dislocation at once of the whole system of colonial or other dependencies, quite irrespective of the position where the defeat occurs. Such a defeat of the British navy by the German in the North Sea would lay open all English colonies to attack, and render both them and the mother country unable to combine effort in mutual support. The fall of any coast position in the [British] Empire would then become a question only of time and of the enemy's exertions, unless the British navy should be restored. Until then, there is no relieving force, no army in the field. Each separate position is left to its own resources, and when they are exhausted must succumb . . . . On the other hand, so long as the British fleet can maintain and assert superiority in the North Sea and around the British Islands, the entire Imperial system stands secure. The key of the whole is held [by], is within, the hulls of the ships.

From Alfred Thayer Mahan, *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land* (Boston, 1911), pp. 175–8.

KEY POINTS

- The conduct of war at sea has always been influenced by economic ideas and interests.
- The traditional goal of naval strategy, as set forth by Mahan, is to command the sea by means of a superior battle fleet.
- In practice, the strategic effects of sea power almost always take time to be felt, a characteristic at odds with the modern desire to limit war's effects by seeking swift victory.

Imagining Armageddon: Air power

The strategic analysis of sea power was the most important theoretical achievement of the decades preceding the First World War. Afterwards, interest shifted to **war in the air**, the most striking military innovation of the early twentieth century, and one whose theoretical implications have proven exceptionally challenging. Here one encounters a unique intellectual pattern, in which theory, rather than scouring the historical record for useful precedents (of which there were none) has often boldly anticipated practice.

From the moment hot-air balloons were invented in the 1780s, observers had no difficulty devising military uses for them, ranging from the sudden descent of airborne troops, to great contests between what Tennyson called 'airy navies, grappling in the central blue', while dispensing a 'ghastly dew' on those left helpless on the ground ('Locksley Hall', 1842). Except for a few experiments with observation balloons, however, such applications remained fanciful for over a century, until machinery was developed to steer 'air ships' independently of the wind. In 1908 the English novelist H. G. Wells could imagine an armada of German dirigibles crossing the Atlantic to devastate New York City (*War in the Air*, 1908). By then the real embodiment of air power—the aeroplane—was not quite five years old. Yet all of its military uses, from scouting to strategic bombing, had already been foreseen by an eager, if overly sanguine, public.

The First World War provided practical experience against which expectations could be tested. Tens of thousands of military aircraft were produced between 1914 and 1918. Most were employed in **reconnaissance**, or in the related task of shooting down enemy planes. Larger aircraft also were built, and by the end of the war all major belligerents (except the United States) had suffered civilian casualties from aerial bombing. Ground attack aircraft featured prominently in the last German offensive of 1918, and would have in future allied operations had the war gone on longer. Aeroplanes also played their part at sea, delivering mines and torpedoes, scouting for surface fleets, and hunting submarines. Although aeroplanes were nowhere decisive, their ubiquity and versatility were impressive.

The theory of air power arose from trying to draw the lessons from these evocative experiences. The most important early commentator was an Italian artillery officer, **Giulio Douhet**, whose *Command of the Air* (1921) (see Box 1.4) established a number of propositions that have proven central to all subsequent discussions of its subject. Douhet believed that the Great War demonstrated the futility of offensive ground operations, the only form of military action that had ever promised a decisive strategic result. In the air, however, everything favoured the attacker, a conclusion justified less by the still-modest striking power of aircraft than by the apparent difficulty of shooting them down. Wars in the future would therefore begin with all-out air offensives against the enemy's cities, with the goal of delivering a *psychological shock* so profound that the government would have no choice but to surrender. Although some might cavil about the inhumanity of such action—deliberate attacks on civilians are a war crime under the Hague Convention of 1907—Douhet was sure that no belligerent would forgo the advantages of a pre-emptive blow, if only because the only way to avoid being on the receiving end was to

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BOX 1.4 **DOUHET *COMMAND OF THE AIR***

To have command of the air means to be in a position to prevent the enemy from flying while retaining the ability to fly oneself. . . . An aerial fleet capable of dumping hundreds of tons of bombs can easily be organized; therefore, the striking force and magnitude of aerial offensives, considered from the standpoint of either material or moral significance, is far more effective than those of any other offensive yet known. A nation which had command of the air is in a position to protect its own territory from enemy aerial attack and even to put a halt to the enemy's auxiliary actions in support of his land and sea operations, leaving him powerless to do much of anything. Such offensive actions can not only cut off an opponent's army and navy from their bases of operations, but can also bomb the interior of the enemy's country so devastatingly that the physical and moral resistance of the people would also collapse. . . .

To conquer the command of the air means victory; to be beaten in the air means defeat and acceptance of whatever terms the enemy may be pleased to impose. . . .

From this axiom we come immediately to this first corollary: In order to assure an adequate national defense, it is necessary—and sufficient—to be in a position in case of war to conquer the command of the air. And from that we arrive at this second corollary: All that a nation does to assure her own defense should have as its aim procuring for herself those means which, in case of war, are most effective for the conquest of the command of the air. . . .

Any diversion from this primary purpose is an error. In order to conquer the air, it is necessary to deprive the enemy of all means of flying, by striking at him in the air, at his bases of operation, or at his production centers—in short, wherever those means are to be found. This kind of destruction can be accomplished only by aerial means, to the exclusion of army and navy weapons. . . .

Victory smiles upon those who anticipate the changes in the character of war, not upon those who wait to adapt themselves after the changes occur. In this period of rapid transition from one form to another, those who daringly take to the new road first will enjoy the incalculable advantages of the new means of war over the old. This new character of war, emphasizing the advantages of the offensive, will surely make for swift, crushing decisions on the battlefield. . . . Those who are ready first not only will win quickly, but will win with the fewest sacrifices and the minimum expenditure of means.

From Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (New York, 1942; repr. Washington, 1983), pp. 24–30.

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beat the enemy to the punch. The result, in any case, could scarcely be more barbaric than the slaughterhouse of the Western Front.

Douhet's analysis begged a number of important questions. It was not obvious, for instance, exactly how the psychological effects he imagined, should they occur, would make themselves felt upon a government, particularly one not dependent upon democratic public opinion; nor whether a regime thus delegitimized would still be able to come to terms. The result of Wells's imaginary attack on New York had been, not peace, after all, but civil and guerilla war. Advocates of air power in maritime countries, such as Hugh Trenchard in Britain and Billy Mitchell in the United States, were inclined to conceive of strategic bombing less apocalyptically, as a means to wear away the enemy's material resources. In this view, air strategy would focus on the **destruction of war industries** and **civil infrastructure** over an extended period. Such a methodical

approach rejected Douhet's speculative social psychology in favour of ordinary strategic rationality: the losing side would be the one that first decided that suffering further bombardment was too high a price to pay for whatever interests it had at stake.

In continental countries with strong traditions of land warfare, air power was seen less as an alternative to tactical stalemate than as a solution to it. Although no one was prepared to dismiss strategic bombing out of hand, strategists in Germany and the Soviet Union were more inclined to view aircraft as something like **flying artillery**. Aircraft in this role might bring about a decisive engagement on the ground before the effects of strategic bombing, however conceived, could begin to take hold. In these terms, air power did not make land warfare irrelevant. It simply provided the lubricant for a revival of offensive ground operations.

All these promises seemed to be equally well redeemed by the experience of the Second World War, which began with German forces sweeping across Europe, supported by large wings of ground-attack aircraft. Yet the war did not end quickly, and as it dragged on strategic bombing came to seem less an antidote to attrition than one of its instruments. The climactic annihilation of Hiroshima and Nagasaki incorporated just the kind of moral shock Douhet had foreseen. Yet the fact that these blows had come at the end of years of grinding struggle, against an adversary with no means to respond, made their impact difficult to discern amidst the general rubble.

Similar ambiguities confronted sailors, who, like their counterparts on land, recognized that aircraft might be used to solve such traditional problems as reconnaissance and commerce protection. 'Sea power' and 'air power', however, were often viewed as rival conceptions, contending for the honour of having displaced land armies from the centre of strategic calculation. Their convergence in the form of the modern aircraft carrier would transform naval tactics, but not naval strategy. In the Second World War carriers replaced battleships as the capital ships of modern navies because aircraft could perform the functions of naval guns more effectively. Yet the very survival of the idea of the **'capital ship'**, itself a relic from the Age of Sail, suggests strong continuity with the past. Warships now fought each other at vastly greater ranges, but for a familiar purpose: to command the sea.

KEY POINTS

- The central problem of military theory in the twentieth century was to understand the impact of aircraft on war.

- 'Strategic' bombing—the use of aerial bombardment to achieve direct political effects, independent of land and sea forces—has not proven as uniformly decisive as its early enthusiasts hoped.

- Air forces are the indispensable enablers of modern combined-arms operations.

Total war, people's war, and the crisis of theory

It is a nice question whether the atomic bombs dropped on Japan in August 1945 were an expression of air power, sea power, or the continued vitality of combined-arms land warfare. All three were certainly needed to get the bombs to their targets. Afterwards, however, doubts emerged about whether any of them would ever work properly again in the age of **nuclear weapons**, whose power, it was quickly suspected, would make all other forms of warfare irrelevant. Yet the connection is in some respects only symbolic. Upwards of fifty million people died in the Second World War, of whom only a tiny fraction were killed by atomic bombs. Even had the latter never existed, sane observers would have wondered whether 'organized violence' had become such a hopeless oxymoron as to render the pretensions of strategy vain.

From Montecuccoli to Douhet, the central promise of strategic theory had been to **preserve war's political utility by limiting its social costs**, and subordinating its violent character to rational control. Every intervening expansion in the speed, range, and lethality of weapons had been interpreted as an *improvement in military efficiency*, whereby war could do its work, decide the 'final argument', more effectively. The mass armies that were required to absorb the impact of the new weapons were seen in much the same light. They ensured that modern wars would be short and sharp by introducing a self-limiting social dynamic: industrial economies could not stand the strain of protracted conflict, but would quickly cease to produce the military wherewithal necessary for the war to continue. This was the *most calamitous strategic miscalculation of modern times*, and one based entirely upon social presumption, rather than professional military expertise.

In the aftermath of the world wars it had become reasonable to wonder whether all the mental energy expended upon the conduct of war could do more than alter its surface features. As drawn on a map, the Second World War had looked quite different from the First: no trenches to memorialize futility this time, but rather a war of fire and movement, with fleets of aircraft blackening the sky, and great ships plying the waters of the world. Yet the result had been the same: superior economic resources and social resiliency had proven more important than any strategy the armed forces could dream up. The final blow had been delivered by a weapon whose power obviously exceeded the requirements of any rational policy. Afterwards, the world found itself beset by waves of **vernacular and revolutionary violence** whose methods bore little resemblance to those endorsed by military professionals, and against which even the atomic bomb offered no remedy.

In some respects, the problem resembles one that arose, at about the same time, for Newtonian physics, from which early-modern social theory drew inspiration. Newton and his colleagues believed that the laws of nature as they understood them were valid everywhere: universality was for them implicit in the very ideas of 'theory' and 'law'. Later, potentially disconcerting discoveries—for instance, that the sun was not the centre of the universe—were accommodated through a process of theoretical inflation, by which new observations, made possible by a combination of better technology and human ingenuity, were assimilated as **marginal or exceptional cases** within an established paradigm.

As a consequence, physics at the end of the nineteenth century had come to resemble a

system of empirical expedients, rather than a robust intellectual structure. Over the next few decades, however, the root of the problem was finally exposed: the physics of interstellar space on the one hand, and of sub-atomic particles on the other, turned out to be unlike what Newton had supposed, and also unlike each other. Afterwards, physics would remain a coherent field of inquiry. Yet it does not at present contain any body of theory that works equally well for all three realms: the very large, the very small, and the middle-sized world of ordinary experience in between.

For strategists, the realm of the very large is often described as '**total war**', a phrase that covers at least two general possibilities: war with nuclear weapons or by other exceptionally destructive methods; but also war in which the broadest possible range of social energy and resources are harnessed to military effort. Both share the quality that the means of fighting threaten to overwhelm the ends for which they are applied. Clausewitz, for whom the interaction of ends and means was always central, was among the first to recognize that such wars might be the wave of the future. In his own time, he believed,

war, untrammeled by any conventional restraints, had broken loose in all its elemental fury. This was due to the people's share in the great affairs of state. Will this always be the case in the future? . . . Such questions are difficult to answer, and we are the last to dare to say so. But the reader will agree with us when we say that once barriers—which in a sense consist only in man's ignorance of what is possible—are torn down, they are not so easily set up again.[17]

Clausewitz said that his discussion of what he called 'people's war', although unique in the literature on war up to then, was 'less an objective analysis than a groping for the truth', because such wars were not yet common. For a glimpse of that truth, however, we may contemplate Clausewitz's description of the choices facing a society left naked to its enemies because its armies have been defeated:

There will always be time enough to die; like a drowning man who will clutch instinctively at a straw, it is the natural law of the moral world that a nation that finds itself on the brink of an abyss will try to save itself by any means.

No matter how small and weak a state may be in comparison with its enemy, it must not forgo these last efforts, or one would conclude that its soul is dead. . . . A government that, after having lost a major battle, is only interested in letting its people go back to sleep in peace as soon as possible and, overwhelmed by feelings of failure and disappointment, lacks the courage and desire to put forth a final effort . . . shows that it did not deserve to win, and, possibly for that very reason, was unable to.[18]

Clausewitz, it goes without saying, did not envisage nuclear war. Yet, as can be seen here, he could envisage conditions under which the pursuit of politics gives way to something approaching **existential violence**, war not to advance or defend community interests, but to affirm or create communal identity. In 1812, when Prussia had to decide between an alliance with France or resistance against crushing odds, Clausewitz proposed that even total destruction would be better than capitulation, since courageous self-annihilation would sow the seeds for national rebirth later on.[19] At such moments, when the answer to the question 'How much do you want to bet?' becomes 'Everything', the normal categories of strategic and political analysis fall away. Ends and means cease to

interact, but converge to a single point; strategic plan, military 'decision', and political consequence all become one.

Whether the same is true in the realm of the very small—the warfare of guerrillas, partisans, and terrorists—is more difficult to say. These too are forms of **'people's war'**, in which traditional military methods often appear to be turned on their head, and the instruments of military violence slip the leash of professional control. And here indeed one must be careful, for our somewhat whimsical association of such conflicts with the realm of the very small in physics is not intended to revive the nineteenth-century conceit about 'small wars', as colonial conflicts of that era were often called. Such wars are in fact simply the **wars of the weak**, small in the scale of violence they employ, but not in the interests that may be at stake, nor in the passions that may be aroused.

The collapse of Europe's global hegemony between 1914 and 1945 created conditions in which **revolutionary and irregular warfare** gained new significance, and inspired an understandable pessimism among the practitioners of 'Newtonian' strategies based upon massive firepower, logistical abundance, spatial manœuvre, and decisive engagement, who now found themselves on the losing end of conflicts in which they seemed, at first glance, to enjoy every advantage. Yet it is not at all obvious that the underlying logic of ends and means, action and decision, cohesion and disruption, strategy and politics, is overturned by the choice of unconventional military methods. There is, moreover, no reason to believe that the new prominence of the revolutionary guerilla and terrorist will render organized armed forces on the 'Newtonian' model irrelevant. On the contrary: any political community capable of fielding such forces—including those established by revolutionary means—always does so. The *social costs* of people's war in all its forms are indeed unbearably high, and as we have seen, it is the perennial goal of strategy to keep those costs under control.

That the task remains difficult does not mean the effort is not worthwhile. In the first half-century of the nuclear era, at least, the only form of warfare that has been ruled out is nuclear war itself—a surprise, undoubtedly, but hardly unprecedented in that respect. Theory is always condemned to wrestle with a historical reality that has failed to conform to its expectations, or, indeed, to its forebodings. If the results in war are never final, as Clausewitz said, the same must be true for those who seek intellectual mastery over it.

QUESTIONS

1. How do we know that war is not an end in itself?
2. How did Clausewitz's approach to strategy differ from that of Jomini? Which do you think would (or should) have more appeal to those called upon to wage war?
3. What is meant by 'command of the sea'? How do you know when you have it? By what means can it be achieved?
4. Every major advance in the destructiveness and lethality of armaments, from rifled weapons to atomic bombs, has been heralded by claims that new methods would make war more efficient and 'decisive'. Why does this conceit persist, in the face of overwhelming historical evidence to the contrary?

5. What are the distinctive characteristics of 'people's war', as compared to war conducted by regular armies? What special theoretical challenges does it pose?
6. Clausewitz declared that wars could be of two types: those fought for limited objectives, and those seeking to 'overthrow' the enemy. How might this distinction make itself felt in the conduct of military operations? Is it possible (or reasonable) to fight a 'total' war for 'limited' ends?
7. If a military officer has the opportunity to go to graduate school for a couple of years, what should he or she study?
8. If war is the 'pursuit of politics by other means', what is the proper role of political experts (i.e. civilians) in the formulation and execution of military strategy?

ENDNOTES

1. Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), pp. 87, 606–7.

2. Montecuccoli's important works are *Sulle battaglie* (*On Battle*), and *Tratto della Guerra* (*Treatise on War*) (1640–2); *Dell'arte militare* (*On the Art of War*) (1649–54); and *Della guerra col Turco in Ungheria* (*On the War against the Turks in Hungary*) (1670). Complete editions exist in French, German, and Italian, but not English. There is a brief selection in Gérard Chaliand (ed.), *The Art of War in World History* (Berkeley and London: University of California Press, 1994), pp. 566–9.

3. Montecuccoli defined war as 'the use of force or arms [*sic*] against a foreign people or prince' (*Tratto della Guerra*), in contrast to the violence a state might employ to control its own subjects, or which they might use against it. In this he was following the Dutch philosopher Justus Lipsius (*Politicorum libri six* [*Six Books of Politics*], 1589), and echoing his contemporary, Hugo Grotius (*De Jure Belli ac Pacis* [*The Law of Peace and War*], 1625), both of whom treat war as a sovereign act of the state.

4. Vauban's most important work was a compendium of three essays written in 1704–6, in English as *A Manual of Siegecraft and Fortification*, edited and translated by George A. Rothrock (Ann Arbor, Mich.: University of Michigan Press, 1968).

5. It is not by chance that the first flourishing of strategic rationalism was accompanied by a new literature on 'perpetual peace'. Examples are Abbé Charles Irénée Castel de Saint-Pierre, *Projet de paix perpétuelle* (*Project for a Perpetual Peace*) (Utrecht, 1713), and Jeremy Bentham, *A Plan for a Universal and Perpetual Peace* (London, 1789).

6. Memorandum on future operations in Italy (1794), in Felix Markham, *Napoleon* (New York: New American Library, 1963), p. 27.

7. Unfinished note included with the manuscript of *On War*, in Clausewitz, *On War*, p. 71.

8. Jomini was a prolific and highly repetitive writer. Among dozens of works, the most useful for a modern reader is his *Précis de l'art de la guerre* (*Summary of the Art of War*), 2 vols. (Paris, 1838; rev. edn., 1855). There is an abridged edition in English, *Jomini and his Summary of the Art of War: A Condensed Version*, edited by J. D. Hittle (Harrisburg, Penn.: Military Service Publishing Co., 1947).

9. *On War*, p. 89.

10. Not all misreadings of this famous passage can be explained by its rhetorical complexity. A recent example is Martin Van Creveld, *The Transformation of War* (New York: Free Press, 1991),

in which Clausewitz is represented as a proponent of 'Trinitarian war', that is, 'a war of state against state and army against army' (p. 49) from which the people are entirely excluded.

11. *On War*, p. 605. Clausewitz's characterization of war as a political instrument has often been misconstrued to mean that war is brought about by politics, but that once it has begun its unique requirements take precedence. This is not his meaning, as can be seen if the cited passage is presented in its full context:

> It is, of course, well known that the only source of war is politics—the intercourse of governments and peoples; but it is apt to be assumed that war suspends that intercourse and replaces it by a wholly different condition, ruled by no law but its own.
>
> We maintain, on the contrary, that war is simply a continuation of political intercourse, with the addition of other means. We deliberately use the phrase 'with the addition of other means' because we also want to make it clear that war in itself does not suspend political intercourse or change it into something entirely different. In essentials that intercourse continues, irrespective of the means it employs. The main lines along which military events progress, and to which they are restricted, are political lines that continue throughout the war into the subsequent peace.

12. See especially *On War*, pp. 119–21.

13. Ibid., p. 136; cf. the more extended discussion 'On Military Genius', pp. 100–12.

14. For Marx, see *The Communist Manifesto*, in Robert C. Tucker, ed., *The Marx–Engels Reader* (2nd edn., New York: Norton, 1978), p. 475; for Clausewitz, *On War*, p. 136.

15. Alfred Thayer Mahan, *The Influence of Seapower upon History, 1660–1783* (Boston: Little, Browne & Co., 1890).

16. Julian S. Corbett, *Some Principles of Maritime Strategy* (New York: Longmans, Green and Co., 1911).

17. *On War*, p. 593.

18. Ibid., p. 483.

19. 'Political Declaration', in Peter Paret and Daniel Moran (ed. and trans.), *Carl von Clausewitz: Historical and Political Writings* (Princeton: Princeton University Press, 1992), p. 290.

REFERENCES AND GUIDE TO FURTHER READING

The indispensable introduction to the history of military thought is Peter Paret, (ed.), *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, 2nd. edn. (Princeton, N.J.: Princeton University Press, 1986). Hew Strachan, *European Armies and the Conduct of War* (London: Allen & Unwin, 1983), is a survey of modern military history that, while not explicitly concerned with theory, is thoroughly informed by it; likewise Michael Howard, *War in European History* (Oxford: Oxford University Press, 1976), a masterpiece of concision. Williamson Murray, MacGregor Knox, and Alvin Bernstein, (eds.), *The Making of Strategy: Rulers, States, and War* (Cambridge: Cambridge University Press, 1994), deals with national, rather than strictly military, strategies, but sheds much light on the latter.
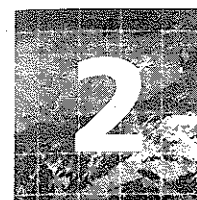
2 Law, Politics, and the Use of Force

Justin Morris with Hilaire McCoubrey*

READER'S GUIDE

This chapter discusses the role of international law in international politics, focusing on the efficacy of legal constraint of the use of force by states. It explores the way in which legal regulations influence the behaviour of sovereign states. It will be shown that international law exerts a significant influence on the behaviour of states, and that this is the case even when states are dealing with issues which are perceived to be of great national interest and where the use of force is often at issue.

International law: Is it *really* law?

There is a commonly held view that international law has little effect upon the behaviour of states. According to this view, international law is but one tool in the diplomatic kitbag that can be utilized to justify politically motivated actions. In other words, many regard international law as not really law at all. Ken Matthews captures this sentiment:

The common view seems to be that international law is honoured more in its breach than in its observance and that since it seems to be broken so much it can hardly be said to exist at all. Moreover

...there is little evidence that international law restrains states from pursuing their interests in the international system.[1]

This assessment of international law reflects the dominant approach to international politics known as Realism. Realists portray the world as one that is dominated by states; it is anarchic, in the sense that states, being sovereign actors, recognize no higher authority. Realists also suggest that states act in pursuit of their national interests, and interaction is regulated through the exercise of power (and ultimately through the utilization of military power). In this Realist world there is little room for effective legal regulation.

The low regard in which international law is commonly held also is a consequence of **inappropriate comparisons drawn between domestic and international law**. These comparisons often lead to the unwarranted conclusion that international law lacks the status of true 'law'. Even among those immersed in international law such doubts sometimes appear, as Sir Hersch Lauterpacht famously commented 'international law is the vanishing point of law'.[2] There is a common assumption that, at the international level, the norm in response to legal edicts is breach, whereas domestically the norm is compliance. In reality, the norm in both cases is compliance, although there may be less compliance at the international level than at the domestic.

Arguments about the comparative efficacy of domestic and international law are often premised upon another misleading idea, that only domestic law boasts the 'legal trinity' of a legislature, a policing capacity, and an effective judiciary. This argument has some merit: the absence of an international legislature—notwithstanding the ability of the United Nations Security Council and General Assembly to pass resolutions which are, or come to be seen to be, binding in nature—is a direct consequence of the anarchic nature of the international realm. International policing—once again with the limited exception of actions carried out by the United Nations—also is absent at the international level, while judicial settlement of disputes is limited in its remit and effect. There also is **a tendency to perceive domestic law as synonymous with criminal law**, since it is from this that preoccupations with apprehension and enforcement accrue. As Hilaire McCoubrey has observed:

Enforcement—specifically processes of criminal enforcement—tends to be emphasised in external observation of the operation of law and legal systems . . . but it can be argued that this is a seriously misplaced emphasis. In countries of common law tradition, it derives in part from the influence exercised by a somewhat debased tradition of analytical positivist jurisprudence deriving from the early 19th Century work of Jeremy Bentham, filtered through that of John Austin. The conventional understanding of their concept of law as the command of a sovereign backed by a sanction, which is a considerable oversimplification of their actual argument, implies a centrality of penal sanctions which is, from broader perspective, unsustainable.[3]

Comparisons between international law and domestic criminal law do indeed appear stark. Criminal law, in theory if to a lesser extent in practice, is obligatory, policed by the state, and enforced through the imposition of judicially passed sanctions. Criminal acts may victimize individuals, but they are offences against the state and punishable accordingly.

Criminal law is, however, just one element of the domestic legal system which states

use to regulate society. Civil law is a very different animal. If, for example, one considers the law of contract, individuals are free to choose which contracts they enter into and whether to carry out the terms of the contract or to breach them. In the case of breach of contract the wronged party may seek redress through the courts, but the outcome of such action will invariably be an order to pay damages rather than of specific performance; the contract-breaker will be forced to pay a penalty rather than be compelled to act in accordance with the agreement. Under the laws of tort individuals are obliged to abide, for example, by rules prohibiting trespass, but where transgression of these rules takes place it is left to the wronged individual to seek redress. The fact that contract law involves an element of choice, and that both the laws of contract and tort are enforced not through the policing activities of the state but by action brought by the wronged party (domestic society's version of self-help), does not deny either of the status of law. Contracts may be broken, trespass may occur, but it can hardly be suggested that contracts are not legally binding in nature, or that an individual does not have a legal right to enjoy, undisturbed by others, the benefits accruing from the ownership of property. Similarly, states may, having carefully weighed the advantages and disadvantages, act in a manner that breaches the rules of international law. The rules breached may be obligatory in nature (for example those prohibiting the use of force) or they may be consensual (for example those arising from a bi- or multilateral treaty) and the breach occurs in the absence of a central policing agent or an effective judiciary through which to seek redress, but the rules are legal rules nevertheless and states understand them to be so. As a consequence, **international law exerts a significant influence over the way policymakers reach decisions**.

KEY POINTS

- Common scepticism regarding international law stems in part from the dominant Realist portrayal of the world.

- Parallels drawn between international and domestic law, particularly where the focus is upon criminal law, are often inappropriate, ill-informed, and misleading.

- Concerns regarding enforcement of the law tend to be over-emphasized.

The efficacy of international law

Louis Henkin once observed, 'it is probably the case that almost all nations observe almost all principles of international law and almost all of their obligation almost all of the time' (Henkin, 1968, p. 47). Yet perceptions of international law, and of the international realm within which it operates, do not reflect this state of affairs. Our understanding is coloured by what might be called a **perception-reality gap** (see Box 2.1).

One reason for this perception-reality gap is the way we learn about international law, and the ways it influences the behaviour of states. Academic journals and books,

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BOX 2.1 SYMPTOMS OF THE PERCEPTION-REALITY GAP

Perception	*Reality*
• Military conflict the norm	• Military conflict the exception
• International law regulates the use of force	• International law regulates almost all aspects of interstate activity
• International law is regularly flouted	• International law is usually obeyed
• Law is prohibitive	• Law is facilitative

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particularly those dedicated to the examination of international relations and military strategy, paint a picture of a world in which international law is routinely flouted; even modern history appears to be replete with states attacking one another in violation of the most fundamental post-1945 legal provisions. Academics appear to revel in the analysis of conflict, and in so doing inadvertently create an impression of an international environment in which military conflict is the norm. In this conflict-ridden world, the primary role of international law is perceived to be the regulation of the use of force, which is honoured more in its breach than in its observance. In reality, interstate military conflict is the exception. International law provides for orderly and predictable intercourse between states at a far more mundane, 'everyday' level. This scholarly focus upon international conflict is mirrored in the television and newspaper headlines that serve to inform general publics of the world outside. Short-lived will be the career of the editor who chooses to tell his or her readers of peaceful coexistence between any of the vast majority of states in the world at the same time that the USSR invades Afghanistan, the United States overruns Grenada, or Iraq seizes Kuwait's oil fields. Indeed, the headlines testify to the fact that cross-border aggression is the exception not the norm. Day-to-day interstate relations proceed in a regular and ordered fashion and international law is a principal mechanism used to facilitate this interaction.

The observation that states generally obey the law should come as no great surprise. International law, and indeed law more generally, is designed not to prohibit those actions which states (or individuals in the domestic setting) would normally choose to undertake, but rather to codify accepted modes of behaviour; good law is facilitative, not prohibitive. International law comprises behavioural regulations that states wish others to obey and which they are prepared to obey themselves. We seek to limit recourse to force not because we assume that most actors, be they states or individuals, desire or indeed intend to resolve their differences through violence, but because we wish to facilitate orderly and peaceful interaction generally and pacific settlement of disputes whenever they arise. Law reflects and strengthens social order, it does not seek to impose it, and were this not the case it would be both ineffective and short-lived. Hence law, be it in the domestic or the international realm, should not be viewed as an end in itself, but rather as a means to an end. It is a mechanism through which societies seek to achieve political objectives. In domestic society, where individuals are subordinate to the authority of the

state, the primary political objective of social order may be supplemented by the pursuit of other goals such as social welfare and justice, though for the citizens of many states this occurs more in theory than in practice. In international society, where states accept no higher authority, order may be all that can be achieved, though the pursuit of a greater degree of interstate justice, itself a contentious notion, may be essential in maintaining international order.

This observation raises a difficult question: *which* social order should be legally codified? For Realists, it will always be the order that secures and perpetuates the privileged position of the satisfied powers, and even champions of international law such as L. Henkin acknowledge the difficulties inherent in codification:

> Since law is generally a conservative force, it is more likely to be observed by those more content with their lot. Nations that believe that they have a particular stake in world order will themselves attend to law, and their compliance will establish a comfortable position from which to insist that others do the same.[4]

The challenge, therefore, is to establish an order premised upon the codification of behavioural norms in which a sufficiently large proportion of states believe themselves to have a vested interest.

> Even the rich and the mighty . . . cannot commonly obtain what they want by force and dictation and must be prepared to pay the price of reciprocal or compensating obligation. Even they, moreover, seek legitimacy and acceptance for their policies.[5]

The compromise that is required of international law is to preserve international order while accommodating the interests of the privileged 'haves' and the struggling 'have nots'. International order and justice are in this sense symbiotic, while the balance between them is likely to be a source of perpetual disagreement. Order and justice must be sufficiently evident to allow for most state officials and polities to believe that they have a stake in the society which they comprise (see Box 2.2).

Why do states obey the law? The simple answer to this question is that states obey the law because they deem it advantageous to do so. The advantage states seek through adherence to international law is not short-term, immediate interest but a longer-term benefit. States obey the law because they anticipate repeated international interaction

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BOX 2.2 WHY DO STATES OBEY INTERNATIONAL LAW?

- *Stigmatization*—states avoid policies likely to lead to them being branded a lawbreaker because of the detrimental effects such stigmatization has upon future interaction.
- *Substantive value*—states are inclined to obey a legal rule if the mode of behaviour enshrined within it is deemed to be of value and the political rationale underpinning the rule is clear.
- *Functional value*—states obey the law because its overall contribution to maintaining international order is considered to be of value.
- *Inertia*—states become habituated into formulating and adopting policies which accord with legal rules.

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and may prove willing to do so to the detriment of their immediate interests. Such long-term benefits may accrue in a number of ways. First, states may derive reputational benefits from observance of legal obligations, they avoid the **stigma** of being branded a 'lawbreaker', or, in current parlance, a 'rogue state'. The costs of being so branded are significant. A state that enters into a legally binding agreement only to find it breached by one of the parties will act with considerable trepidation in future dealings with the violator, while third party states are likely to proceed with similar caution. States obey the law because they expect that others will reciprocate in future dealings with them, not simply with regard to the specific rule or agreement in question, but with regard to legal commitments more generally.

A second reason why states abide by the law is that they perceive it to be of **substantive value**, that is to say that the mode of behaviour enshrined within the particular rule is deemed to warrant respect. Legal rules are a means for societies to pursue collective goals. To the extent that states share in valuing these common aspirations, it follows that the substantive content of a particular law will be deemed by states to be of value. This line of reasoning finds support in the work of Thomas Franck, specifically in his famous analysis of international legitimacy. Franck identifies what he terms 'adherence' as being one of four characteristics which give rise to 'rule compliance'. According to Franck:

Adherence refers to the vertical connection between a specific rule of obligation and other 'higher' principles that define the objectives of the rule system or set out its normative standards.[6]

Hence the clearer the underlying political rationale for the rule, the more likely it is that the rule will attract acceptance and allegiance on the part of states. Agreements will be kept because to do otherwise undermines the potential for regular, predictable, ordered interstate intercourse that benefits most states. Rules pertaining to territorial integrity and the inviolability of borders will be respected because, while short-term gain may accrue from violation, ultimately international order depends upon states showing due regard for these rules.

A third reason why state officials observe international legal obligations is that they perceive international law to be of **functional value**. Although the importance of any individual legal regulation may, or may not, be acknowledged, leaders recognize the contribution that legal regulation as a whole makes to international order. Since the authority of the law will be undermined if states pick and choose the rules by which they abide; all rules must be followed. This general acceptance of legal regulation gives rise to a further ground for conformity to the law, namely **inertia**: states become habituated into formulating and adopting policies which accord with legal rules. This may be for the very tangible reason that, under certain, so-called monist constitutional arrangements, international legal obligations become incorporated into the body of domestic law.[7] Where this occurs, government policies that violate international legal obligations may give rise to action in the domestic courts. There is, however, a less tangible way that states become habituated into following the law: individuals who comprise governing elites and bureaucracies become socialized into behaving in certain prescribed ways. Moreover, to the extent that those charged with formulating policy are subject to legislative scrutiny, and are answerable to the wider public and media, policies that violate legal obligations may be perceived as non-viable.

Although states generally abide by their legal obligations, they do not *always* obey the law. What do breaches of international law tell us about its role and status in international politics? (See Box 2.3.)

Because states normally obey the law, any breach is likely to occur against a background of general conformity to both the body of international law and the specific rule in question. Moreover, if, in breaching a rule, a state attracts the censure of the international community, such a response tends to demonstrate the efficacy, rather than the inefficacy, of the rule. Iraq's invasion of Kuwait, a clear breach of international law, was so over-whelmingly criticized that it bolstered, rather than undermined, the legal prohibition of the use of force in international relations. Given the ambiguity of certain rules, breach also may be an issue of genuine debate and may in fact embody some element of conformity. The general prohibition of the use of force, for instance, is subjected to numerous alternative interpretations regarding the extent of the prohibition and the permissibility of exceptions to it.

Violation of a rule also may be accompanied by an assertion that the rule is perceived by the violating state to be valid and ordinarily applicable and that, but for the existence of a material fact necessitating breach or the existence of a competing principle, the rule would have been adhered to. Any such assertions must, of course, be viewed with the utmost caution: Hitler entered Czechoslovakia in the name of self-determination; the USSR invaded Afghanistan claiming to have been invited in by a newly established regime; and the United States used force against the Dominican Republic claiming to be acting on behalf of the Organization of American States. But it is clear that when states opt to break the law, they seek to justify their actions in terms of the law. Hollow, cynical, and hypocritical as these invocations of the law may be, the very fact that they are made is instructive. Even the most powerful of states, with little if anything to fear by way of sanction from the wider international community, or the most delinquent of rogues, seek to justify their actions in legal terms. Great or small, status quo orientated or revolutionary, states are unwilling, even when in clear violation of the law, to acknowledge so being. Yet if international law is a utopian 'hollow and intolerable sham, which serves merely as a disguise for the interests of the privileged'[8] then who is the audience at which such protestations of innocence or 'good cause' are directed?

BOX 2.3 UNDERSTANDING BREACHES OF THE LAW

The fact that a state breaches a rule of international law does not in itself demonstrate the inefficacy of the rule or of international law more generally.

- Breaches of the law invariably occur against a background of general conformity to both the specific rule and the law in general.
- Widespread censure following a breach reinforces the rule.
- Breach will invariably be accompanied by an explanation based on recourse to legal argument.

KEY POINTS

- International law has a significant, though not necessarily decisive, influence upon the policies that states adopt.
- Most states obey most of the law most of the time.
- States obey the law not, primarily, for fear of sanction, but because they deem it in their long-term interests to do so.
- Where states break the law they rarely seek to repudiate the validity of international law completely and invariably attempt to justify their actions in terms of the law.

International law and the use of force

The two broad functions of the **laws of armed conflict** are performed respectively by the **jus ad bellum** and the **jus in bello**. The *jus ad bellum* (lit. the law towards war) seeks to avert or limit resort to armed force in the conduct of international relations. The *jus in bello* (lit. the law in war) governs and seeks to moderate the actual conduct of hostilities. These sectors are distinct in both purpose and implication. The applicability of the *jus in bello* is not affected by the legitimacy of the initial resort to armed force by either of the belligerents; if it were otherwise the door would be opened to a return to the worst excesses not of pre-modern 'just war' concepts as such, but to its systematic historic abuses. If despite the legal restraints of the *jus ad bellum*, armed conflict breaks out, the *jus in bello* becomes operative and equally applicable irrespective of which party initially transgressed the law. These are pragmatic objectives rooted in the practical experience of warfare. Yet, the idea of legal constraint upon the waging of war, though ancient in origin, seems profoundly paradoxical. Two arguments underpin this apparent paradox, each corresponding to the two areas into which the laws of armed conflict (see Box 2.4) are divided.

Jus ad bellum seeks to control the circumstances in which states use force in their international relations. When the logic of 'power politics' appears at its most intense,

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BOX 2.4 THE LAWS OF ARMED CONFLICT

Jus ad bellum (lit. the law towards war)

- Governs and seeks to limit resort to armed force in the conduct of international relations.

- Major source: UN Charter, Article 2(4) and Chapter VII.

Jus in bello (lit. the law in war)

- Governs and seeks to moderate the actual conduct of hostilities.

- Major source: the four 1949 Geneva Conventions and the Hague Conventions of 1899 and 1907.

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however, factors mitigating in favour of these restraints may be most compromised. According to Sir Hersch Lauterpacht:

> If international law is . . . the vanishing point of law, the law of war is even more conspicuously the vanishing point on international law.[9]

That states do not consider the use of force a viable or acceptable part of day-to-day international relations is clear, and yet it is equally apparent that they do consider such policies to be viable as an option of last resort. In such circumstances the normal rules of international intercourse are most strained. As the German Chancellor Theobald von Bethmann-Hollweg stated in his infamous *Reichstag* speech at the outset of the First World War:

> We are now in a state of necessity, and necessity knows no law. . . . He who is menaced as we are, and is fighting for his highest possession, can only consider how he is to hack his way through.[10]

The German Chancellor's statement is of interest not only because of the relationship that it suggests between necessity and law, but also because it indicates that the decision to invade two neutral states was taken not in *disregard* for the law, but rather in *conscious* breach of it. The legality of the action being contemplated was an issue in the decision-making process.

This is not to suggest that legal questions are at the forefront of policymakers' minds when they contemplate the use of force. The uppermost questions will be ones relating to whether policy objectives can be achieved through the use of force at a reasonable cost. What constitutes a 'reasonable' cost will depend, of course, upon the perceived importance of the objective in question. In a fight for ultimate survival almost any cost may appear reasonable, whereas in one fought for political aggrandizement or to secure the welfare of non-nationals, the threshold of acceptability may be lower. We also may conceive of the notion of 'cost' in several ways. There are the direct costs of conflict, of lives and assets, both military and civilian, lost in the fray. Given the destructive power of modern weaponry these may be almost without limit; in such situations legal niceties may seem at best a tangential consideration. There are political costs: what will be the response, both domestically and internationally, to a policy involving the use of force? Much may here depend upon the outcome of the conflict, but even victory cannot guarantee acclaim. If the action is perceived to be in violation of the accepted norms of international behaviour enshrined within international law, even allies may disapprove. Despite the improbability of effective direct sanction, legal considerations are here paramount, for international law provides the medium of political exchange through which states will formulate, articulate, and justify their response. Normative costs also must be considered. What will be the likely long-term impact of a breach of the cardinal rule prohibiting the use of force upon international order?

Repeated violations can only undermine an order in which both the powerful and the weak have a vested interest. For the former the incentive in preserving the existing order and its rules is readily apparent, though the rules themselves may militate against great powers adopting policies which are blatantly self-interested. In view of its preponderant military and economic power, the willingness of the United States of America to exercise its influence over others is less remarkable than its relative restraint. For the weaker

members of international society the legal framework's prohibition against the use of force also is beneficial. For many of these states, survival is dependent upon these norms of international politics, since their sovereignty is ensured not through defensive military capabilities but rather through the acquiescence of others. As Robert Jackson observes:

Ramshackle states today are not open invitations for unsolicited external intervention. They are not allowed to disappear juridically . . . They cannot be deprived of sovereignty as a result of war, conquest, partition, or colonialism such as frequently happened in the past. The juridical cart is now before the empirical horses. This is entirely new. (Jackson, pp. 23–4)

This new 'sovereignty game' has as much to do with the utility of territorial possession in contemporary international politics as with more enlightened post-1945 political outlooks. For a significant number of the world's states, nevertheless, sovereignty is primarily legally enshrined rather than militarily ensured.

Even if one accepts that, in contemplation of the use of force, states weigh the edicts of international law, it may still require a further leap of faith before one can believe that *once hostilities have commenced*, the law continues to have a significant role to play. War, as an ultimate collapse of 'normal' international relations, appears to be a situation in which the most ruthless use of force must prevail and in which the acceptance of legal constraint can serve only as a potentially fatal self-inflicted impediment to effective action. If it was indeed the purpose of legal norms to obstruct and diminish the combat efficacy of fighting forces, such strictures would be fully justified and norms so conceived could not long endure. That, however, is neither their purpose nor their effect. The real foundation of legal constraint upon warfare can be found clearly stated in a much misrepresented passage in Carl von Clausewitz's classic work *On War*, published posthumously in 1832. The great Prussian theorist wrote that,

He who uses force unsparingly, without reference to the bloodshed involved, must obtain a superiority if his adversary uses less vigour in its application. . . . From the social condition both of States in themselves and in their relations to each other . . . War arises, and by it War is . . . controlled and modified. But these things do not belong to War itself, they are only given conditions; and to introduce into the philosophy of War itself a principle of moderation would be an absurdity.[11]

If war is analysed as a phenomenon in isolation, a logic of illimitable force might indeed seem to be suggested. However, as Clausewitz indicates, wars and armed conflicts do not arise in isolation, but occur in the real context of international relations, which imports expectations that not only condition reactions to armed conflict but themselves have real political and military effect.

In the first place, needless barbarity renders both the conduct and the ultimate resolution of conflict more difficult than it otherwise might be. As the late Colonel Klaus Kuhn commented:

the quickest way of achieving and maintaining a lasting peace is to conduct hostilities humanely. . . . It is evident that humanitarian considerations cannot be dissociated from the strategic concept of military leaders.[12]

The proscription of unnecessary barbarity is counselled not only by ethical and humani-

tarian considerations but also by reference to the response of other states to a belligerent power and the likelihood that conflict will be prolonged when fear of probable mistreatment makes a cornered enemy desperate. The idea is not new, it was asserted in the fifth century BC by the Chinese philosopher Sun Tzu, who advised commanders, 'Do not press a desperate foe too hard'. There is ample historical evidence to support the contention. In 1945 the forces of the Third Reich sought to resist the advancing Soviet army, whose fury was at least in part occasioned by prior German conduct, long after it was clear that all hope of success was gone. Meanwhile, German soldiers hastened to surrender to the Allies in the west. All wars must eventually end, if only through the economic exhaustion of the belligerents. Peaceful relations must be resumed. This process is, *ex hypothesi*, never easy and the more brutal the conflict the more difficult post-war reconstruction will be.

A second criticism levelled at the *jus in bello* is that, to the extent that it humanizes war, it also encourages it. This argument, however, has a major flaw: the inherent cruelty of war does not prevent its occurrence. If the argument were correct, it is difficult to imagine how war could have been contemplated after the carnage of Verdun, the Somme, and Passchendaele. That war continues to occur is a reflection of the fact that rarely do those who start wars have to fight in them or otherwise become their victims. To deny humanitarian mitigation to those who do find themselves engaged in combat would be a cruel logic indeed.

There are powerful ethical and practical arguments for norms of constraint in armed conflict. However, norms governing the conduct of war, as distinct from those governing resort to armed force, are by their nature no more than mitigatory in effect. If it were to be pretended that either ethics or law could render war humane, the 'absurdity' to which Clausewitz referred would rapidly become all too evident.

KEY POINTS

- Even in the most extreme of circumstances, such as those involving contemplation of the use of force, legal factors continue to influence the decisions that officials make.
- War is a social phenomenon and hence the notion of legal regulation of warfare remains pertinent.
- Norms governing the conduct of war are no more than mitigatory in effect.

Jus ad bellum

The *jus ad bellum* is now founded primarily upon **Article 2(4)** and **Chapter VII** (Articles 39–51) of the UN Charter. Article 2(3)(4) of the UN Charter provides that:

(3) All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered.

(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.

The basic proscription set out by Article 2(4) is recognized as having the character of **jus cogens** and as such is, under Article 53 of the Vienna Convention on the Law of Treaties 1969,

a peremptory norm of general international law ... accepted and recognised by the international community of States as a whole as a norm from which no derogation is permitted.

The Article 2(4) prohibition is qualified by two exceptions: (1) the inherent right of individual and collective **self-defence** in the face of armed attack, preserved by Article 51; and (2) action taken for the **maintenance or restoration of international peace and security** authorized by the UN Security Council under Article 42.

Article 51 of the UN Charter states:

Nothing in the present Charter shall impair the inherent right of individual or collective self-defence 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.

Taken in conjunction with the wording of Article 2(4), Article 51 raises a number of issues. In the case of Article 2(4) what, for example, constitutes 'the threat or use of force' and is such a threat or use which is not 'against the territorial integrity or political independence' of a state permissible? What, under the terms of Article 51, constitutes the 'inherent right of individual or collective self-defence' and at what point can the Security Council be deemed to have 'taken the measures necessary to maintain international peace and security'? These questions have emerged in debates regarding the legality of practices such as anticipatory self-defence, military intervention to protect nationals abroad, action taken in response to terrorism, and humanitarian intervention. Israel has long argued, for example, that given its size and location, its neighbours' hostility, and the destructive power of modern weaponry, the right of self-defence must include a right to strike in genuine anticipation of an attack. For Israeli leaders, acceptance of the contrary position would totally undermine the notion that they have a right to act to ensure their continued national survival. The United States has used force to protect US nationals abroad, arguing that it is obligated to do so where a host state is either unable or unwilling to act to provide for their security. Similarly, the United States has used force to counter what it considers to be state-sponsored terrorism. (See Chapter 9.) US officials claim that states that harbour and train terrorists are themselves violating Article 2(4), thus activating Article 51. Finally the United States and its Western allies have, since the end of the Cold War, become more assertive in their claims that, on the basis of customary international law and moral imperative, humanitarian intervention constitutes a legitimate exception to the Article 2(4) prohibition of the use of force.

Notwithstanding the legal, moral, or political merits of any individual case, the propensity of such claims to emanate from the more powerful members of the international community is a reason for caution. Consider, for example, the conclusions of Thomas Franck and Nigel Rodley in relation to humanitarian intervention:

in theory no moral person can take exception to a rule which, in the absence of an effective international system to secure human rights, permits disinterested states to intervene surgically to protect severely endangered human rights and lives, wherever the need may arise. . . .

A study of interventions in practice ... [however] reveals that most have occurred in situations where the humanitarian motive is at best balanced, if not outweighed, by a desire to ... reinforce socio-political and economic instruments of the *status quo*.[13]

A proliferation of exceptions to Article 2(4) would leave little of the basic prohibition of the use of force. In an international environment consisting of sovereign states, admitting of no higher authority, order is sufficiently vulnerable. At the same time, the destructive capacity of modern warfare heightens the need to limit the use of force. That states will, when they see no other means by which to achieve vital national goals, resort to force is an inevitable condition of international politics. To loosen the bonds of legal control when such strictures clearly serve to limit conflict, however, would run counter to the ultimate goals of international society. State practice, in its general renunciation of those that do resort to force, provides support for this position; exceptions to the prohibition of the use of force, it may be concluded, should be interpreted in an extremely restrictive manner.

One more issue regarding the *jus ad bellum* requires consideration, namely the relationship between the prohibition of the use of force enshrined in Article 2(4) and the collective security provisions of the United Nations Charter. The drafters of the UN Charter envisaged not only the establishment of a legal structure which would prohibit the use of force (other than in the case of self-defence) but also the creation of a collective security mechanism which would operate to ensure the security of states. In accordance with Article 39 of the Charter:

The Security Council shall determine the existence of any threat to the peace, breach of the peace, or act of aggression and shall make recommendations, or decide what measures shall be taken in accordance with Articles 41 and 42, to maintain or restore international peace and security.

In the case of a positive determination, the Security Council may, under Article 40, decide upon 'provisional measures' for the aversion of any escalation of the crisis and, where necessary, may impose non-military (primarily economic) sanctions under Article 41 or military measures under Article 42. Article 42 provides that:

Should the Security Council consider that the measures provided for in Article 41 would prove inadequate or have proved to be inadequate, it may take such action by air, sea, or land forces as may be necessary to maintain or restore international peace and security.

Articles 41 and 42 should not be understood as being mandatorily sequential. It is entirely lawful in appropriate cases to proceed straight from Article 39 to Article 42, as is made clear by the provision of Article 42 that it may be applied if the Council considers that Article 41 sanctions 'would prove inadequate'. The assumption that economic measures are necessarily the more humane approach has been severely undermined by claims that economic sanctions fall disproportionately on the population rather than the leadership. As technology allows ever more precise military targeting, economic sanctions may come to be seen as the indiscriminate option, especially when leaders of target states are less interested in the welfare of their citizens than in the political capital generated by images of suffering appearing in the world's media.

The Chapter VII mechanism gives rise to a number of grey areas, not least of which is **what constitutes a 'threat to the peace'**. The Charter provides no guidance as to what

constitutes such a situation and it is clear from the *travaux préparatoires* that those responsible for the Charter intended that the Security Council should have wide discretion in reaching such a determination. Proposals to include a definition of aggression were rejected because states were reluctant to shackle the Council's activities. The decision also reflected the fact that the Council was intended to act as a political rather than a judicial body and legalistic definitions were therefore deemed inappropriate. Threats to the peace also were limited to *international*, i.e. inter-state, aggression but this relatively restrictive interpretation has, through practice, been eroded over time. More recent UN practice suggests that some internal use of force might fall within this category, at least where it threatens regional stability. N. D. White suggests that the term 'threat to the peace' should be understood to denote:

Situations [that] have at their core the use of armed force, either internal or international. The integrity of the concept has been maintained by many of the recent uses of the term by the Security Council, covering issues such as threats of force (provocative action directed by Iraq against Kuwait), widespread violations of international humanitarian law (including 'ethnic cleansing' in Bosnia), massive humanitarian crises (caused by the genocide in Rwanda in 1994 which led to related problems in Burundi and Zaire in 1996), and breach of a Security Council arms embargo (relating to Rwanda).[14]

In addition to the—now much depleted—restriction that the Security Council can only act with regard to international uses of force, a further restriction was imposed upon the Chapter VII mechanism: the activities of the Security Council's five permanent members (China, France, the United Kingdom, the United States, and the Soviet Union) would, as a result of the veto power granted to them under Article 27(3), be exempt from UN sanction. In this way the organization's architects sought to resolve a major dilemma: the five permanent members were the most powerful states of the day and it could be argued that they were, therefore, the states whose behaviour was most likely to need policing. Yet any attempt to so police the behaviour of the 'P5' would almost inevitably lead to major conflict and the destruction of the United Nations. A veto-induced stalemate was deemed to be the preferable alternative, a view shared by all the delegates present at the founding of the United Nations. As the Indian delegate to the San Francisco Conference stated:

The veto power . . . is . . . an implicit guarantee to all members that they will not be asked to wage a war, in the name of the United Nations, against any of the big powers.[15]

Hence the drafters of the Charter proceeded not upon the basis that consensus would be maintained and the veto would not be called upon, but upon the understanding that disagreements might occur and that where this was the case the Security Council would be incapacitated. As Inis Claude remarks:

The conclusion is inescapable that a conscious decision was made at San Francisco to avoid any attempt or pretence at subjecting the major powers to collective coercion . . . The security scheme of the Charter . . . was conceived as an arrangement for collective action against relatively minor disturbers of the peace, in cases where the great powers were united in the desire to permit or take action.[16]

Criticisms based on the notion that the UN is an idealistic and impractical organization seem somewhat ill-founded, though the extent of the US–Soviet confrontation, in both

severity and duration, clearly was not anticipated and could not be accommodated within the system.

That the UN collective security system never developed as initially anticipated is now a matter of historical record. The onset of the Cold War prevented the conclusion of agreements earmarking national armed contingents for UN operations as envisaged under Article 43. A Military Staffs Committee—intended, in accordance with Article 47, to provide strategic, though not tactical, guidance on the use of such forces—was established, but as a general staff without an army to command it stood as a monument to the UN's failings. Even more destructive than these deficiencies was the decision-making paralysis which afflicted the Security Council as a result of the ideological schism that characterized post-1945 international politics. As a consequence the UN was unable, save perhaps for its operation in Korea and the limited contributions it was able to make through peacekeeping operations, to fulfil the role of security guarantor ascribed to it. In any examination of the *jus ad bellum* this raises one final question: should Article 2(4) be viewed as being *contingent* upon the effective operation of Chapter VII? In the absence of an effective collective security mechanism, the apposition of the Article 2(4) prohibition appears far less sound. Be this as it may, in practice this question appears to have exercised the minds of legal scholars more than those of policymakers. Despite the absence of an effective collective security mechanism, no state has refuted the validity of Article 2(4) or, indeed, its standing as a norm of the status of *jus cogens*. It should not, however, be categorized as a question of 'purely academic' interest. While states may be reluctant to upset the legal apple-cart by openly challenging the applicability of Article 2(4) on these grounds, the UN's inability to safeguard international peace affects the way in which states view recourse to force.

KEY POINTS

- The *jus ad bellum* governs and seeks to limit resort to armed force in the conduct of international relations.
- Recourse to force is prohibited other than in cases of individual or collective self-defence and where action is taken to restore international peace and security as mandated by the UN Security Council.
- Exceptions to the prohibition of the use of force should be interpreted very restrictively.
- The prohibition of the use of force is not contingent upon the successful operation, as originally envisaged, of the UN collective security mechanism.
- No state has openly repudiated the prohibition of the use of force.

Jus in bello

The *jus in bello* has two principal subdivisions, which have been categorized as 'Geneva' and 'Hague' law, in recognition of the principal treaty series upon which each is founded. Modern 'Geneva' law is concerned with the **protection of the victims of armed**

conflict. 'Hague' law is concerned with **methods and means of warfare**, including controls on weapons types and usage, and on tactics and the general conduct of hostilities. The 'Geneva/Hague' distinction is artificial; both are premised on a humanitarian concern for the moderation and mitigation of warfare and for this reason there is a considerable degree of overlap between them. In modern usage the term **'international humanitarian law'**—historically used to refer specifically to 'Geneva' law—is taken to comprise the whole *jus in bello* in both its 'Geneva' and 'Hague' dimensions (see Box 2.5).

Both sets of norms rest ultimately upon a fundamental principle of proscription concerning the infliction of militarily **'unnecessary suffering'**. This principle was stated expressly in the 1868 Declaration of St Petersburg:

The only legitimate objective which States should endeavour to accomplish during war is to weaken the military forces of the enemy . . . this objective would be exceeded by the employment of arms which uselessly aggravate the suffering of disabled men . . . [and] the employment of such arms would therefore be contrary to the laws of humanity.

This Declaration's statement of the fundamental humanitarian limitation upon legitimate military conduct may be taken as a formulation of the key characteristics of the *jus in bello* in both its 'Geneva' and its 'Hague' dimensions. Premised upon the self-same rationale that 'military necessity does not admit of cruelty' and of more general applicability in terms of substance than the St Petersburg Declaration, the Lieber Code of 1863 was believed by its author, Professor Francis Lieber, to be in its content declaratory of the generally accepted law of its day. Indeed, the rules so embodied, though only binding upon US forces, were sufficiently consistent with accepted state practice that, within thirty years, similar guidelines had been issued by all the major European powers. Attempts at the Brussels Conference of 1874 to devise a European codification of the *jus in bello* failed to reach fruition as a multilateral treaty but, in spite of the absence of an internationally agreed document, these various national codes constituted customary international law in this area.

Despite setbacks (e.g., the thwarted efforts made in Brussels in 1874), progress was made in the development of treaty provision in the area of international humanitarian law. The modern foundations of the 'Hague' sector are primarily to be found in the **Hague Conventions of 1899 and 1907** and the 1977 Additional Protocol I to the Geneva Conventions which makes provision for methods and means of warfare and discrimination in bombardment. Modern 'Geneva' law is based on the four **1949 Geneva Conven-**

BOX 2.5 *JUS IN BELLO*

'Geneva' law	'Hague' law
• Concerned with protection of victims of armed conflict.	• Concerned with methods and means of warfare.
• Based primarily on the four 1949 Geneva Conventions.	• Based primarily on the 1899 and 1907 Hague Conventions.

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tions, dealing respectively with: (I) Wounded and Sick on Land; (II) Wounded, Sick and Shipwrecked at Sea; (III) Prisoners of War; and (IV) Civilians. On the basis of this treaty and customary provision the fundamental rules of the *jus in bello* are well settled, although they are applied neither consistently nor unproblematically.

International humanitarian law is closely related to the general law of human rights, and this creates a powerful argument that the obligations created by it are essentially unilateral and non-reciprocal in nature. The common Article 1 of the four 1949 Geneva Conventions provides that:

The High Contracting Parties undertake to respect and ensure respect for the present Convention *in all circumstances* [emphasis added].

On this basis Jean Pictet noted:

[The Convention] is not an engagement concluded on a basis of reciprocity, binding each party to the content only in so far as the other party observes its obligations. It is rather a series of unilateral engagements solemnly contracted before the world as represented by the other Contracting Parties.[17]

This **argument of general non-reciprocity** relates ultimately back to the so-called Martens clause, named after the Russian statesman Frederick de Martens, which was adopted at the Hague Peace Conferences and which states:

The High Contracting Parties deem it expedient to declare that in cases not included in the Regulations adopted by them, the inhabitants and the belligerents remain under the protection and the rules of the principles of the law of nations as they result from the usages established amongst civilised people, from the laws of humanity and the dictates of public conscience.

Although found only in a Preamble, and therefore in a sense only advisory, the Martens clause was approvingly cited at the Nuremberg Tribunals. It confers a very particular status upon some fundamental provisions of international humanitarian law. Three levels of obligation emerge in connection with international humanitarian legal norms: those rules and principles that form part of customary international law or *jus cogens* (including the bulk of the Geneva Conventions and much of the established 'Hague' law) and are therefore binding on all states irrespective of reciprocity; those principles that otherwise fall within the scope of the Martens clause and are not subject to a requirement of reciprocity; and other provisions that are either innovatory and not yet established as customary, or non-customary and not fundamental in nature, and that remain subject to the principle of reciprocity (see Box 2.6). Accordingly, a compelling case may be made that at least the humanitarian principles of the *jus in bello* have the quality of *jus cogens* and are rules from which there may be no derogation and from which reservation is not permitted. To this extent, the international community has established a universally applicable system of legal regulation in keeping with the principle of unnecessary suffering expressed in the Declaration of St Petersburg well over a century ago.

The extent to which the *jus in bello* is able to realize the objectives which it enshrines is contingent upon the degree to which the modes of behaviour so prescribed become embedded within practice. Once again, excessive concern with punishment, in this case of war crimes, misses the point that the primary function of international humanitarian law is not to punish those who violate its edicts but rather to protect the victims of armed

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BOX 2.6 *JUS IN BELLO*: LEVELS OF OBLIGATION

Three levels of obligation can be suggested to arise in connection with the *jus in bello*:

- Rules and principles which form part of customary international law or *jus cogens* (including the bulk of the Geneva Conventions and much of the established 'Hague' law) are binding on all states irrespective of reciprocity.
- Fundamental principles which otherwise fall within the scope of the Martens clause and which are, therefore, also not subject to a requirement of reciprocity.
- Provisions which are either innovatory and not yet established as customary or non-customary and not fundamental in nature which remain subject to the principle of reciprocity.

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conflict by preventing war crimes in the first instance. Indeed, before any question of punishing war crimes or other enforcement action can arise, failure in this primary endeavour must be presupposed and in this sense issues of enforcement must be viewed as secondary to the imperatives of effective dissemination and training. That in many states the latter is now a foundational element of military training bodes well, though such practice is far from ubiquitous and deficiencies in this regard are often exacerbated through shortcomings in discipline and command and control. A proliferation in the post-Cold War world of conflicts in which combatants do not conform to the—perhaps idealized—traditional notions of regular military forces is likely to worsen this situation still further as conflicts in the late 1990s and early years of the twenty-first century in the former Yugoslavia and Rwanda testify. In this light, and notwithstanding the limited success of the International Criminal Tribunals established in these cases nor the earlier admonishment to educate and train rather than punish, steps taken in Rome in 1998 towards the establishment of an **International Criminal Court** take on a heightened significance.

KEY POINTS

- The *jus in bello*, often split into the subdivisions of 'Geneva' and 'Hague' law, governs and seeks to moderate the actual conduct of hostilities.
- The 'Geneva' law is concerned with the protection of victims of armed conflict. 'Hague' law is concerned with methods and means of warfare.
- The bulk of 'Geneva' and 'Hague' law has the status of *jus cogens.*
- The primary function of the *jus in bello* is to protect the victims of armed conflict through preventing war crimes. Such objectives should, therefore, be pursued primarily through education and training rather than through post-violation prosecution.

Conclusion

The low regard in which international law is held is the consequence of several factors. It is a result of our perception of the world of international politics and the extent to which we tend to see this as an environment characterized by conflict. In such a world, the notion of states forming a society appears inappropriate and it follows that law seems equally out of place. This perception is profoundly misleading. Rather than wringing our hands over the extent of military conflict in the world we might, without forgetting the devastation and suffering inherent in conflicts when they do arise, marvel at the degree to which an increasing number of states manage to coexist in a co-operative and mutually beneficial manner. It would be folly to suggest that this is the consequence of some great legalistic enterprise, but equally it would be foolhardy to suggest that international law had no role to play in influencing how states behave. To borrow a phrase from Robert Keohane, international law 'prescribes behavioural roles, constrains activity, and shapes expectations'.[18]

At times, of course, international law, like all law, is broken. This, however, is the exception rather than the rule. Moreover, in cases where international law is broken one would be hard pressed to find a transgressor who does not at least attempt to provide a justification, couched in legal terms, for their breach, and the more prominent and significant the breach, the greater the efforts become. Nowhere are breaches of international law more significant or prominent than with regard to the laws of armed conflict. Nowhere are the stakes higher or the pressures greater. It is, therefore, all the more noteworthy that, even here, the law prevails.

QUESTIONS

1. Why is international law held in such low regard? Is this a deserved reputation?
2. Does international law influence the behaviour of states? If so, how and why?
3. Can you cite examples involving the use of force, in which states have breached international law and not attempted to justify their actions in terms of the law?
4. Are exceptions to the prohibition of the use of force—such as anticipatory self-defence, action to protect nationals abroad, action to punish state-sponsored terrorism, and humanitarian intervention—justifiable?
5. Should the prohibition of the use of force be contingent upon the existence of an effective mechanism by which the security of states can be assured?
6. Are limitations on the way war is waged practicable?
7. Assess the United States' objections to the Statute of Rome and the International Criminal Court.
8. Will the powerful always do what they wish and the weak do what they can?

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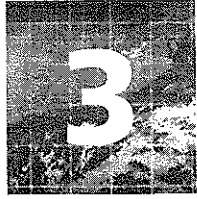
The Causes of War and the Conditions of Peace

John Garnett

READER'S GUIDE

Scholarship dealing with the causes of war is voluminous and multi-disciplinary. This chapter describes and explains theories that have been advanced by biologists, philosophers, political scientists, and sociologists about why wars occur. It groups their ideas into categories and shows how different explanations of war give rise to different requirements or conditions for peace. Distinctions are drawn between 'immediate' and 'underlying' causes of war; between 'permissive' and 'efficient' causes; between 'learned' and 'instinctive' causes; and between 'necessary' and 'sufficient' causes. The chapter pays particular attention to explanations of war based on 'human nature' and 'instinct', but it also considers those psychological theories that emphasize 'misperception' and 'frustration' as causes of aggression. The ideas of those who find the causes of war in human collectives—states, tribes, and ethnic groups, and those who favour 'systemic' rather than 'unit' explanations—also are described.

Introduction

Though 'strategy' these days is as much concerned with the promotion of peace as with the conduct of war, the phenomenon of war remains a central concern. Previous generations might have seen virtues in war, for example, as an instrument of change or as a vehicle for encouraging heroic virtues, but these ideas have been rendered obsolete by the destructiveness of modern warfare. (See Chapter 1.) In the twentieth century abolishing war became a top priority. The first step in ending war, however, is to identify its causes.

Historians sometimes argue that since wars are unique events, the causes of war are as numerous as the number of wars and nothing in general can be said about them. This chapter takes a different view. It identifies similarities and patterns between the causes of wars so that we can group causes under such headings as **human nature, misperception, the nature of states,** and **the structure of the international system.** Its aim is twofold. First, to relate contemporary scholarship across a range of disciplines—biology, political science, philosophy, and history—to the problem of war causation, and second, to elaborate a number of distinctions which help us to identify different kinds of 'cause' (e.g. **'underlying'** and **'immediate'** causes, or **'conscious'** and **'unconscious'** motives). Throughout the chapter these distinctions are used to identify the various causes of war and to discriminate between them.

Since there is little scholarly agreement on what causes war, this chapter is directed towards explaining the debate rather than to answering the question in a decisive way. The arguments are more than academic because, if the cure for war is related to its causes, then different causes will lead to different policy recommendations. If, on the one hand, wars are caused by arms races, then policies of disarmament and arms control are appropriate solutions to the problem of war. (See Chapter 8.) On the other hand, if wars are instigated by despotic or authoritarian states, then the way to peace lies in the spread of democracy. If the basic cause of war is deemed to be the 'international anarchy' which characterizes the current system of states, then attempts to rid the world of war will be geared towards promoting 'system change'—perhaps in the direction of strengthened international law or a system of collective security or world government.

Some explanations for war offer less hope for finding a way to end armed conflict than others. For example, those that locate war in a fundamentally flawed human nature suggest a bleaker future for the human race than those that locate the causes of war in 'learned' behaviour. If war is learned rather than instinctive, then there is a possibility that it can be eliminated through social engineering.

Three conclusions emerge from this analysis. First, the search for a single cause appropriate to all wars is futile. Second, because war comes in a variety of forms and has a multiplicity of causes, its elimination will almost certainly require simultaneous domestic and international political action. Third, a worldwide 'just' peace is unattainable. (See Box 3.1.)

BOX 3.1

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Five distinctions which may help clarify our thoughts about the causes of war.

1. 'Instinctive' vs. 'learned' behaviour.
2. 'Immediate' vs. 'underlying' causes.
3. 'Efficient' vs. 'permissive' causes.
4. 'Conscious' vs. 'unconscious' motives for war.
5. 'Necessary' vs. 'sufficient' causes.

The study of war

In the field of international relations no question has attracted more attention than 'Why war?' The reason for this interest is that war is almost universally regarded as a human disaster, a source of misery on a catastrophic scale, and, in the nuclear age, a threat to the entire human race. But war has not always been viewed so negatively. In the nineteenth century, for example, numerous writers identified virtues in war. (See Chapter 1.) The philosopher G. W. F. Hegel believed that war preserved the ethical health of nations, and in a similar vein H. von Treitschke regarded war as 'the only remedy for ailing nations' (Gowans, 1914, p. 23). For Treitschke, war was one of the conditions for progress, the cut of the whip that prevents a country from going to sleep, forcing satisfied mediocrity to leave its apathy. This kind of thinking alerts us to the idea that war can be thought of as a purposive, functional thing. E. H. Carr regarded it as 'the midwife of change' (1942, p. 3): 'Wars . . . Break up and sweep away the half-rotted structures of an old social and political order'. These authors suggested that wars herald rapid technological progress, territorial change, strengthened group consciousness, and economic development. The idea of war as a purposive, functional thing, however, sits uneasily in an age that typically interprets war as an abnormal, pathological condition that threatens us all.

Idle curiosity or an aimless spirit of enquiry has not motivated most investigations into the causes of war. Theorists have studied war to abolish it. They have believed that the first step towards eliminating war is to identify its causes because, in much the same way that the cures for disease are related to the causes of disease, so the cures for war are to be found in its causes. So long as students of war do not allow their enthusiasm for prescription to affect their diagnostic skills, no harm is done. But there is a danger that researchers may be tempted to gloss over the more intractable causes of war in favour of those which suggest the possibility that solutions to human conflict can be readily found.

Many social scientists recoil from the idea that though particular wars may be avoided, war is endemic in the human condition. The idea that war is inevitable is pretty difficult to swallow, psychologically speaking, and that may explain why pessimistic interpretations of the causes of war meet with resistance. Take, for example, the view that the root cause of war is to be found in human nature, i.e., that aggression and violence are genetically built into humans and that we do what we do because of what we are. Despite some scientific evidence in support of this idea, there is enormous resistance to it. Why?

Because, if human nature is fixed in our genes, we are helpless in the face of ourselves. For many observers, the conclusion that war is built into us is an intolerable counsel of despair even though it is a useful reminder that just because the elimination of war is desirable does not mean that it is therefore possible. (See Box 3.2.)

A gloomy interpretation of human nature and an admission of its intractability, however, do not automatically lead to despair of ever being able to rid the world of war. Some would argue that wars are not caused by human *nature*; they are caused by human *behaviour*. And while it may not be possible to change human nature, it is certainly possible to modify human behaviour—by offering rewards, by making threats, by education programmes, or by propaganda. Richard Dawkins has pointed out that 'our genes may instruct us to be selfish but we are not necessarily compelled to obey them all our lives. It may . . . be more difficult to learn altruism than it would be if we were genetically programmed to be altruistic', but we should try 'to *teach* generosity and altruism, because we are born selfish' (1976, p. 3). Civilized societies spend a great deal of energy on making people behave themselves despite their natures. The law, the police, schools, and churches all play a part in modifying human behaviour in the domestic environment. The possibility of modifying state behaviour also is widely recognized. Diplomacy, force, trade, aid, and propaganda are all instruments used by leaders to affect the behaviour of the states they are dealing with. Deterrent strategists, for example, argue that even if human nature is fatally flawed (and most of them think it is), states can still be deterred from aggression by the threat of unacceptable punishment in much the same way that many potential criminals can be deterred from robbing banks by the threat of imprisonment. (See Chapter 7.)

Unlike those who believe that peace can best be promoted by removing the causes of war, nuclear deterrent strategists hardly care at all about why wars occur. Their policy is simply to make the *consequences* of war so bad that nobody will dare fight even if they want to. In other words, the strategy of nuclear deterrence is unique in that its effectiveness does not depend either on particular interpretations of why wars occur or on treating the underlying pathologies that cause people or states to fight. The only assumption that deterrent theorists make about human beings is the fairly uncontroversial one that on the whole people prefer to be alive rather than dead and hence are likely to be deterred from aggression by the threat of annihilation.

Difficulties in studying war

No clear authoritative answer has emerged, and perhaps one never will, to the question 'Why war?' One of the reasons for this is that the word 'war' is a blanket term used to describe diverse activities. There are total wars and limited wars, regional wars and world wars, conventional wars and nuclear wars, high-technology wars and low-technology wars, inter-state wars and civil wars, insurgency wars and ethnic wars. In recent years, wars also have been fought by coalitions on behalf of the international community. It would be very surprising if these widely different activities—linked only by the fact that they involve organized military violence—could be explained in the same way.

Another reason for the absence of an authoritative answer is that the question 'What are the causes of war?' is a complicated, 'cluster' question. Under its umbrella, as Hidemi

Suganami has pointed out, we may be asking a number of different questions. We may, for example, be asking 'What are the conditions that must be present for wars to occur?'; or we may be asking 'Under what circumstances have wars occurred most frequently?'; or we may be asking about how a particular war came about (1996, p. 4). Lumping these questions together inevitably leads to complicated and unsatisfactory answers.

An additional reason for complex answers to the question of war causation is that the concept of 'causation' itself is fraught with philosophical difficulties. One may note that X is often a prelude to Y, but that is not at all the same as proving that X caused Y. Various writers, for example, noting that wars are often preceded by arms races between the belligerents, have claimed that arms races *cause* wars. Arms races sometimes cause war, but an *automatic* connection has not been conclusively demonstrated. Arguably, human beings do not fight because they have weapons; they acquire weapons because they already wish to fight. And it is worth pointing out that not all arms races have led to war. Anglo-French naval competition in the nineteenth century led to the Entente Cordiale, while the Cold War arms race between the United States and the Soviet Union led to a deterrent stalemate and one of the most prolonged periods of peace in European history.

Given the difficulties inherent in the problem of causation, some writers (particularly historians) have preferred to talk about the 'origins' of wars rather than 'causes'. They believe that the best way of explaining why wars occur is to describe how they come about in terms of the social context and events from which they spring. Thus, if we are investigating the causes of the Second World War, we need to look at the Treaty of Versailles, the world depression, the rise of Hitler, German rearmament, the foreign policies of Britain and France, etc. When we have done this we are well on the way to understanding the circumstances that led to the Second World War. Those who emphasize the 'origins' of wars hold the view that telling the story of how they come about is as close as we can get to understanding why they come about.

Historians who favour this very specific 'case-study' approach to the identification of the causes of war tend to believe that since every war is a unique event with unique causes, the causes of war are as numerous as the number of wars. Hence, providing an authoritative answer to the question 'What are the causes of war?' would involve a detailed examination of every war that has ever occurred. The uniqueness of every war means that there is nothing in general to be said about them. For investigations concerned with the causes of individual wars this is a fair point. Nevertheless, while acknowledging the uniqueness of individual wars, most political scientists see merit in shifting the level of analysis from the particular to the general so that we can see patterns and similarities between the causes of one war and another. At this more general level of analysis we may identify some causes which are common to many, if not all, wars.

'Immediate' and 'underlying' causes

One of the most useful distinctions to be drawn between the various causes of war is between 'immediate', proximate causes and 'underlying', more fundamental causes. Immediate causes, the events that trigger wars, may be trivial, even accidental. For example, the spark that ignited the First World War was the assassination of the Austrian Archduke Franz Ferdinand who was visiting Sarajevo and being driven in an open car.

The death of the Archduke was a tragedy, but it was essentially a trivial event, and no one seriously believes that its occurrence provides an adequate explanation for the momentous events that followed. What is more, it was an 'accident' which might easily not have happened. If the duke's chauffeur had not deviated from the planned route and then stopped the car to rectify his error, the assassin would not have had an opportunity to shoot the Archduke and his wife. The assassination was undoubtedly the immediate cause of the First World War, and it is true to say that if it had not happened the war which broke out in 1914 would not have happened. But there is plenty of evidence to suggest that a war would have occurred sooner or later. In 1914 war was in the air: Europe was divided by hostile alliance systems; tensions were rising; mobilization timetables were pressuring decision makers; and an arms race was under way. In short, the background circumstances were highly inflammable, and if the assassination of Franz Ferdinand had not set the powder keg alight, sooner or later something else probably would have provided the spark. Most commentators believe that a useful examination of the causes of the First World War should pay more attention to those underlying causes than to the immediate triggering events.

Emphasis on underlying causes is a **structural interpretation** in the sense that it emphasizes the importance of international circumstances rather than deliberate state policies in causing wars. It suggests that statesmen are not always in control of events; they sometimes find themselves caught up in a process which, despite their best intentions, pushes them to war. Suganami has pointed out that there are occasions when 'the background conditions appear already so war prone that the particular path through which the actual war broke out seems only to have been one of a number of alternative routes through which a war like that could have been brought about' (1996, p. 195).

Of course, background conditions are not always a reliable barometer of the danger that war will break out. In some situations the setting seems relatively benign and responsibility for war is more easily allocated to the particular policies followed by the governments involved. Wars often come about as a result of aggressive, reckless, thoughtless, and deliberate acts by statesmen. It would be impossible to discuss the causes of the Second World War, for instance, without drawing attention to the persistently aggressive behaviour of Hitler and the weak, appeasing policies of Chamberlain. Similarly, the actions of Nasser in seizing the Suez Canal and Eden in responding to it with military action were critically important causes of the Suez war. The same point can be made about both the Falklands war and the Gulf war. In the case of the Falklands, the Argentinian decision to invade South Georgia and Margaret Thatcher's decision to resist seem at least as important as any 'structural' causes that might be identified. In the case of the Gulf war, Saddam Hussein's decision to seize territory in Kuwait and the decision of Western governments not to allow him to get away with it were more obvious causes of the Gulf war than any background circumstances.

'Efficient' and 'permissive' causes

Another useful distinction lies between 'efficient' and 'permissive' causes of war. 'Efficient' causes are connected to the particular circumstances surrounding individual wars. War may result because state A has something state B wants. In this situation the

'efficient' cause of the war is the desire of state B. Examples of these causes abound. The efficient cause of the Gulf war between Iraq and Iran was the desire of Saddam Hussein to regain from Iran the Shatt-al-Arab waterway; the efficient cause of the 1990 war between Iraq and the Western coalition was Saddam's desire to acquire Kuwaiti territory and resources.

'Permissive' causes of war are those features of the international system which, while not actively promoting war, nevertheless allow it to happen. In this context, the fact that we live in a world of independent sovereign states with no authority above them, and no institutions sufficiently powerful to regulate their relations, is a 'permissive' cause of war. Kenneth Waltz is renowned for the emphasis he puts on 'permissive' rather than 'efficient' causes of war (1959). Although the causes of war are bewildering in their variety, notes Waltz, the most persuasive explanation for it is to be found in international anarchy—the fact that in an ungoverned international system there is nothing to prevent conflict from occurring. And because there is nothing to prevent war there is, in international relations, a permanent expectation of violence and a permanent sense of insecurity which pushes states to behave aggressively despite whatever peaceful intentions they may have. Waltz uses Rousseau's famous 'stag hunt' analogy (see Box 3.2) to show that warlike behaviour arises not primarily from any defect in human nature or some inherent flaw in states, but from the predicament in which leaders find themselves (1959, pp. 167–8). In the face of systemic or structural inadequacy, war cannot be avoided forever and is always just around the corner.

Kenneth Thompson has made the same point in a slightly different way (1960, pp. 261–76). He imagines a situation where, during the rush hour, someone waiting for a train on the platform of an underground railway station finds himself being pushed by a surging crowd of fellow travellers towards the electrified line. Our passenger is a good man who means no harm. What should he do? The Christian ethic tells him to turn the other cheek, but if he does he will end up dead on the rail tracks. And so our good man

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BOX 3.2 JEAN ROUSSEAU'S 'STAG HUNT' ANALOGY

Rousseau imagines a situation in which several solitary and hungry hunters existing in 'a state of nature' where there is neither law, morality, nor government, happen to come together. Each of them recognizes that his hunger could be satisfied by a share of a stag, and so they 'agree' to cooperate to catch one. In Rousseau's words,

If a deer was to be taken, everyone saw that in order to succeed, he must abide faithfully by his post; but if a hare happened to come within reach of any of them, it is not to be doubted that he pursued it without scruple, and, having seized his prey, cared very little if by so doing he caused his companions to miss theirs.

J. J. Rousseau, 'A Discourse on the Origin of Inequality', in *The Social Contract and Discourses*, edited by G. D. H. Cole (London: J. M. Dent, 1993), p. 87.

The point of the story is that in conditions of anarchy, the hunter who grabbed the hare could not feel confident that one of his fellow hunters would not do likewise if presented with the same opportunity, in which case he would go hungry. Given this predicament the sensible thing to do is to behave selfishly and seize the hare.

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kicks and struggles and fights to stay alive. He behaves in this aggressive way not because he is wicked or violent, but because he finds himself in an environment where he cannot afford to be good. The Sermon on the Mount is not much use if you live in the jungle. And so it is with states: because they exist in a system where others behave badly, doing likewise is the only way to survive.

If the main cause of war is to be found in the anarchic international system in which sovereign states pursue their interests without the constraint of world government, then an essential condition of peace is the transformation of that system from one of competing states to a unified world ruled by a single authority sufficiently powerful to compel peaceful behaviour. The trouble with this recommendation is that there is no practical way of implementing it. We did not *choose* to live in the world of independent states which emerged from the Peace of Westphalia in 1648 and we cannot now choose not to live in it. Though the international system is constantly changing, for all practical purposes it is a *given*, something we have to accept as a fact of life. We are where we are, and whatever conditions of peace we may recommend must take that into account. Another reason for scepticism that 'world government' will solve the problem of war is that even if we achieved it we might not like it. World government might turn out to be world dictatorship and interstate wars might simply become civil wars.

Those who regard the ungoverned international system as the root cause of war often compare it with Hobbesian anarchy; but in reality the society of states bears little resemblance to Hobbes's 'state of nature'. Although it is not an integrated society comparable to domestic society, it is neither chaotic, nor wholly unpredictable. States do not live in conditions of permanent terror. International society is a regulated, rule-governed environment in which states can build upon their common interests, and in which international organizations, customs, habits, mores, and laws built up over hundreds of years moderate and order their behaviour. Of course, no one would claim that the world of sovereign states is the best of all worlds; it may not even be the best of all possible worlds. But it is better than some imaginable alternatives—even better, perhaps, than world government—and we ought not to try to jettison it without being very sure that what succeeds it will be an improvement.

'Necessary' and 'sufficient' causes of war

Various writers have found it useful to distinguish between **'necessary'** and **'sufficient'** causes of war.[1] A *'necessary'* condition for war is one that *must be present* if war is to occur. In other words, if war cannot break out without that condition existing, then it is a necessary condition. The existence of armaments is a necessary condition of war because without them no war could be fought. For wars to occur it also is necessary for human beings to be organized in discrete collectives—states, tribes, ethnic groups, nations, or factions. Additionally, it is a necessary condition of war that there be no effective mechanism for preventing it. An effective *world* government, for example, would make it impossible for interstate wars to occur, and an all-powerful *state* government would make it impossible for civil wars to occur. Thus, the absence of these mechanisms is a necessary condition of war.

There is an element of tautology in the above analysis in the sense that if we define war

as organized violence between groups, then it is obvious that wars cannot occur if human beings are not organized in groups that have the capacity for organized violence. It is equally obvious that wars cannot occur if there is a mechanism that prevents them. More controversially, it has been suggested that one of the necessary conditions of war is that at least one of the parties to it must have a non-democratic government.

A *'sufficient'* cause of war is one that, if present, *guarantees* the occurrence of war. A is a sufficient cause of B if B always occurs whenever A exists. If two states hate each other so much that neither can tolerate the independent existence of the other, then that is a sufficient cause of war which makes war between them inevitable. But it is not a *necessary* condition of war since many wars occur between states which do not share that degree of hatred and are perfectly content with each other's continued existence as independent states in international society. Clearly, a cause of war can be sufficient without being necessary, and the converse of this also is true—a cause can be necessary without being sufficient. For example, the existence of weapons is a necessary condition of war, but it is not a sufficient cause of war since even the existence of high levels of armaments does not always lead to war.

The categories 'necessary' and 'sufficient' do not cover all the possible causes of war. We must not fall into the trap of thinking that the causes of war must be *either* necessary *or* sufficient because there are many causes which are *neither* necessary *nor* sufficient. For example, the desire of statesmen to annex territory belonging to neighbouring states is a common cause of war but it is neither a necessary nor a sufficient cause. It is not a necessary cause because many wars are fought for reasons which have nothing to do with territory, and it is not a sufficient cause because the desire to annex territory may not be acted upon—perhaps because of deterrence.

KEY POINTS

- The idea that war is endemic in the human condition is psychologically unpalatable, but it may nevertheless be true. Even if human *nature* cannot be changed, it may be possible to modify human *behaviour* so that wars are less frequent.

- Since there are many different kinds of war, it is not surprising that no single cause of war can be identified.

- It is often useful to distinguish between underlying causes of war and the events that trigger them.

- *Efficient* causes of war relate to the particular circumstances surrounding individual wars. *Permissive* causes of war are those features of the international system which, while not actively promoting war, allow it to happen.

- A 'necessary' condition of war is one which must be present if war is to occur. A 'sufficient' cause of war is one which, if present, guarantees the occurrence of war.

Human nature explanations of war

There is widespread agreement that one of the things that distinguishes human beings from animals is that most of their behaviour is **learned** rather than **instinctive**. No one knows what the relative percentages are and there is an ongoing debate about the relative importance of 'nature' versus 'nurture' (heredity versus environment) as a determinant of human behaviour. Inevitably this debate has raised the question of whether war is an example of 'innate' or 'learned' behaviour. If it is *innate* then we must accept it, since in any reasonable timescale biological evolution is too slow to modify it. If it is learned, however, then it can be unlearned and there is hope for us all. Liberal thinkers prefer to emphasize the importance of 'nurture' and are naturally attracted to the idea that aggression and war can be tamed. Conservative thinkers tend to throw their weight behind 'nature' and are therefore sceptical about the possibilities of ridding the world of war.

Though they are disposed to minimize its significance, even committed liberals admit that there is a genetic, instinctive element in human behaviour. We do not start with clean slates on which life's experiences are written to make us what we are. We come with genetic baggage, biologically programmed, with built-in drives and instincts, one of which, it is argued, is a predilection for aggression and violence. In a celebrated exchange of letters in 1932 both Albert Einstein and Sigmund Freud agreed that the roots of war were to be found in an elemental instinct for aggression and destruction. Einstein thought that 'man has in him an active instinct for hatred and destruction', and Freud believed he had identified a 'death instinct' which manifested itself in homicide and suicide (Freud, 1932). In the 1960s, ethological and socio-biological research brought new life to 'instinct' theories of aggression. Konrad Lorenz argued, largely on the basis of his observations of the behaviour of birds and fish, that an aggressive instinct is embedded in the genetic make-up of all animals (including man), and that this instinct has been a prerequisite for survival (1976). Robert Ardrey, in *The Territorial Imperative*, reached a similar conclusion and suggested a 'territorial' instinct to run alongside Lorenz's four instincts—hunger, fear, sex, and aggression (1966). Edward Wilson in *On Human Nature* noted that human beings are disposed to react with unreasoning hatred to perceived threats to their safety and possessions, and he argued that 'we tend to fear deeply the actions of strangers and to solve conflict by aggression' (1978, p. 119). (See Box 3.3.)

Although Richard Dawkins in his book *The Selfish Gene* has shifted the level of analysis from the individual to the genes that help make him what he is, he too is under no illusions about human nature. His argument is that 'a predominant quality to be expected in a successful gene is ruthless selfishness. This gene selfishness will usually give rise to selfishness in individual behaviour' (1976, p. 2). 'Much as we might wish to believe otherwise, universal love and welfare of the species as a whole are concepts which simply do not make evolutionary sense' (1976, pp. 2–3). This analysis leads Dawkins to the bleak conclusion that 'if you wish . . . to build a society in which individuals cooperate generously and unselfishly towards a common good, you can expect little help from biological nature' (1976, p. 3).

The 'human nature' explanation of war is a persuasive one, but at least two qualifications need to be made about it. First, we need to ask whether the evidence produced by

BOX 3.3

One may seek in political philosophy answers to the question: Where are the major causes of war to be found? The answers are bewildering in their variety and in their contradictory qualities. To make this variety manageable, the answers can be ordered under the following three headings: within man, within the structure of separate states, within the state system.

Kenneth Waltz, *Man, the State and War*

There is deceit and cunning and from these wars arise.

Confucius

Whatever can be said in favour of a balance of power can be said only because we are wicked.

Jonathan Dymond

A steadfast concert for peace can never be maintained except by a partnership of democratic nations. No autocratic government could be trusted to keep faith within it or observe its covenants . . . Only free peoples can hold their purpose and their honor steady to a common end and prefer the interests of mankind to any narrow interests of their own.

Woodrow Wilson

It is quite true that it would be much better for all men to remain always at peace. But so long as there is no security for this, everyone having no guarantee that he can avoid war, is anxious to begin it at the moment which suits his own interest and so forestall a neighbour, who would not fail to forestall the attack in his turn at any moment favourable to himself.

Rousseau

Force is a means of achieving the external ends of states because there exists no consistent, reliable process of reconciling the conflicts of interest that inevitably arise among similar units in a condition of anarchy.

Kenneth Waltz

the study of animals is really relevant to the behaviour of human beings. The animal behaviourists say it is, because man is simply a higher animal, connected to the rest of the animal kingdom by evolution. To deny that human beings have instincts in the same way that animals do is to deny the almost universally accepted principle of evolution, which links all life on the planet. Even so, we cannot help wondering whether the kind of 'cross-species' generalization engaged in by biologists is valid. After all, human beings are very different from animals. They are more intelligent. They have a moral sense. They reflect about what they do; they plan ahead. Some would claim that these differences are so important that for all intents and purposes they lift man out of the animal world and reduce his instincts to no more than vestigial significance. Waltz notes in his book *Man, the State and War*, that arguing that human nature causes war is not very helpful since if human nature causes war then, logically, it also causes everything else that human beings do. In his words, 'human nature may in some sense have been the cause of war in 1914, but by the same token it was the cause of peace in 1910' (1959, p. 28). In other words, human nature is a constant and cannot explain the wide variety of activities that humans exhibit.

'Frustration' explanations of war

Social psychologists, while still locating war in 'man', offer explanations for its occurrence which rely less on instinct and more on **socially programmed human behaviour**. Typically, they argue that aggression is a result of frustration. When individuals find themselves thwarted in the achievement of their desires, goals, and objectives, they experience frustration which causes pent-up resentment that needs to find an outlet— and this frequently takes the form of aggressive behaviour which, in turn, has a cathartic effect of releasing tension and making those who engage in it feel better. Usually aggression is levelled at those who cause the frustration, but sometimes it is vented against innocents who become scapegoats. This psychological process of transferring aggression to a secondary group is called '**displacement**'. Sometimes individuals project their frustrated desires and ambitions on to the group or collective, be it tribe or state, to which they belong. In the words of Reinhold Niebuhr, 'the man in the street, with his lust for power and prestige thwarted by his own limitations and the necessities of social life, projects his ego upon his nation and indulges his anarchic lusts vicariously' (1932, p. 93).

There is a sense in which the '**Frustration/Aggression' hypothesis**, which emphasizes the connection between violence and the failure of human beings to achieve their objectives, is somewhat more optimistic than 'instinct' theories of aggression. Although frustration in life is unavoidable, it may be possible either to channel aggression into harmless activities like sport (psychologists call this sublimation), or to organize society in ways which minimize frustrations (sociologists call this social engineering).

'Misperception' explanations of war

Accepting that wars cannot occur unless statesmen decide to wage them, many believe that decisions to go to war are often the result of misperception, misunderstanding, miscalculation and errors of judgement. Essentially, those who think in this way regard wars as *mistakes*, the tragic consequences of failing to appreciate things as they are. This being the case, they are caused more by human frailty or fallibility than malice. Robert Jervis (1976), building on the ideas of Kenneth Boulding (1956), has contributed enormously to our understanding of these **psychological causes of war**. He makes the point that in order to make sense of the world around us, all of us develop images of reality through which we filter the welter of information that bombards our senses. These 'images' of reality are more important than reality itself when it comes to determining our behaviour; they act as a distorting lens which inhibits our ability to see reality as it is and predispose us to judge the world in ways that confirm our pre-existing concepts.

Critically important misperceptions likely to lead to war include mistaken estimates of both enemy intentions and capabilities, inaccurate assessments of the military balance between adversaries, and failures to judge the risks and consequences of war properly. Quite frequently these kinds of misperceptions are made by both sides involved in a conflict. For example, Greg Cashman has argued that in the Gulf war,

Saddam Hussein may have perceived a threat from Kuwait's reluctance to allow Iraq to cancel its debts and its unwillingness to pump less oil. He may even have perceived a joint American-Israeli-British conspiracy to deny Iraq sophisticated weaponry. . . . On the other hand, leaders in virtually

all of the Middle East capitals underestimated the degree of threat posed by Iraq and were taken by surprise when Kuwait was invaded. Thus, while Iraqi leaders overestimated the degree of threat to their interests, their opponents underestimated the hostility of Iraq, (1993 p. 63).

But perhaps the most critical misperception of all was Saddam Hussein's failure to anticipate Western resolve and the creation of a powerful military coalition against him.

Before the Second World War, Hitler mistakenly believed that Britain would not fight and Chamberlain mistakenly believed that Germany could be appeased by concessions. Other delusions and misconceptions that contributed to the outbreak of war in 1939 have been identified by A. J. P. Taylor. Mussolini was deluded about the strength of Italy; the French believed that France was impregnable. Churchill believed that Britain could remain a great power despite the war, and Hitler 'supposed that Germany would contend with Soviet Russia and the United States for mastery of the world' (Nelson and Olin 1979, pp. 153–4). In Britain hardly anyone expected that German blitzkrieg tactics would bring France down in a matter of weeks, and throughout Europe people grossly overestimated the power of strategic bombing. Given this plethora of misunderstandings, misjudgements, and misperceptions, it is easy to argue that statesman stumbled into the Second World War because they were out of touch with reality.

Much the same point can be made about the Falklands war. Misperceptions abounded. Britain seriously misinterpreted Argentine intentions with respect to invasion, and Argentina badly misjudged Britain's determination to resist. For years the two governments had been involved in intermittent negotiations about a possible transfer of sovereignty, and, though little progress had been made, the Conservative government could not believe that the Argentine Junta would seize South Georgia before the possibilities of negotiation had been exhausted. What the British government failed to appreciate was the significance of the Malvinas in the Argentine psyche and the domestic pressures to act that this put on President Galtieri and Dr Costa Mendez. For its part, the government of Argentina could not believe that at the end of the twentieth century a Eurocentric, post-colonial Britain was prepared to spill blood for the sake of a barren relic of empire 10,000 miles away.

There is a sense in which the misconceptions prevalent both in Germany before the Second World War and in Argentina before the Falklands war are understandable. The signals transmitted by the policy of appeasement may have suggested to Hitler that since he had got away with swallowing the Rhineland in 1936, and Austria and the Sudetenland in 1938, he could probably get away with aggression against Poland in 1939. In the case of the Falklands, the casual pace of British diplomacy and the absence of any serious military capability in the area may have suggested to the Argentines that Britain was not much interested in the fate of the Falkland Islands and was unlikely to defend them. Perhaps, in both of these cases, it was not so much that signals were *misread* but that *the wrong signals were sent*. Either way Britain's enemies made serious miscalculations of her intentions and war resulted.

If wars are caused by misperceptions and misunderstandings created by cognitive biases, then conditions of peace include more clear thinking, better communications between countries, and education. This thought lies behind the UNESCO motto 'Peace

Through Understanding', various 'education for peace' proposals, and the attempts that are frequently made to get potential adversaries around the conference table so that they can better understand each other. The basic idea is that if enemies can be brought to appreciate each other's perspectives, then the disputes that divide them will dissolve because they will be seen to be either illusory or not sufficiently serious to justify war. Perhaps we can detect in this approach relics of the idea of a natural 'harmony of interests' which would prevail if only misunderstandings were cleared up.

Before we are persuaded by this idea that wars can be prevented by removing misperceptions and misunderstandings, a word of warning is appropriate. It may not be possible to eradicate misperception from human affairs given the inherent cognitive weaknesses of the human mind. The need to simplify, the inability to empathize, the tendency to ethnocentrism, the reluctance to relinquish or recognize prejudices—all familiar human weaknesses—may make some degree of misperception inevitable. Herbert Butterfield recognized this point when he identified an 'irreducible dilemma' lying in the very geometry of human conflict. Butterfield imagined a situation in which two potential enemies, both armed, face each other. Neither harbours any hostile intent but neither can be sure of the intentions of the other. 'You cannot enter into the other man's counter fear' and 'it is never possible for you to realize or remember properly that since he cannot see the inside of your mind, he can never have the same assurance of your intentions that you have' (1952, p. 21). Butterfield makes the point that the greatest war in history could be caused by statesmen who desperately want peace but whose cognitive limitations lead them to misinterpret each other's intentions (1952, p. 19). (Discerning students will realize that Butterfield's 'ultimate predicament' has, in recent years, surfaced in the literature of strategic studies as 'The Security Dilemma'.)

Additionally, not all wars are caused by misperceptions and misunderstandings, even though they may be surrounded by them. Some wars—perhaps most—are rooted in genuine disagreement and conflicting interests, and in these cases discussions between enemies simply promote a better understanding of the disputes which divide them. Indeed, in some situations improved understanding may actually exacerbate the divisions between adversaries. When it was suggested to him that international hatred and suspicion could be reduced by getting nations to understand one another better, Sir Evelyn Baring, British governer in Egypt between 1883 and 1907, replied that 'the more they understand one another the more they will hate one another' (Waltz 1959, p. 50). Perhaps it can be argued that for most of the 1930s Britain was at peace with Germany precisely because the British did not understand Hitler. When, in September 1939, the penny finally dropped, Britain declared war on Germany.

Conscious and unconscious motives for war

The trouble with all these explanations that locate the causes of war within 'man' is that those leaders and statesmen who actually declare wars would almost certainly offer quite different explanations for their decisions. Hitler, if he had been asked why he attacked Poland on 1 September 1939, is unlikely to have replied that he was acting instinctively, or that he was frustrated or a victim of misperception. He would almost certainly have offered rational, practical reasons to do with the plight of Germans in Danzig and the

Polish corridor, and the iniquitous way in which the politicians at Versailles had redrawn the map of Europe to Germany's disadvantage. This discrepancy between the explanations of war offered by practitioners and those put forward by philosophers and scientists suggests that it may be useful to distinguish between **conscious** and **unconscious** motives for war.

National leaders have a Clausewitzian, **'instrumental' view of war**. They regard it as a rational tool for the implementation of policy, a technique that is available for practitioners to use in appropriate circumstances for the pursuit of national interests. In other words, officials generally believe that war results from a calculated, purposive, *conscious* decision. But philosophers and scientists trying to look behind a leader's goal-orientated acts often suggest that war results from *unconscious* drives and weaknesses in the human psyche of which practitioners may be unaware but which nevertheless push them towards war.

Those who regard war simply as an instrument of policy, a consequence of rational decisions taken in the national interest, underestimate the pressures and constraints—from public opinion, nationalist sentiment, alliance commitments, and the momentum of events—that may push politicians towards war. They also may make the mistake of thinking that once the costs and consequences of war have been made clear to politicians they will refrain from it. Norman Angell spent much of his life pointing out, quite rightly, that 'wars do not pay', that they are not in the national interest, and that even the victors are usually losers (1914). He thought that once this basic fact had been grasped wars would cease. Sir Norman, however, failed to appreciate two things. First, he did not consider that wars are not always a matter of rational calculation or cost–benefit analysis. Sometimes wars are a kind of madness, explosions of violence far removed from rational policy. Herman Rauschning, for example, argued that the National Socialist Movement in Germany during the 1930s was impelled towards a war of destruction by its own inherent madness (1939). The second weakness of Angell's analysis is that although he was right to highlight the disastrous economic consequences of war, he was probably wrong to conclude that waging war was therefore irrational and not in the national interest. Victors may be losers as a result of the wars they fight, but refusing to fight may make them even bigger losers in the long run. Britain, a victor in the Second World War, emerged from it permanently weakened, but if Hitler had not been stopped Britain probably would have ended up in an even worse position. Waging war against Germany certainly 'did not pay', but it was still the rational choice of the less disastrous of two costly outcomes.

'Group' explanations of war

Though embarked upon by individual human beings, war, by definition, is a **group activity**. It is waged by human collectives—factions, tribes, nations, states, and even perhaps by 'civilizations'. This has led some to shift the responsibility for war from human beings to the group within which they live and to which they owe varying degrees of allegiance. Those who argue in this way believe that there is nothing much wrong with human beings per se, but they are corrupted by the social structures in which they live. In the words of Friedrich Nietzsche, 'Madness is the exception in individuals but the rule in

groups'. Essentially, the argument is that there is something about human collectives which encourages violence.

Perhaps the trouble starts with the sense of difference that we all feel between 'us' and 'them'. Any time people can make a distinction between those who belong to their own collective grouping—be it tribe, state, or nation—and other groups with which they cannot identify easily, they have laid the foundation for conflict. It is all too easy for a group to slide from recognizing that it is different from other groups to believing that it is superior to them. Hence, this sense of differentiation—what Suganami calls 'discriminatory sociability' (1996, p. 55)—readily leads to group selfishness, inter-group conflict, and ultimately war. As Neibuhr once observed, 'altruistic passion is sluiced into the reservoirs of nationalism with great ease, and made to flow beyond them with great difficulty' (1932, p. 91).

G. Le Bon was one of the earliest social psychologists to notice that the behaviour of social groups is different from—and usually worse than—the behaviour of the individuals comprising them. He developed the idea of 'crowd psychology', that in a 'crowd' a new entity or collective mind comes into being. He believed that while in groups, individuals lose their normal restraints, become more suggestible, more emotional, and less rational. What is more, groups have reduced feelings of responsibility, because the more responsibility is diffused in 'crowds', the less heavily it weighs on each individual. Since responsibility is everywhere (and therefore nowhere), blame cannot be allocated specifically, and this frees human collectives from normal moral restraints (1897: p. 41). This thought was neatly captured in the title of Niebuhr's classic *Moral Man and Immoral Society*. Eric Hoffer, in discussing the appeal of mass movements, makes the same point very graphically, 'When we lose our individual independence in the corporateness of a mass movement, we find a new freedom—freedom to hate, bully, lie, torture, murder and betray without shame or remorse' (1952: 118).

Human beings always have lived in differentiated groups and it is unlikely that this will change in the foreseeable future. The interesting question is whether some groups are more war prone than others. In the context of interstate wars, for example, are capitalist states more warlike than socialist states or vice versa? There is no clear answer to that question. Can we argue that democratic states are more peaceloving than authoritarian states? Again there is no clear answer. The historical evidence suggests that 'democracies fight as often as do other types of states' (Kegley and Wittkopf 1997, p. 358). In the late 1990s, as wars in the Gulf and the former Yugoslavia have shown, democratic states also have demonstrated some enthusiasm for wars of intervention in support of human rights. This current fashion for waging wars in support of liberal values does not augur well for a peaceful world.

Various observers have noted, however, that democracies seldom, if ever, *fight each other*. Michael Doyle, for example, has argued that liberal states are more peacefully inclined towards each other because their governments are more constrained by democratic institutions, and because they share the same democratic values. Commercial interdependence between liberal states also gives them a vested interest in peace (1983 and 1986). If Doyle and those who share his views are right, one of the conditions of peace is the spread of democracy—a trend that has gathered pace particularly since the end of the Cold War. For the first time ever, almost half of the world's governments are

now democratic. The thesis that the spread of democracy will promote peace is no more than plausible, however, and it would be unwise to accept it uncritically.

KEY POINTS

- Some believe that human beings are genetically programmed towards violence, but there is an ongoing debate about whether war is an example of 'innate' or 'learned' behaviour.

- Social psychologists have argued that aggression is the result of frustration. Some believe feelings of aggression can be channelled into harmless activities like sport.

- Wars that result from misperceptions, misunderstandings, and miscalculations by statesmen might be prevented by better communications and more accurate information.

- Psychologists, trying to look behind statesmen's decisions, tend to see war as a result of unconscious drives and weaknesses in the human psyche. Practitioners are unlikely to agree.

- Some believe that there is something about human collectives that encourages violence. There is some evidence, however, that though democratic states fight as frequently as other states, they do not fight each other.

Wars 'within' and 'beyond' states

Whether its decline is connected to the spread of democracy or not, *interstate* violence now seems to be less of a problem than it did just a few years ago. But *intra-state* war, particularly ethnic war, has become much more of a problem. (See Chapter 9.) Samuel P. Huntington also has alerted us to the prospect of war between 'civilizations'. Ethnic groups and tribes, once contained, even suppressed, within states have suddenly erupted on to the political scene, reviving ancient racial hatreds and creating mayhem in countries as diverse as Yugoslavia, Somalia, and Indonesia. What is particularly horrifying about ethnic wars is that people are brutalized and killed not because of anything they have done, not even because of their politics, but simply because of who they are. That is what is so terrible about the persecution of the Tutsis in Rwanda, the Tamils in Sri Lanka, the Kurds in Iraq, the Muslims in Bosnia, and the Albanians in Kosovo. Ethnic wars are quite different from Clausewitzian politically motivated conflicts where the belligerents disagree about something and seek to resolve their disagreement by interstate war—an activity conducted according to moral and legal rules. It may be going too far to describe run-of-the-mill interstate wars as rational and civilized, but there is a grain of sense in the thought. Ethnic wars are quite different. They are not about the pursuit of interests as normally understood. They are about malevolence and they are unrestrained by any legal or moral rules. '**Ethnic cleansing**', like 'the final solution', is surely one of the most

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BOX 3.4 SOME 'FACTS' ABOUT WAR

- War is difficult to define. Although there is agreement that war involves organized military violence, it is not clear how much violence there has to be before the term 'war' is justified.
- Because of this definitional problem, estimates of the number of wars under way at any given time vary—sometimes significantly. The Stockholm International Peace Research Institute (SIPRI) listed 31 major conflicts in 26 different locations during 1998. The International Institute of Strategic Studies (IISS) counted 35 major conflicts for the year 1998–9. The Center for Defense Information in Washington counted 38 major conflicts in 1999, and listed 14 conflicts 'in suspension' that had the potential to restart quickly.
- Since 1945 UNESCO has counted over 150 conflicts throughout the world, and has calculated that the number of deaths caused by war in the post-war period is around 20 million (among 60 million total casualties) of whom most are civilians.

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sinister phrases to enter the political vocabulary of the twentieth century.[2] See Box 3.4 for some 'facts' about war.

One of the reasons for the recent upsurge of ethnic violence is to be found in the failure of modern states to separate warring factions. It is ironic that authoritarian governments, so frequently blamed for interstate wars, were instrumental in preventing civil wars in countries like Yugoslavia and the Soviet Union. Hobbes's Leviathian may have its attractions if the alternative is genocidal violence. If the thousands of ethnic groups that exist in the world can no longer be contained within nation states, then we face the break-up of international society into a myriad of micro-groups. The consequences of 'Balkanization' on this scale are unlikely to lead to a more peaceful world.

Wars between states and wars between nations and tribes within states are depressingly familiar, but the idea that future conflicts in global politics will occur between civilizations is a new one. In a provocative and influential article in *Foreign Affairs*, Huntington predicted that the fundamental source of future conflict will be **cultural**. 'The fault lines between civilizations would be the battle lines of the future' (1993a, p. 22). In Europe, for example, as the ideological divisions of the Cold War disappeared, the age-old cultural divisions between Western Christendom on the one hand and Orthodox Christianity and Islam on the other reappeared. As W. Wallace has suggested, 'the most significant dividing line in Europe may well be the eastern boundary of Western Christianity in the year 1500'.[3] This cultural fault weaves its way from the Baltic to the Mediterranean and conflict along it is to be expected.

Huntington argues that a civilization is 'the highest cultural grouping of people and the broadest level of cultural identity people have' (1993a p. 24). He has distinguished eight civilizations—Western, Japanese, African, Latin American, Confucian, Hindu, Islamic, and Slavic Orthodox—that differ from each other in terms of their attitudes towards democracy, free markets, liberalism, church-state relations, and international intervention. The differences between civilizations on these issues is deeper than those between states or ideologies. As a result, international consensus and agreement will

become increasingly difficult to achieve. Among the reasons for thinking inter-civilizational conflict is likely is that in many parts of the world 'Western' values are being challenged. There is a resurgence of religion and fundamentalism that has widened the gulf between peoples. The 'communications revolution' also has served to make people more aware of the differences that divide them.

KEY POINTS

- As interstate war has waned, intra-state conflict has become more frequent.
- Ethnic conflicts do not easily fit the Clausewitzian model. They are particularly violent and people are often killed because of who they are rather than because of their behaviour and politics.
- In the future, some writers suggest, wars may be between 'civilizations' rather than between states or ethnic groups.

Conclusion

There is no shortage of 'cures' for the 'disease' of war. Some are bizarre. For example, Linus Pauling once suggested that wars are caused by a vitamin deficiency and that we could eat our way out of aggression by swallowing the appropriate tablets. Others—like calls to change human nature, to reconstruct the state system, to redistribute equitably the world's wealth, to abolish armaments, or to 're-educate' mankind—follow with faultless logic from the various causes of war which scholars have identified. But since there is no prospect of implementing them in the foreseeable future, in a sense they are not solutions at all. Henry IV's reputed comment on an equally impractical proposal for peace is still appropriate, 'It is perfect', the king said, 'Perfect. I see no single flaw in it save one, namely, that no earthly prince would ever agree to it'. Hedley Bull has rightly condemned such solutions as 'a corruption of thinking about international relations and a distraction from its proper concerns' (1961, pp. 26–7).

We have to begin by recognizing the limits of what is possible. Maybe we can then edge our way forward by improving our techniques of diplomacy, communication, crisis avoidance, and crisis management; by developing a concept of enlightened self-interest which is sensitive to the interests of others; by extending the scope of international law and building on existing moral constraints; by learning how to manage military power through responsible civil-military relations and sophisticated measures of arms control; and by strengthening co-operation through international organizations and world trade. These are not spectacular, radical, or foolproof solutions to the problem of war. But they are practical steps that offer the possibility at least of reducing its frequency, and perhaps also of limiting its destructiveness. Even if war could be abolished, we need to remember that peace is not a panacea in which all human antagonisms are resolved. Peace is simply

the absence of war, not the absence of conflict. As the Cold War demonstrated, it is just as possible to wage peace as it is to wage war. Though 'peace' and 'war' are usually regarded as opposites, there is a sense in which both are aspects of the conflict that is endemic in all social life. War is simply a special kind of conflict that differs from peace only by its violent nature. The fact that peace is not a panacea explains why, when confronted with the stark choice of peace or war, leaders sometimes choose war. Some kinds of peace—under dictatorships, for example—may be worse than some kinds of war. In other words, although almost everyone wants peace, almost no one (apart from strict pacifists) wants only peace or peace at any price. If it were otherwise, the problem of war would disappear since as a last resort states can always avoid war by surrendering. Capitulation might bring peace, but it would almost certainly entail the loss of some of those other things that states want—like independence, justice, prosperity, and freedom. When it comes to the crunch, leaders may think that some fundamental values or goals are worth fighting for.

Ideally, of course, what people want is a worldwide just peace. Unfortunately, this is an unattainable dream. It would require agreement on whose justice is to prevail. It would require a redistribution of the world's wealth from the haves to the have-nots. Just peace would require religious and political movements—Muslims, Christians, Jews, Hindus, communists, capitalists—to tolerate each other. It also would require an end to cultural imperialism and an agreement that differing cultural values are equally valid. It would probably require the disappearance of borders and differentiated societies with their 'them' and 'us' mentalities. In short, it would require human beings to behave in ways in which they have never behaved. It would, to quote one scholar,[4] 'require an animal that is not what human beings are'.

Since 'justice' and 'peace' do not go together, statesmen will have to continue choosing between them. The pursuit of justice may require them to wage war, and the pursuit of peace may require them to put up with injustice. During the Cold War years, Western politicians, by abandoning Eastern Europe to its fate under Communism, thought probably rightly that peace was more important than justice. Since the end of the Cold War, they have tended to put justice before peace—witness the upsurge of violence caused by wars of intervention in support of human rights and democratic values. The critical question now is whether, in juggling the priorities of peace and justice, we have got the balance right, or whether our current enthusiasm for Western values and human rights implies an ever so slightly casual attitude to the problem of war. Perhaps, in the interests of peace, there is something to be said for the Realist policy of fighting 'necessary' rather than 'just' wars.

QUESTIONS

1. Which of the distinctions in Box 3.1 do you think is most useful for analysing the causes of war?
2. Do you think the spread of democracy will solve the problem of war?
3. To which would you allocate priority: the pursuit of peace or the pursuit of justice?

4. Is aggressive behaviour instinctive or learned?

5. How convincing is the argument that wars are a result of misjudgement and misperceptions?

6. Is war inevitable?

7. Is war an instrument of policy or an outburst of irrationality?

ENDNOTES

1. See, for example, G. Quester, 'War and Peace: Necessary and Sufficient Conditions' in R. O. Matthews, A. G. Rubinoff and J. G. Stein, *International Conflict and Conflict Management* (Scarborough, Ontario: Prentice-Hall, 1984), pp. 44–54.

2. For a comprehensive and brilliant account of ethnic conflict up to 1985 see D. L. Horowitz (1985), *Ethnic Groups in Conflict* (Berkeley, Los Angeles, London: University of California Press).

3. Quoted by Samuel P. Huntington 'The Clash of Civilizations', *Foreign Affairs*, Vol. 73, No. 3, (1993*a*) p. 30.

4. This comment by Professor Claude Phillips is quoted by R. P. Shaw and Y. Wong, *Genetic Seeds of Warfare: Evolution, Nationalism and Patriotism* (London: Unwin Hyman, 1985), p. 207.

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For studies of democracy and peace see H. Bull, *The Control of the Arms Race* (London: Weidenfeld & Nicolson, 1961); M. W. Doyle, 'Kant Liberal Legacies and Foreign Affairs', *Philosophy and Public Affairs*, 1983, 12; and 'Liberalism and World Politics', *American Political Science Review*, 1986, Vol. 80. Another interesting, if controversial, analysis of the relationship between civilizations and conflict is contained in S. Huntington, 'The Clash of Civilizations', *Foreign Affairs*, 1993, Vol. 72, No. 3. (1993*a*) and 'Response: If not Civilizations, What? Paradigms of the Post-Cold War World', *Foreign Affairs*, 1993, Vol. 72, No. 5 (1993*b*).

Two of the best studies of ethics and conflict are R. Neibuhr, *Moral Man and Immoral Society: A Study in Ethics and Politics* (New York and London: Charles Scribner's Sons, 1932); and K. Thompson 'Moral Purpose in Foreign Policy: Realities and Illusions', *Social Research*, 1960, Vol. 27, No. 3. See also A. L. Gowans, *Selections from Treitschke's Lectures on Politics* (London and Glasgow: Gowans and Gray, 1914).

PART TWO

The Evolution of
Joint Warfare

4 Land Warfare: Theory and Practice

Stephen Biddle

READER'S GUIDE

This chapter explores the relationship between ideas about how war on land should be conducted and the way high-intensity land warfare has actually been fought since 1900. How well or badly have theorists anticipated the demands of such wars, and why did their ideas succeed or fail? The chapter presents technological change as the central challenge facing modern theorists, and identifies a series of interrelated tactical and doctrinal responses that emerged in reaction to the high lethality of twentieth-century weapons. These responses emphasized cover, concealment, tight integration of suppressive fire and movement, depth, and heavy reliance on reserves. These concepts formed the foundation for most twentieth-century tactics and doctrine. Though theorists have periodically expected new weapons to invalidate this canon, such expectations have often been frustrated by subsequent combat experience; the most successful twentieth-century doctrinal systems have been among the most conservative. The chapter traces the relationship between theory and practice in four case studies: the European theatre in the two world wars, and the Middle Eastern conflicts of 1973 and 1991. The chapter ends by considering the prospects for revolutionary change in land warfare in the twenty-first century, and concludes that there remain powerful elements of continuity, as well as change, in the military experience of the twentieth and twenty-first centuries.

Introduction

The wealth, population, and natural resources of Europe, Asia, and the Middle East have been central stakes in modern warfare. Control of these assets can be sought in many ways. **Maritime blockade** threatens economic ruin via the disruption of commerce if target states do not comply with opponents' demands. **Strategic bombing** adds the prospect of direct destruction of cities, factories, transportation systems, electrical power supplies, centres of political control, or even hostile armies themselves as a lever to obtain political concessions from an opponent. **Guerrilla warfare** seeks political concession by a protracted campaign of ambush, sabotage, and terror, making states pay a heavy price to retain control of disputed territory. (See Chapter 9.) Each of these approaches is fundamentally **coercive** in nature: rather than seizing the stakes directly, aggressors seek to induce the opponent to *give them* their prize by threatening pain if the opponent refuses to comply. Each thus requires some degree of co-operation from the opponent to succeed; each also requires the ability to communicate a credible threat of future consequences if the target state withholds concessions.

Continentalist land warfare, by contrast, obtains objectives by seizing them directly—or by preventing an opponent from doing so. Continental strategy is thus an exercise of **brute force** in Thomas Schelling's terms: without the opponent's agreement or consent, resources are simply taken or kept by force of arms (see Box 4.1). Although the seizing of assets by brute force may itself be used coercively, brute force per se thus requires no co-operation from the opponent and is less dependent on credible communication of intent to the target state. As such, it has been the *ultima ratio* of modern strategy: where coercion fails, brute force on land has been the final arbiter of disputes.

What have been the key issues in the theory and practice of continental land warfare, and how have these issues affected the outcomes of war since 1900? This chapter explores the relationship between technological change and strategic adaptation in the conduct of war on land, and considers this relationship through the lens of the European theatre in the two world wars, and the Middle East wars of 1973 and 1991.

The First World War: The emergence of modern warfare

The First World War came on the heels of a series of dramatic technological changes. The industrial revolution had brought mass production, the substitution of machine for animal power, and dramatic improvements in metallurgy, agriculture, administration, and public health. By 1914, these developments led to enormous increases in the size and firepower of armies (see Box 4.2).

These changes posed major challenges for military planners. In Napoleon's day, attackers had room to manœuvre and could hope to outflank defenders or use feints to move them into exposed positions before risking an assault; by 1914, massive new armies created continuous fronts over entire national frontiers, choking off room for manœuvre

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> ## BOX 4.1 **THE DIFFERENCE BETWEEN BRUTE FORCE AND COERCION**
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> There is a difference between taking what you want and making someone give it to you, between fending off assault and making someone afraid to assault you, between holding what people are trying to take and making them afraid to take it, between losing what someone can forcibly take and giving it up to avoid risk or damage. It is the difference between brute force and . . . coercive diplomacy based on the power to hurt.
>
> The contrasts are several. The purely 'military' or 'undiplomatic' recourse to forcible action is concerned with enemy strength, not enemy interests; the coercive use of the power to hurt, though, is the very exploitation of enemy wants and fears. And brute strength is usually measured relative to enemy strength, the one directly opposing the other, while the power to hurt is typically not reduced by the enemy's power to hurt in return . . . Two sides cannot both overcome each other with superior strength; they may both be able to hurt each other. With strength they can dispute objects of value; with sheer violence they can destroy them . . .
>
> Coercion by threat of damage also requires that our interests and our opponent's not be absolutely opposed . . . Coercion requires finding a bargain, arranging for him to be better off doing what we want—worse off not doing what we want—when he takes the threatened penalty into account . . .
>
> The difference between coercion and brute force is as often in the intent as in the instrument . . . The Germans at Verdun perceived themselves to be chewing up hundreds of thousands of French soldiers in a gruesome 'meatgrinder'. If the purpose was to eliminate a military obstacle—the French infantryman, viewed as a military 'asset' rather than as a warm human being—the offensive at Verdun was a unilateral exercise of military forces. If instead the object was to make the loss of young men—not of impersonal 'effectives', but of sons, husbands, fathers, and the pride of French manhood—so anguishing as to be unendurable, to make surrender a welcome relief and to spoil the foretaste of an Allied victory, then it was an exercise in coercion.
>
> From Thomas C. Schelling, *Arms and Influence* (New Haven, Conn.: Yale University Press, 1966), pp. 2–5.

and eliminating assailable flanks. In Napoleon's day, bayonet charges could reasonably hope to overrun weakened defences; by 1914, massed frontal assaults over open ground had become suicidal. The new firepower—what Ernst Junger called the **'storm of steel'**—posed radical new challenges in an era of continuous fronts. How could armies survive this storm of steel long enough to accomplish any meaningful military mission?

Early experience of the new lethality in the Boer War of 1899–1902 and the Russo-Japanese War of 1904–5 triggered extensive debates in all European militaries over how to respond. Two broad approaches emerged almost immediately. The first used **cover and concealment** to reduce the attackers' exposure while advancing; the second used **suppressive fire** to keep the defenders' heads down while the attackers were exposed. Even before the Boer War had ended, for example, British tactics had shifted from massed attacks in line to 'open order' advances by short rushes, making use of the terrain to conceal dispersed attackers prior to brief dashes in the open from one covered position to the next. During periods of exposure, artillery and rifle fire would suppress defensive positions to prevent them from firing on the attackers.

Two problems were encountered, however, in the use of cover, concealment, and suppressive fire. First, the required infantry movements proved hard to control. Dispersion

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BOX 4.2 **TECHNOLOGICAL CHANGE BROUGHT RADICAL INCREASES IN THE SIZE AND LETHALITY OF TWENTIETH-CENTURY ARMIES**

1812	1912
• Napoleon 's Grande Armée numbers 600,000, the most capable in Europe.	• French Army numbers 1.6 million yet is only third-largest in Europe
• Muzzle-loading brass cannon can fire one 12-pound ball to a distance of 1,000 yards every 30 seconds.	• Steel breachloading field guns can fire one 18-pound shell to a distance of more than 12,000 yards every 10 seconds.
• Infantry battalion of 1,000 men with smoothbore flintlock muskets can project 2,000 musket balls to an effective range of 100 yards every minute.	• Infantry battalion of 900 men with magazine rifles and 4 machine guns can project over 21,000 rounds to an effective range of over 1,000 yards every minute.
• *Two* musket balls fired at each attacking soldier by a defending infantry unit of comparable size before attackers can close to bayonet range.	• *Two hundred* bullets fired at each attacking soldier by a defending infantry unit of comparable size before attackers can close to bayonet range.

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put more distance between leaders and led, making it hard for officers to keep their troops moving. Units could find cover but tended to remain there too long; attacks lost momentum and degenerated into desultory small arms exchanges at extended range as more and more troops went to ground and resorted to fire rather than movement. This provided time for defensive artillery to extinguish the stalled attack before it could close with the defence.

Second, it proved hard to control the needed suppressive fires without leaving the shooters too exposed to survive defensive counterfire. The key issue here was artillery support, which alone could provide the needed volume of fire. Artillery can fire directly over 'open sights' (that is, shooting with a flat trajectory at targets the gunners can see themselves), or it can fire *indirectly* (that is, shooting over intervening obstacles with an arced trajectory at targets the gunners cannot see). **Direct fire** is easier to control, since the gunners can see both the targets and their own infantry, making it much simpler to maintain suppressive fire until the infantry had almost overrun the target. Gunners could then lift their fire at the last minute to avoid killing their own troops. Direct fire, however, required the guns to move well forward and thus exposed them to defensive counterfire. **Indirect fire**, by contrast, allowed the guns to move to safer positions in the rear, but greatly complicated fire control since the gunners could no longer see the battle they supported. Indirect fire required forward observers who could see the targets to communicate firing instructions back to the blind gunners in the rear; this made it much harder to maintain accurate suppressive fire over the target until the last minute, since delayed, garbled, imprecise, or interrupted messages could result in either a fatal gap in suppressive coverage (if the fire lifted too soon or fell long), or casualties to one's own side (if the fire lifted too late or fell short).

When the Great War began in August 1914, these difficulties led to slaughter.

Suppressive fire was either inaccurate or unavailable; without it, assault units either were massacred in the open or became pinned down behind cover and were eventually wiped out by hostile artillery. Germany's attempt to evade French defences by marching through Belgium thus bogged down at the Battle of the Marne. France's attempt to break through German defences in the Battle of the Frontiers yielded trivial ground gains at the cost of horrifying casualties. By Christmas 1914, the front had ossified into a continuous line of trenches from the North Sea to the Swiss border.

Trench warfare prompted a rapid change in tactics. Prewar thought emphasized infantry as the primary arm of decision, with artillery as a secondary supporting weapon. By March 1915, this was completely reversed. Artillery would now destroy entrenched defences outright via massive preparatory barrages, with the infantry advancing afterwards merely to mop up the dazed survivors and take possession of their smashed trenches. As the French put it, '*l'artillerie conquiert, l'infantry occupiert*' (**the artillery conquers, the infantry occupies**). This was meant to overcome the problems of fire control and manœuvre control by decoupling fire from manœuvre and de-emphasizing the latter: if artillery could not be controlled precisely to suppress defenders while assault teams manœuvred, then perhaps it could annihilate defenders on its own from safe positions in the rear while friendly infantry stayed out of harm's way.

The new tactics proved little better. Preparatory barrages reached extraordinary intensity: the ten-day Allied bombardment before Messines in July 1917 dropped about 1,200 tons of explosives—in nuclear parlance, over a kiloton of explosive power—on every mile of German defensive frontage. Contrary to popular imagery, such barrages were not utterly futile. One would assume that nuclear-scale firepower could batter down a defence, and in fact it could. By 1917, such offensives routinely took the defenders' forward trench systems in the initial assault. But this was not sufficient to break through the opponent's position. Ironically, ground could be *taken* readily enough—the problem was *holding* it once taken. The same inability to co-ordinate artillery fire and infantry manœuvre that had doomed 1914's tactics now crippled their successors in 1915–17: the infantry that had advanced into the defender's trench system following the preparatory barrage was left on its own without effective supporting fire. Defenders who could tell the time and place of attack from the weeks-long offensive barrages would use this time to mass reserves and defensive artillery behind their initial trench system; these reserves then struck the unsupported, overextended attackers with an artillery barrage of their own, ejecting them from their gains with a subsequent counterattack by fresh infantry. Either side could advance as far as a pre-planned artillery programme could carry it, but neither could go any further, and neither could hold its gains against counterattack. The result resembled a form of **war on a tether**: the battle was actually quite fluid, but movement was limited to the reach of the preparatory artillery barrages on either side. Massive midwar offensives at the Somme, Verdun, Passchendaele, or the Chemin des Dames thus yielded no meaningful change in either side's positions.

Gradually, however, a new system of tactics emerged which replaced the prewar emphasis on infantry and midwar emphasis on artillery with a **combined arms** approach in which infantry and artillery co-operated as equals. In the new approach, surprise was restored by restricting the preparatory artillery programme to a brief but intense 'hurricane barrage' designed not to destroy but merely to suppress the defences. This

temporary suppressive effect was exploited by independently manœuvring infantry teams armed with hand grenades and portable light machine guns. These teams were trained to use covering terrain to find their own way through hostile defences via the path of least resistance. These independently manœuvring assault teams were better able to sustain their advance through the depths of a hostile defence than massed formations of infantry. Because the short barrage denied the defender advance warning of the time or place of attack, defenders found it much harder to amass sufficient reserves in time to repel the attack before it broke through their lines.

In fact, the new system was not really new: it represented a return to prewar ideas about how the combination of suppression and manœuvre could enable an advance in the face of the new firepower. But whereas the prewar armies were unable to master the technical problems associated with fire and manœuvre control, by 1918 the intricacies of controlling indirect fires and co-ordinating them with small-unit infantry movement had finally been worked out. Over the long months of stalemate, a process of trial and error had hammered out the systems of **'scientific' gunnery** and improved **small-unit leadership** and **training** needed to make the prewar ideas work.

The new techniques were first combined into a single system by the Germans. Unveiled at Caporetto on the Italian front in November 1917, these methods produced a series of Western Front breakthroughs in the German Spring Offensives of March–June 1918. The British and French armies pieced the new system together more slowly, but they eventually mastered important elements of it and employed these in the subsequent Allied offensives that prised the Germans out of the Hindenberg Line, forcing them into full retreat on a front more than 200 miles long by November 1918. The trench stalemate of 1915–17 was thus broken by early 1918, and the last seven months of the war saw the return of movement to the Western Front—albeit movement at the speed of a walking infantryman.

KEY POINTS

- Prewar theorists anticipated many of the problems posed by new firepower and mass armies.

- Their proposed solution of cover and concealment with suppressive fire and movement failed in practice because 1914's armies lacked the necessary skills to implement the demanding tactics.

- Over the course of the long trench stalemate, technical and tactical skills were gradually developed. By March 1918 the stalemate had been broken and movement restored to the Western Front.

The Second World War: Responses to mechanization

The years between the world wars saw another wave of technological change arise through the maturation of several new technologies that appeared during the latter years of the First World War. Collectively these technologies are sometimes referred to as 'mechanization', or the re-equipment of armies with tanks, trucks, aircraft, and radio communications to allow these faster-moving, longer-range vehicles to co-ordinate their movements. All made their debut in the First World War, and the tank in particular is sometimes described as central to the breakdown of the great stalemate in 1918. In reality, however, none of the new equipment played a decisive role in the First World War. The tank, for example, was far too vulnerable and mechanically unreliable to take more than a supporting role in the final Allied offensives (see Box 4.3). Aircraft were important, but payload limitations restricted them largely to reconnaissance and counter-reconnaissance roles throughout the war; while tactical and strategic bombing missions were attempted, these were at best secondary functions. Radio was available, but First World War wireless sets were too bulky and short range to be of much use in mobile operations on the battlefield. The interwar period, however, saw great improvements in the range and reliability of tanks, the payload and performance of aircraft, and the portability of long-range radio equipment.

The interwar theoretical debate turned largely on the consequences of these developments for the conduct of war. Some, such as the British military intellectuals J. F. C. Fuller

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BOX 4.3   THE TANK IN THE FIRST WORLD WAR

[In 1918] the dominant fact about the tank was that it was not durable. At Cambrai, 324 fighting tanks were committed . . . At the end of the first day 65 had received direct hits, 71 had broken down, 43 were ditched and many others needed minor repairs. The casualties on 8 August 1918 were higher still and reflected improving German anti-tank artillery. Four hundred and fourteen started, but only 145 were runners on the second day, 85 on the third, 38 on the fourth and 6 remained on the fifth. The crews were exhausted by temperatures of well over 100 degrees Fahrenheit and the fumes and noise from engines and guns. A night on the march before a battle and another spent returning to harbour for maintenance usually meant thirty-six hours without sleep amid the strain of battle. Neither men nor machines were of much use on a second day of fighting.

It is very often not realized what is meant by the exhaustion of the crews; this in the case of tanks does not merely mean bodily fatigue. The crews of one battalion after some hard fighting became absolutely exhausted and most of them physically ill. The pulses of one crew were taken immediately they got out of their tank; the beats averaged 130 to the minute or just twice as fast as they should have been. Two men of one crew temporarily lost their reason and had to be restrained by force, and one tank commander became delirious.

First passage from Shelford Bidwell and Dominick Graham, *Firepower: British Army Weapons and Theories of War, 1904–1945* (London: Allen and Unwin, 1985) pp. 137–8. Second passage from Royal Armoured Corps Papers, Bovington: 'Short Report on Tank Corps Operations', as quoted in John Terraine, *To Win a War: 1918, The Year of Victory* (London: Sidgwick and Jackson, 1978), p. 117.

and Basil Liddell Hart, saw self-contained mobile formations waging a form of naval warfare on land: after heavy tanks had breached the enemy's forward defences, massed squadrons of light tanks supported by aircraft would roam at large behind enemy lines, observing few distinctions between front and rear and rapidly overrunning the essential command and logistical infrastructure that made up the 'central nervous system' of the opposing army. The French theorist Charles DeGaulle called for autonomous tank formations not tied to the pace of the supporting infantry but capable of rapid, wide-ranging manœuvre. Soviet Marshall M. N. Tukhachevsky advocated a 'deep battle' doctrine of air strikes and parachute infantry drops throughout the theatre of war, coupled with rapid advances over great distances by mobile ground forces to paralyse hostile command elements and disrupt the movement of enemy reserves.

German theorists were among the least radical in their response to new military technology. The Germans studied their First World War experience carefully, retained most of their 1917–18 doctrine as valid, updated it where necessary to accommodate new equipment, and subjected the results to extensive field testing. The resulting **Panzer Division** organization was a combined arms formation in which tanks, infantry, artillery, and engineers were used together in tight co-ordination, exploiting local terrain to enable all-arms assault teams to overcome defences by a combination of movement and suppressive fire.

By contrast, France and especially Britain ultimately adopted much more tank-heavy armoured divisions and used their tanks more independently, expecting them to manœuvre en masse with only limited infantry support. Worse, they allowed much of the expertise in combined arms operations gained at great cost between 1915 and 1918 to atrophy following the war. In France, civil–military tension produced a short-service conscript army unable to master the complex demands of late-war tactics. In Britain, a class-conscious officer corps ostracized the upstart technicians they had been forced to rely upon in wartime, placing birth and breeding above skill and hard practice. Eventually, many of their technical experts moved on to civilian careers. In the Soviet Union, a series of ruthless political purges killed or cashiered the Red Army's most talented officers, stripping the military of the expertise it needed to cope with the complexities of modern warfare.

When war broke out in 1939, the result was a series of stunning German victories as the Panzer divisions spearheaded breakthroughs against poorly conducted Allied defences. First World War defenders had learned the hard way to thin their forward positions, extend their defences into great depth, and withhold much of their total strength in reserve. Though this yielded ground initially, it provided the time and wherewithal needed to counter-concentrate before the attacker could break through. It also forced attackers to fight the decisive battle in the depths of the defence, where an opposed attackers' combined arms advance of thousands of yards would have frayed even the best attackers' combined arms co-ordination. Yet French defences in the crucial Sedan sector in 1940, for example, were less than one-fifth the depth of typical 1917 German positions, with less than half the 1917 norm for forces withheld in reserve. Such shallow, forward defences were easier to control and less demanding of technical skill among troops and junior leaders but were dangerously brittle. When struck by a German combined arms attack they shattered, enabling German armour to pour through the resulting gap and sprint to the English

Channel in just weeks. Hit with this combined arms attack, the French theatre defence collapsed, knocking France out of the war and giving the Germans in less than two months a victory that had eluded them for four years in the First World War. Soviet defences in 1941 were similarly ill disposed: the 'Stalin Line' defending Russia's prewar border was even shallower than the French defences at Sedan. The Germans quickly broke through, streaming eastward as fast as their resupply system and the poor quality of the Russian road network would permit, encircling and killing or capturing in the process hundreds of thousands of Soviet troops.

Unlike France, however, the Soviet Union had in its favour its sheer size, which prevented the Germans from destroying the Red Army in a single campaign. Halted as much by their own logistical limitations as by Soviet opposition, the Germans were turned back short of Moscow in the winter of 1941–2. Coupled with Germany's defeat in the Battle of Britain, the resulting breathing space permitted a major revision of Allied military doctrine as the Allies gradually relearned the hard lessons of 1917–18. They deepened their defences, withheld more of their strength in reserve, and increasingly used those reserves in counterattacks to recapture lost ground rather than rigidly defending every inch from the outset. And they slowly, painfully, retaught themselves the importance of combined arms and the tight integration of suppressive fire with movement. The tank-heavy early-war armoured divisions were gradually replaced by better balanced formations with a higher proportion of infantry, artillery, and engineers. Methods of co-operation between ground forces and supporting tactical aircraft were hammered out. The complexities of infantry-artillery integration were rediscovered and eventually overcome—and the new problem of infantry-armour co-ordination that the Germans had mastered by extending their First World War principles was gradually surmounted.

The result was the end of the rapid 'blitzkrieg' offensive successes of 1939–41 as the Allies, too, adopted the crucial combination of **deep elastic defences, integrated fire and movement**, and **combined arms**. With both sides using these methods, quick, cheap breakthroughs became impossible for either side, and the war settled into a long, hard process of the Allies methodically grinding down a numerically inferior Axis military.

Contrary to the expectations of prewar armour theorists, the tank did not revolutionize warfare or create a form of naval conflict on land. Instead, the tank expanded the possibilities of traditional combined arms warfare by providing a source of protected firepower with the mobility to exploit breakthroughs where these occurred. Tanks can carry heavier weapons, heavier armour, and more ammunition than infantry, but they are loud and harder to hide, and have a great deal of difficulty seeing concealed targets when buttoned up. When tanks operate alone, these shortcomings make them extremely vulnerable to dug-in infantry that they cannot see, but which can strike the tanks' less-protected flank and rear armour surfaces with short-range portable antitank weapons. Dug-in antitank guns pose even greater threats: properly concealed they are practically impossible for tank crews to see, yet their higher-velocity weapons can pierce even the heavy frontal armour of most tanks. Tanks thus cannot afford to operate in the open: even with armour to protect them, they are still too vulnerable to survive an unsupported frontal assault against a well-prepared position. By contrast, when teamed with friendly infantry and artillery the tank is a more formidable weapon. Infantry can act as the tanks' eyes and ears

by finding concealed defenders and pinpointing their locations for the tanks' superior firepower, while the tanks' heavier weaponry can suppress defensive fire to keep it from pinning down the thinner-skinned foot soldiers. Friendly artillery in turn provides the high-volume suppressive fire needed to cover more extended periods of exposure, enabling the tanks and infantry to conserve their (more limited) ammunition supply for use at shorter ranges where fratricide risks limit the effectiveness of indirect artillery fire. The tank's mobility permits it to come into its own in exploiting any breaches in the enemy's defences. Without dug-in, concealed defences to overcome, tanks in open country can operate more independently, using their speed to conduct the kind of deep raiding operations that theorists like Fuller or Liddell Hart had expected. In actual practice, however, these opportunities became fewer and fewer as the war progressed and defenders learned to deny tanks the conditions they needed for independent operations behind enemy lines. Hence the war that transpired was very different from the one radical theorists had anticipated.

By 1943–4, in fact, some of the war's most tank-heavy battles had become some of the war's most costly defensive stalemates. The single biggest tank action of the war, the Battle of Kursk in July 1943, was a crushing offensive failure: the German attackers lost up to 2,900 tanks in 18 days of fighting, a loss from which they never recovered. The war's greatest density of tanks (in vehicles per kilometre of frontage) was the 1944 British offensive in Operation Goodwood; the attack ground to a halt after an advance of less than ten kilometres, costing the attackers more than a third of all the British armour on the continent in the process. By 1945, the Second World War had thus come to resemble more closely the methodical offensives of 1918 than the blitzkriegs of 1939–41.

KEY POINTS

- Some interwar theorists expected mechanization to revolutionize warfare, with armoured vehicles taking over most combat roles and waging a free-flowing battle resembling naval warfare on land.
- Germany's early successes with Panzer divisions in the Second World War, however, were made possible by flawed Allied defensive dispositions. As the Allies slowly relearned the lessons of 1917–18, quick offensive success became impossible even for tanks.
- Once both sides had adopted cover and concealment, combined arms, tightly co-ordinated suppressive fire and movement, defensive depth, and large reserve formations, the war settled into a pattern of methodical advances by numerically superior attackers, with few decisive offensive breakthroughs possible for either side.

The 1973 Arab–Israeli war: Relearning the importance of combined arms

Israel had fought a series of wars against Arab opponents by 1973, winning each of them despite being outnumbered. In the process, the Israelis had become convinced that the key to modern desert warfare lay in high-mobility operations by tank-aircraft task forces without significant reliance on artillery or dismounted infantry. Speed, daring, and deep penetrations without regard to flank security came to be seen as essential. Fire support was to be provided by ground attack aircraft to maintain the pace of the advance.

These theories stemmed from a particular interpretation of Israeli experiences in the wars of 1948, 1956, and 1967. Israeli forces in the 1948 War of Independence were an improvised patchwork consisting mostly of infantry with little support from heavy armour or artillery. Israel prevailed, but only after hard fighting against a poorly organized opposition. By 1956 the Israeli army was better organized and trained, but still largely an infantry force. In the Suez war, this army defeated Egyptian defences in the Sinai in a nine-day campaign timed to coincide with British and French seizure of the Suez Canal. Although only a portion of Israel's forces had been fully mechanized, this armoured element produced results disproportionate to its strength. Senior Israeli leaders saw this as proof of the tank's potential in desert warfare, and made great efforts to mechanize Israel's forces following the war. By 1967 they had amassed a force of some 1,100 tanks, backed up with 260 combat aircraft. The ensuing Six Day War yielded one of the most one-sided offensive victories of the twentieth century, as Israeli armour-aircraft task forces charged deep into the Sinai, cutting off much of the Egyptian army in the process and destroying Egypt's theatre defensive position in just four days. Subsequent operations in the West Bank and Golan Heights defeated Jordanian and Syrian forces, producing a dramatic success against far more numerous Arab opponents.

In these conflicts, fast-moving tank columns had performed great feats; the more armour intensive the operation, the more impressive the results had been. Israeli doctrine responded with increasing neglect of infantry or artillery support for the tanks that had accomplished such marvels. Israeli officers thought that in modern mechanized warfare dismounted infantry would delay the mobile units on which success depended. Infantry came to be seen as a specialized force for independent use in built-up areas or other unusual terrain in which the tanks and aircraft could not operate effectively.

Israel's ability to succeed with such tank-heavy forces, however, depended critically on the poor performance of Arab troops in the 1956 and especially the 1967 war. Ill trained and ill led, Arab infantry lacked the skills and motivation to exploit the potential weaknesses of unsupported Israeli armour. Disposed in shallow defences with inadequate reserves, Arab armies were unable to respond once Israeli tank charges overran their forward positions, giving tank-heavy Israeli exploitation forces maximum scope for decisive results.

Following the 1967 debacle, however, Egypt took steps to improve its performance. It focused great effort on training its infantry to stand fast against tank charges, conceal their positions, and hit their targets. These initiatives fell far short of a complete reform of

national military practice: Egyptian forces remained incapable of close combined arms co-operation or flexible manœuvre as a function of local conditions, and their dispositions still tended to be too shallow and static. Nevertheless, they did accomplish one key goal: their infantry learned to carry out a tightly scripted advance, dig in properly at their new positions, and defend those positions tenaciously when attacked.

These Egyptian reforms produced a near disaster for Israel in the 1973 October war. Catching Israel by surprise, the Egyptians quickly crossed the Suez Canal, overwhelmed the unprepared garrison of the 'Bar Lev Line', and advanced some four kilometres into the Sinai. There they dug in and awaited Israeli counterattack. Recovering from their initial unpreparedness, the Israelis quickly obliged. A series of 1967-style unsupported tank charges then impaled themselves on the Egyptian infantry positions, suffering enormous losses. Israeli tankers accustomed to overrunning poorly prepared Arab defensive positions now found themselves unable to locate well-concealed Egyptian infantry who stubbornly stuck to their positions and found easy targets for themselves in the Israelis' exposed tanks. Israeli pilots in turn suffered heavy losses as they tried to support the tank attacks while flying into an Egyptian air-defence umbrella that likewise stood its ground and fought hard from prepared positions. In all, the Egyptian infantry shattered almost three full brigades of Israeli armour before the Israelis changed tactics.

Faced with the failure of their prewar methods, the Israelis improvised. Without much infantry of their own, they adopted an ad hoc, all-mounted version of traditional suppressive fire-and-movement methods. Instead of storming the defences directly, a few tanks would move forward cautiously to draw fire, while others in stationary overwatch positions searched for the sources of the fire and returned it. The primary Egyptian antitank weapon was a slow-flying, wire-guided missile which required its operator to keep a cross-hairs on the target until impact. Soldiers in Israeli overwatch tanks who observed the puff of smoke from the missile's launch area then hosed down the Egyptian position with machine gun or cannon fire, thereby distracting or killing the operator, causing the launched missiles to lose guidance in mid-flight. Meanwhile the exposed lead tanks manœuvred evasively and sought cover in more advanced positions. In this way the Israelis gradually worked their way forward.

These tactics were costly, but they enabled the Israelis to take ground. Eventually, they fought their way through Egyptian lines in a bitter action at the Battle of the Chinese Farm. Once through the Egyptians' forward defences, the Israelis were able to accelerate dramatically, as the Egyptians' lack of depth and reserves left them with little means of containing the breach. Israeli tank columns crossed the Suez Canal, turning north and south to overrun the command, logistical, and air-defence infrastructure on which the remainder of the Egyptian defences depended. The tank columns cut off the Egyptian Third Army on the Israeli side of the canal.

The Syrians, meanwhile, had attempted a clumsy massed tank attack in the open against Israeli defences in the Golan Heights. Poorly supported by either infantry or artillery, the Syrian armour suffered huge losses against a tiny Israeli defensive force. They failed to dislodge the screening positions the Israelis relied on to shield their mobilization. Once Israeli reinforcements arrived, these proved sufficient to retake all lost ground before an internationally brokered ceasefire ended the war on 24 October.

The Israelis prevailed, but the war had been both a close-run affair and an extremely

costly victory. Israeli casualties in 1973 were three times those of 1967, and more than ten times higher than in 1956. The Arab offensives had come perilously close to breakthrough in their early stages, and for a country with as little strategic depth as Israel, breakthrough could have been fatal.

The war also provoked an international debate about the implications of new **precision-guided munition (PGM)** technology for war. The Israelis' heavy losses to Egyptian wire-guided antitank missiles convinced many that the tank was now obsolete. Commentators widely predicted that the tank would now go the way of the battleship and the horse cavalry, and that the new technology of precision guidance would make battlefield manœuvre impossible, choking off attacks and causing defence to dominate warfare once more.

In fact, this debate greatly overestimated both the actual effectiveness of PGMs in the war, and the reasons for the effectiveness they did enjoy. The majority of Israeli tank casualties were actually caused by unguided short-range antitank weapons wielded by Egyptian infantry, and by conventional fire from Arab tank guns. And the reasons for the losses the Israelis did suffer to Egyptian PGMs lay less in the alleged superiority of PGM technology than in the poor tactics the Israelis had adopted after 1956 and 1967. Unsupported tank charges could succeed only against poorly trained infantry—against better-prepared troops such methods were suicidal whether the infantry had PGMs or not. Early in the war, before the Israelis developed appropriate countermeasures, the instrument by which Egyptian infantry took their toll was chiefly the wire-guided PGM, but its effectiveness was very short lived. Once the Israelis had learned to provide rudimentary suppressive fire, the PGMs became much less a factor. But the Israeli tanks' lack of adequate infantry and artillery support exposed them to continuing losses from less sophisticated weapons in the hands of well-concealed defenders. Neither the tank nor the PGM had eliminated the need for combined arms, cover and concealment, tightly integrated fire and manœuvre, or defensive depth and reserves. On the contrary, as the Israelis had demonstrated, technological advances had actually *increased* their importance: the potential lethality and speed of the new weapons made the consequences of failing to adopt such measures increasingly painful.

KEY POINTS

- Prior to 1973, Israeli armoured successes against poorly trained Arab armies led Israel to neglect combined arms, cover, concealment, and suppressive fire and movement in favour of rapid advances by tank-heavy forces.

- When Egypt retrained its infantry after 1967, these tank-heavy Israeli methods became untenable. Egyptian infantry took a terrible toll of unsupported Israeli tank attacks in the early days of the 1973 October War Sinai campaign.

- Israel adapted to improved Egyptian tactics, but results were still costly. Even in modern desert warfare, the methods pioneered on the Western Front in 1917–18 remain essential.

The 1991 Gulf war: Revolution or continuity?

The 1991 Persian Gulf war has had a sweeping effect on Western military thought. Between 17 January and 28 February 1991, a US-led coalition destroyed a defending Iraqi army of hundreds of thousands of soldiers, thousands of armoured vehicles, and tens of thousands of artillery pieces, for the loss of only 240 attackers. The coalition loss rate of fewer than one fatality per 3,000 soldiers was less than one-tenth of the Israelis' in the 1967 war, less than one-twentieth of the Germans' in their blitzkriegs against Poland or France in 1939–40, and nearly one-thousandth of the US Marines' in the invasion of Tarawa in 1943. Much heavier losses had been expected. The closest prewar casualty estimate was three times the actual figure; the next best was high by a factor of six. The majority were off by more than an order of magnitude, while some official projections were reportedly high by more than a factor of 200. This outcome was so surprising that it has convinced many that a threshold has been passed and that the very nature of war itself has changed—that the world now confronts a **revolution in military affairs** (RMA).

This revolution is said to stem from the effects of new information gathering, precision guidance, and air-defence suppression technologies. The Gulf coalition had deployed each of these—either for the first time or in newly mature form—whereas the Iraqi defenders had not. The conjunction of this new technology and an unprecedented outcome has convinced many that these new tools have rendered traditional military methods obsolete. Mechanized ground forces can now be destroyed from the air, many argue; wars will now be decided by long-range precision air and missile strikes, with ground forces reduced mostly to the role of scouts. The struggle for information supremacy will replace the breakthrough battle as the decisive issue for success, and some even hold that the collection and destruction of information per se will soon become the sole focus of hostilities, leading to 'strategic information warfare' where no physical objects are destroyed.

In many ways, however, this interpretation echoes the initial reaction of military thinkers to the 1973 Middle East war. New technology is a major feature of modern warfare. At first glance, it is easy to attribute surprising outcomes to new weapons. But just as a closer examination of the 1973 experience showed that faulty tactics had been more important than technology in explaining Israel's heavy losses, so technology's role in the 1991 conflict has been exaggerated relative to the effects of tactics and doctrine. Neither tactics nor technology is irrelevant—both must be taken into account to explain the radical results of 1991. But without the flawed Iraqi methods of 1991, the same technology probably would have had much less radical effects. The Iraqis' flaws, furthermore, were mostly the same ones that have bedevilled unsuccessful armies throughout the twentieth century: poor combined arms co-ordination, inability to integrate manœuvre and suppressive fire, and poor exploitation of cover and concealment. These familiar mistakes, coupled with the increased lethality of new weapons, yielded a radically one-sided outcome in 1991, but this neither eliminates the importance of orthodox tactics nor implies that wars of the future will necessarily resemble 1991.

The 1991 war was a response to Iraq's invasion of neighbouring Kuwait in August 1990.

Halting at the border of Saudi Arabia, the Iraqis prepared a belt of defensive positions (the 'Saddam Line'), reinforced their garrisons, and sought to deter the West from responding. The US-led Gulf coalition instead spent the next five months building up air, ground, and naval forces in Saudi Arabia, Turkey, and the Persian Gulf while seeking to persuade the Iraqis to withdraw. When neither side backed down, the coalition launched a massive, six-week air campaign beginning on 17 January. This quickly crippled the Iraqi air-defence system and destroyed key elements of the Iraqi command and control network, permitting more than a month of effectively uncontested, round-the-clock pounding of ground targets across Iraq and over the entire depth of the Kuwait Theatre of Operations (see Chapter 6). As the air war unfolded, the Gulf coalition secretly positioned two corps of ground forces on the Iraqis' extreme right flank. Following an initial assault by two US Marine divisions against the Iraqi centre and left, these two corps launched a 'left hook' around the Iraqis' exposed inland flank. Progress was rapid everywhere as Iraqi conscript infantry at the border collapsed without much of a fight. The Iraqis' elite Republican Guard and a handful of army tank and mechanized divisions, however, stood their ground and attempted to fight back. Roughly five divisions of these forces occupied a prepared blocking position designed to protect the Iraqis' retreat route from Kuwait. This blocking force was destroyed in a series of battles beginning on 26 February. Kuwait City was liberated on 27 February. With the Iraqi blocking force destroyed and the Iraqi military in full flight, the war was halted at 8 a.m. local time on 28 February.

Much postwar commentary has attributed the one-sidedness of the result to the air campaign, holding that it destroyed either the Iraqis' will or their ability to resist before the ground invasion began on 24 February. This was not the case. Between 1,200 and 4,100 Iraqi armoured fighting vehicles evaded destruction by coalition air forces in 1991. At least 1,200 of these were dug in astride the left hook's axis of advance and are known to have fought back when coalition ground forces struck them beginning on 26th February. This was a lot of armour by historical standards. The Iraqi blocking force alone deployed more active armoured vehicles than the entire Israeli army did in 1967, and more than twice as many as the German army deployed in Normandy in July 1944. The high estimate of Iraqi armour on the battlefield included about as many tanks as the entire Egyptian army in 1973. If these surviving Iraqis had merely inflicted as many casualties per capita as the Arabs did in 1967, the result would still have been a coalition loss rate more than ten times higher than it was in 1991. The Iraqi failure to do so cannot be attributed to the air campaign alone.

Others see the war's one-sidedness as the result of superior coalition ground force technology. The thermal sights, stabilized 120 mm gun, depleted uranium (DU) ammunition, and new compound armour of the US M1A1 tank, it is argued, gave coalition forces an insurmountable advantage over the Iraqis' Soviet-built T-72s and T-55s. Here, too, the facts are hard to square with the argument. The US Marine Corps, for example, was equipped mainly with 1960s-era M60A1 tanks, yet they fought their way through hundreds of actively resisting Iraqi armoured vehicles with no greater losses than the better equipped Army. In fact, some of the Marines' heaviest fighting was conducted not even by M60s but by wheeled, thin-skinned, light armoured vehicles. Alternatively, the Army itself deployed thousands of lightly armoured M2 and M3 Bradleys, which engaged in extensive close combat yet suffered very few casualties. If superior guns, superior

armour, and thermal sights were responsible for the coalition's low losses, then we would expect units fighting without these advantages to suffer heavily. Yet they did not.

Instead, the war's one-sidedness was the result of a powerful interaction between Iraqi tactical errors and new coalition technology. The Iraqi army in 1991 displayed very poor military skills. Iraqi conscript infantry was neither skilled nor motivated, but even the elite Republican Guard—though motivated—was remarkably unskilled. Fighting positions for Republican Guard tanks and troops were haphazardly prepared. Counterattacks were launched by armoured vehicles advancing in the open without accompanying fire support; marksmanship was remarkably bad; and equipment was poorly maintained. Of course, the Iraqis were not the first to make such mistakes. The technical demands of modern war are exacting, and many armies have failed to master them completely. As technology has become more sophisticated, however, the consequences of such errors have progressively risen.

For example, against the 1918 combination of attackers on foot with light machine guns of under 100 metres effective range, and artillery with limited ability to adjust fire quickly, such defensive errors were harmful but not necessarily catastrophic: poor British defensive methods in March 1918 yielded a German breakthrough and 40-mile exploitation, but the Allies were able to re-establish a front, continue the war, and ultimately prevail. Against mid-century armoured attackers with effective weapon ranges of 500–1,000 metres and supported by aircraft dropping unguided bombs, the cost was higher: poor French tactics in 1940 enabled the Germans to knock France out of the war in a matter of weeks, though German casualties were still in the tens of thousands. By 1991, however, coalition attackers had all-weather, day/night thermal tank sights, stabilized 120 mm guns effective on the first shot at 3,000 metres, aircraft armed with PGMs and complete command of the sky, and attack helicopters with 5,000-metre-range missiles. Against such weapons, tactical slip-ups became very lethal very quickly to a very large number of defenders—and the cost of such mistakes rose to rapid annihilation with almost no ability to harm the opponent. In 1991, the Iraqis' mistakes were many and varied, and the coalition's technology was sophisticated and diverse. This combination provided many ways for defensive error and offensive technology to interact, which enabled a heterogeneous attack force, some of it sophisticated and some not, to find ways to prevail with very limited costs to any part of the offensive array.

By contrast, armies that properly exploit the potential of cover, concealment, suppressive fire, and combined arms are radically less vulnerable to even post-1991 firepower. For example, the Iraqis' poor position preparation left many armoured vehicles perched on the desert surface behind loose sand berms which offered neither concealment (they were the only prominent features in an otherwise flat desert landscape) nor cover (piled sand cannot stop 120 mm DU rounds). US tank crews, by contrast, dig fighting positions as ramps which conceal the entire vehicle below ground until the weapon is to be fired. Tanks dug into the ground properly can not be seen by thermal sights nor can their crews be killed by even 120 mm DU fire. Whereas the Iraqis' poor preparations left them highly vulnerable to new weapons, against properly prepared positions the same weapons would have been far less effective.

The outcome of the Gulf war was thus unprecedented, but one with powerful elements of continuity with prior military experience. New technology was important in the Gulf,

but its effects were shaped by the same tactical and doctrinal principles that have moulded land warfare since 1900. In an important sense, what the Gulf shows is less a revolutionary change in warfare, and more an extension of central trends that have been visible throughout the military history of the twentieth century. (See Chapter 10.)

KEY POINTS

- The coalition's radically one-sided victory in the Gulf war has convinced many theorists that new technology has revolutionized war.

- Technology is not a sufficient explanation for the scale of the coalition victory, which required a synergistic interaction between new coalition technology and Iraqi tactical errors.

- The key Iraqi errors were the same ones that many unsuccessful armies have made in twentieth-century warfare: poor combined arms co-ordination, inability to integrate manœuvre and suppressive fire, and poor exploitation of cover and concealment.

- Familiar tactical mistakes, coupled with the increased lethality of new weapons, yielded a radically one-sided outcome in 1991, but this neither eliminates the importance of orthodox tactics nor implies that wars of the future will necessarily resemble 1991.

Conclusion

As the twenty-first century opens, many now believe we are in a period of unique technological change. But in fact, rapid technical progress has been the normal condition of modern military experience. Since 1900 there has been continuous, rapid growth in the **reach, lethality, speed,** and **information-gathering** potential of armies (see Figures 4.1, 4.2, and 4.3); the question of how to respond to this rapid change has been a central focus of military thought throughout the period.

Responses to technical change have displayed some important continuities. Again and again, armies have returned to a body of tactical and doctrinal principles that arose almost with the dawn of the era of modern firepower at the turn of the twentieth century. In an extended process of trial by fire, the concepts of combined arms, tight integration of movement and suppressive fire, aggressive use of cover and concealment, and defensive depth and reserves have repeatedly proven necessary for effective operations on a radically lethal battlefield. With each new wave of technology there has been a temptation to assume that war has now changed so dramatically that unheard-of new methods will be needed to cope, yet repeatedly armies that strayed too far from fundamental battlefield tactics have been driven back to them by painful experience.

Between 1915 and 1917, European armies experimented with **a doctrine of overwhelming firepower** in which artillery alone was to dominate the battlefield with
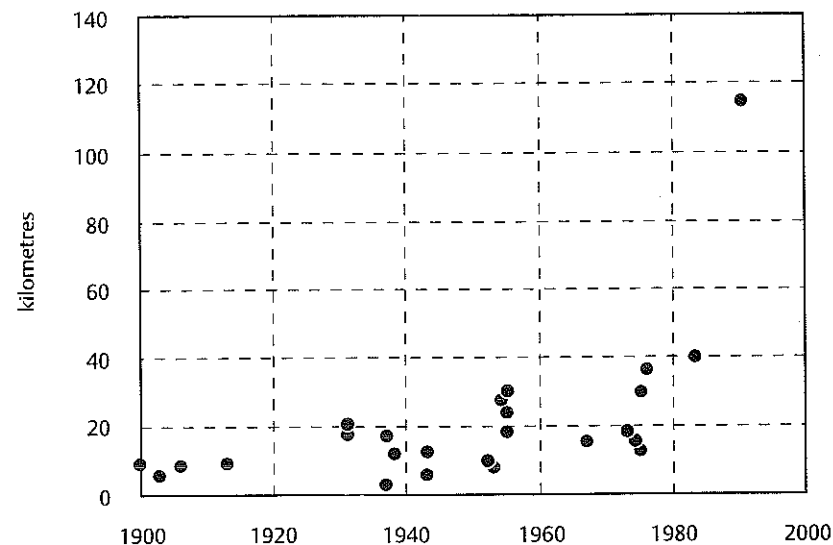
Figure 4.1 Growth in artillery range
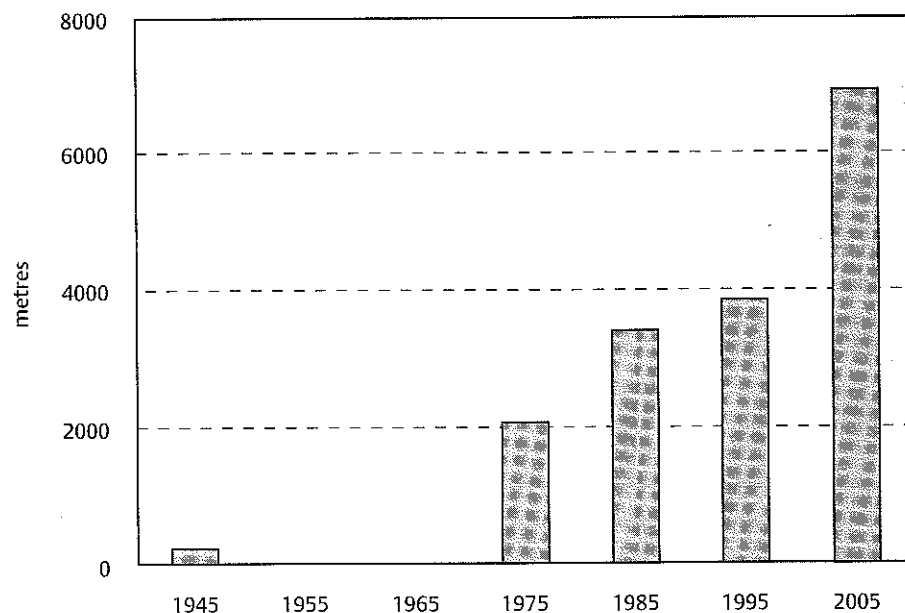
Figure 4.2 Growth in antitank lethality: Mean penetration range of US heavy antitank weapons
Note: Mean lethal range for armour-penetrating weapons in a US armoured division when fired against the tanks in a representative opposing division, weighted by prevalence of each shooter and target type.
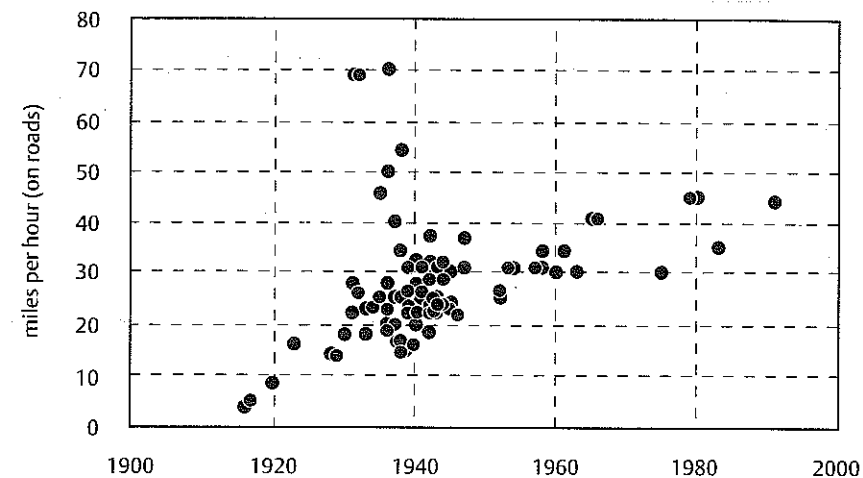
Figure 4.3 Growth in tank speeds

crushing barrages of literally atomic magnitude; the resulting stalemate forced soldiers to develop the technical skills needed for close co-ordination between infantry manœuvre and suppressive artillery. In the interwar period, Fuller and Liddell Hart called for massed tank formations to manœuvre freely like ships at sea; the hard experience of the Second World War forced armies to bring balance to their armoured units and exploit cover and suppressive fire at the expense of a slower-paced, more methodical style of fighting. The 1973 October war spurred many to suppose that PGMs had doomed traditional weapons like tanks, and that conventional tactics would yield to a firepower-dominated war of defensive position; the actual fighting, however, saw Israeli attackers striving to re-create orthodox tactics and finding that these took much of the sting out of the new PGMs.

In the aftermath of the 1991 Gulf war, many again believe that technology has revolutionized war and that the future will require a radical departure from traditional methods. The war itself, however, provides less support for this view than typically supposed: the Iraqis were neither annihilated by precision attack from the air nor simply overmatched by superior ground force technology. Instead, Iraqi failure to master the complex demands of combined arms, cover, and concealment left them exposed to the latest in a longstanding series of increases in the lethality and reach of modern weapons, with catastrophic results for Iraq's ambitions in Kuwait.

This is not to say that new technology may not someday create the kind of revolution in military affairs that so many have predicted for so long. If a revolution is coming, however, it is not here yet: NATO's 1999 air campaign over Kosovo again showed that against covered, concealed targets even state-of-the-art precision strike technology cannot produce annihilating damage. In fact, over 12,000 strike sorties in this war destroyed fewer than 100 Serbian tanks, 150 armoured personnel carriers, and 390 artillery pieces, yielding a kill rate lower than that of the Gulf war air campaign that itself proved insufficient to defeat a defending army without a major ground offensive.

Experience suggests a **different model of military change**. Rather than new technology creating periodic revolutionary breaks with the past, what technology actually did in

the twentieth century was to punish mistakes with increasing severity. The more deadly the weapons and the more effective the information-gathering systems for locating their targets, the more painful has been the failure to adopt traditional cover, concealment, combined arms, and suppressive fire tactics. The faster and longer range the combat vehicles, the more damaging has been the failure to adopt depth and withhold sufficient forces in reserve. Armies that have failed to master these methods have suffered increasingly one-sided defeats since 1900. Armies that have implemented such methods, however, have been able to insulate themselves from the worst effects of new weapon technologies. Over time, technological change has thus increased, not decreased, the importance of this 'modern system' of tactics and doctrine: militaries that implement it have seen their vulnerability rise only slowly as the nominal lethality of the battlefield has grown; militaries that fail to do so have been fully exposed to the effects of ever more powerful weapons, with ever-bloodier consequences. Technological change in land warfare can thus be thought of as a wedge, driving apart the real military capability of armies that can, from those that cannot, implement the complex canon of orthodox modern tactics and doctrine. Even the latest weaponry will have much less effect on the outcomes of wars between tactically astute combatants.

Inevitably the jury is still out on the effects of ongoing technological change. Perhaps the future will be radically different from the past; only time will tell. We would not be the first, however, to suppose so in peacetime, only to discover otherwise in the crucible of wartime experience.

QUESTIONS

1. How did European soldiers plan to cope with the new lethality of modern weapons prior to the First World War, and why did these plans fail in 1914?

2. What finally broke the trench stalemate in 1918?

3. Which of the interwar theorists best anticipated the nature of the mid-century battlefield and what made their ideas more successful?

4. The 1956 and 1967 Middle East wars convinced many that tanks would dominate future desert warfare; the 1973 October war, conversely, convinced many that the tank was doomed. Was either of these views correct? Why or why not?

5. Tanks are faster than infantry, enjoy superior armour protection, and carry heavier armament. They are better protected than artillery, and typically do not require remote observers to find targets for them as most artillery units do. Why, then, do all armies continue to field large numbers of infantry and artillery?

6. What is the RMA thesis, and why does it matter?

7. Many believe that the 1991 Gulf war signalled a revolution in military affairs. Did it?

8. Military organizations are often criticized for trying to refight the last war, and for failing to innovate radically enough in the face of changing technology. Is this charge borne out by the experience of twentieth-century land warfare?

9. Has changing technology increased or decreased the importance of combined arms, cover and concealment, tight integration of manœuvre and suppressive fire, defensive

depth, and the withholding of large reserves? Taken together, such methods comprise a very demanding style of warfare; some armies have not mastered it. How has changing technology affected the consequences of failure to master such techniques?

10. All historical processes display both change and continuity. In what ways has the nature of land warfare changed since 1900, and what elements of continuity can be discerned? How have the major military events of the period been affected by each?

REFERENCES AND GUIDE TO FURTHER READING

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WEB SITES OF INTEREST

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www.fas.org/man/index.html The Federation of American Scientists' Military Analysis Network home page—offers primers on military equipment, organization, and doctrine, plus material on selected defence policy debates and links to other sites.

www.cgsc.army.mil/csi/index.htm The US Army's Combat Studies Institute home page— offers synopses and full-text versions of historical and doctrinal analyses by members of the Institute staff on the theory and practice of land warfare.

carlisle-www.army.mil/usassi/ssipubs/stdyprog.htm The US Army War College Strategic Studies Institute's on-line publications page—offers synopses and full-text versions of strategic policy analyses by members of the Institute staff and associates.

www.adtdl.army.mil/atdls.htm The US Army's Training and Doctrine digital library—offers on-line full-text versions of Army doctrinal publications.
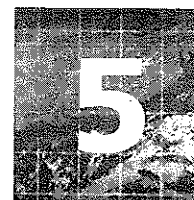
Sea Power: Theory and Practice

Sam J. Tangredi

READER'S GUIDE

This chapter discusses sea power in terms of a broad concept that includes international maritime trade and ocean resources, as well as the use of navies in war and peace. This concept is appropriate today because the number of truly global navies has dwindled to one, yet many nations retain naval forces for regional or coastal defence. It also points toward the influence of modern sea power on globalization. Naval strategy, as an element of sea power, has contending schools of thought about its purposes and methods. But the collapse of the Soviet Navy and advances in naval technology allow for a re-examination of these controversies and point to a synergy in naval missions. In war, navies must first establish sea control and defeat an enemy's maritime forces to move to a second, but more critical phase of combat: affecting events ashore. In peace, navies act as guarantors of access to the resources and markets of the global economy, as well as deterrents to potential aggression on land and sea. As technology advances, the concepts of sea power and the principles of naval strategy, if not navies themselves, may expand to include space and cyberspace.

Introduction

The term sea power is not synonymous with naval warfare. It is a much broader concept that entails at least three elements: the control of international trade and commerce; the operations of navies in war; and the use of navies as instruments of diplomacy, deterrence, and political influence in peacetime.

Unlike the concepts of land power or air power, which are generally defined only in military terms, sea power can never quite be separated from its geo-economic purposes. Navies may be the obvious, armed element of sea power. Maritime shipping, seaport operations, undersea resources (such as North Sea oil), fisheries, and other forms of commerce and communications through fluid mediums, however, can all be seen as integral to a nation's sea power. The importance of a navy thus rests on twin pillars: its ability to affect events on land, and its ability to control use of the sea. The importance of projecting force ashore has evolved as technology has increased the reach of naval weapons inland. The importance of sea control has increased with the world's growing dependence on international trade and ocean resources. There is a strong sea power element in the contemporary phenomenon known as globalization (see Box 5.1).

Another unique feature of sea power is that modern navies operate not only on the surface of the ocean, but in the depths below it and the air above it. They project power on to land, and into space and cyberspace. Sea power is inseparable from air power. Although advocates of air power might not agree, naval strategists view aviation as an essential component of sea power. This is a legacy of the Second World War, in which the aircraft carrier replaced the battleship as the capital ship of fleets. Today, the importance of air power is evident in the composition of the United States Navy: there are more officers and sailors assigned to aviation commands than to surface ships or submarines. (See Chapter 6.)

The multidimensional aspect of naval warfare is illustrated by the range of different naval platforms (ships, submarines, aircraft) and weapons systems (such as sea mines, guns, torpedoes, cruise missiles) specialized for use in particular maritime environments. Although a ship or weapon may prove decisive in one environment—such as the aircraft carrier and its air wing in long-range open-ocean combat—neither aircraft, submarines, nor surface ships can dominate all aspects of naval warfare. Even the nuclear-powered submarine, with its advantages of undersea stealth and a relatively unlimited energy source, is at a disadvantage in shallow water or in operations that expose it to surface attack. Thus, most navies, within the constraints of their resources, have attempted to maintain a balanced mix of fleet units. When they are significantly limited by resources, they specialize in a particular naval environment or mission, such as coastal defence operations. A nation whose navy can operate beyond the coastal (littoral) region is generally considered a sea power state (see Box 5.2).

Why is sea power important?

Four facts make sea power important. First, over 70 per cent of the world's surface is covered by ocean. Second, over 90 per cent of international trade, when measured in weight and volume, travels by water. This includes the vast majority of the world's raw materials.[1] Third, the majority of the world's major cities and urban population lie within 200 kilometres of a coastline. Fourth, international law provides for **'freedom of the seas'**. In other words, any nation can use the open ocean for purposes of trade or defence without infringing on another country's sovereignty, subject to international agreements

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BOX 5.1 BROAD CONCEPT OF SEA POWER

Modern sea power can be defined as:

the combination of a nation-state's capacity for international maritime commerce and utilization of oceanic resources, with its ability to project military power *into* the sea, for the purposes of sea and area control, and *from* the sea, in order to influence events on land by means of naval forces.

This definition is often challenged by a more narrow view of sea power as 'a military concept, that form of military power that is deployed at or from the sea' (Grove, 1990, p. 3).

BOX 5.2 MEDIUMS AND SYSTEMS OF MODERN NAVAL OPERATIONS

Coastal seas and straits	Patrol boats, diesel submarines, sea mines, land-based fighter/attack aircraft.
Open ocean (surface)	Surface ships, nuclear-powered submarines, aircraft carrier-based aviation, long-range patrol and bomber aircraft, electronic warfare aircraft, sea- and land-based cruise missiles.
Open ocean (subsurface)	Nuclear-powered submarines, anti-submarine warfare (ASW) surface ships equipped with helicopters, carrier-based ASW aircraft, land-based patrol aircraft.
Littoral region	Amphibious ships with marines, carrier-based strike aircraft, sea-launched cruise missiles, surface ship gunnery, electronic warfare aircraft, ship-based theatre ballistic missile defences (under development).
Inland regions	Sea- and air-launched cruise missiles, carrier-based strike aircraft, electronic warfare aircraft.
Strategic deterrence	Ballistic missile-carrying nuclear-powered submarines, nuclear-armed sea-launched cruise missiles (most currently removed from naval inventories).
Space	Naval (dedicated) and joint or national-level navigation, surveillance, and reconnaissance satellites.
Cyberspace and Information warfare	Electronic warfare aircraft, special mission submarines, national-level satellites, joint computer network attack and defence.

on pollution and exploitation of resources. These four facts have remained fairly constant throughout the last century, making the seas pivotal in the history of economic and industrial development and war (see Box 5.3).

Sea power in history

Sea power is seen as a critical and often dominant element of military conflict. Sea power's dominance, however, has been a point of contention among military historians. Many conflicts, beginning with Herodotus' account of war between the Greek city-states and the Persian empire (499–478 BC), and Thucydides' account of the Peloponnesian War (431–404 BC) between Athens and Sparta, have been seen as a struggle between a sea power and a land power. Though the distinctions between combatants may be exaggerated, naval battles have frequently proven to be turning points in conflicts. The battle of Lepanto, off the coast of Greece in 1571, limited the extent of Ottoman Turkish domination in the Mediterranean, even as Ottoman land armies proved superior in the Balkans. In 1588, the nascent English navy defeated the Spanish Armada, ending the threat that England would be invaded. British General Cornwallis's surrender to the American colonial forces under George Washington at Yorktown in 1781 was largely decided by the blockading French fleet, which had cut off British resupply by sea. Thus, the United States gained its independence because of a temporary advantage in naval forces, even though the Americans had been defeated in most land battles by professional British troops.

The role of the British Royal Navy in the wars against Napoleon Bonaparte (1793–1815) inspired US Navy Captain **Alfred Thayer Mahan** to write a series of books that popularly defined the term sea power and laid the keel for modern sea power theory. His two most influential books, *The Influence of Sea Power Upon History, 1660–1783*, published in 1890, and *the Influence of Sea Power on the French Revolution, 1793–1812*, published in 1892, became international best sellers. They were particularly popular in Britain, the greatest naval power of the time. But Mahan's works are examples of those greatly influential books that are widely talked about, but rarely read. His style may appear tedious to modern readers. Yet, his underlying concepts were widely embraced, even as they have been a primary target for critics with alternative views of naval power.

Mahan's writings are frequently said to have encouraged the development of the armoured, 'all big gun' battleship, the first of which was the HMS *Dreadnought*, commissioned in 1906; from Mahan also came the concept of seeking a **'decisive battle'** at the outset of any naval war. The quest for a decisive battle coloured the expectation of the Royal Navy in the First World War, which made the indecisive outcome of the sole fleet battle of that war, the Battle of Jutland (31 May 1916), particularly disappointing. This expectation of a single victorious engagement was perhaps also responsible for Britain's initial disregard of the German U-Boat menace at the outset of the First World War.

Perhaps more important than actual sea battles has been the role of naval forces in protecting or cutting off the flow of maritime commerce. Sea trade has been the life-blood

BOX 5.3 HISTORICAL PERCEPTIONS OF SEA POWER

There is nothing in the world more soft and weak than water, yet for attacking things that are firm and strong, nothing surpasses it.

Lao Tze, c.600 BC

He who commands the sea has command of everything.

Themistocles, c.480 BC

He who rules on the sea will very shortly rule on the land also.

Khayr-Ed-Din (Barbarossa), d.1546

He that commands the sea is at great liberty, and may take as much or as little of war as he will.

Sir Francis Bacon, 1597

Whosoever commands the sea commands the trade; whoever commands the trade of the world commands the riches of the world, and consequently the world itself.

Sir Walter Ralegh, 1616

A man of war is the best ambassador.

Oliver Cromwell (1599–1658)

It is our experience, that the most sincere neutrality is not a sufficient guard against the depredations of nations at war. To secure respect to a neutral flag requires a naval force, organized and ready to vindicate it, from insult or aggression. This may even prevent the necessity of going to war, by discouraging the belligerent powers from committing such violations of the rights of the neutral party.

George Washington, 1796

Had I been master of the sea, I should have been lord of the Orient.

Napoleon (1769–1821)

It is not the taking of individual ships or convoys, be they few or many, that strikes down the money power of a nation; it is the possession of that overbearing power on the sea which drives the enemy's flag from it, or allows it to appear only as the fugitive; and by controlling the great common, closes the highway by which commerce moves to and from the enemy's shores. This overbearing power can only be exercised by great navies.

Alfred Thayer Mahan, 1890

The supreme test of the naval strategist is the depth of his comprehension of the intimate relationship between sea power and land power, and of the truth that basically all effort afloat should be directed at an effect ashore.

Captain Dudley W. Knox, USN, 1932

History shows that those states which do not have naval forces at their disposal have not been able to hold the status of a great power for very long.

Admiral of the Fleet of the Soviet Union, Sergei G. Gorshkov, 1974

of the world economy; small island nations, such as the United Kingdom and Japan, have flourished on it. **Commerce raiding** and **blockading** have been naval tactics throughout history. Commerce raiding—the destruction of merchant shipping by warships (also known as *guerre de course*)—has often been the sole tool of weaker naval powers that hope to gain an advantage over a stronger, but more trade-dependent, sea power state. Naval heroes of the American revolution, such as John Paul Jones, were primarily commerce raiders who could sometimes best individual enemy warships in battle, but had to flee enemy fleets that had superior numbers of ships. Semi-official entrepreneurs, carrying government-signed **letters of marque and reprisal**, and known as **privateers**, also were a significant force in commerce raiding up until the nineteenth century. This was the primary profession of such great navigators as Sir Francis Drake. Privateers without state sponsorship were generally known as **pirates**.

Commerce raiding itself did not end in the nineteenth century. The advancement of naval technology—principally the development of the modern submarine around 1900—made commerce raiding even more effective, witness the German U-Boat campaigns of the First and Second World Wars. These campaigns were narrowly defeated using a balanced force of Allied fleets, with opposing submarines, merchant ships convoyed by surface ships (primarily destroyers), and sea- and land-based aviation. Naval combat for a sea power state has always been combined-arms warfare.

The opposite side of commerce warfare is the **blockade**: the interdiction of maritime commerce by a stronger fleet. Like commerce raiding, blockades are intended to 'starve out' an enemy by denying access to the raw materials needed to manufacture the instruments of war, although food supplies may be an unspoken target. The blockaded state must use its weaker naval power to break the blockade, thereby exposing its naval strength to attrition. One of the most effective naval blockades in history was imposed on Confederate ports by the Union Navy during the American Civil War. Although several commerce raiders of the Confederate States Navy—constructed under contract in European shipyards and largely crewed by European sailors—managed to harass American shipping, the complete blockade of the largely agrarian South ensured that the cash crop of cotton could not reach European markets. The blockade also prevented much needed European-manufactured weapons from reaching the Confederacy. The famous 'first battle between ironclad ships', fought off Hampton Roads, Virginia in 1862 between the USS *Monitor* and the CSS *Virginia* (ex-USS *Merrimac*) started as a general attempt by the South to use new naval technology to break the blockade.

The concept, if not the legal terminology, of naval blockades has been used most recently around the end of the twentieth century to prevent weapons from being shipped to Iraq, the former Republic of Yugoslavia, and in support of United Nations-imposed trade sanctions. These recent maritime actions illustrate both the 'peacetime' role of navies and the traditional linkage between sea power and international trade.

Amphibious operations also have been used throughout history. The transport of land armies by sea and their support ashore by naval forces actually predate warfare at sea. In Homer's *Iliad*, one of the earliest pieces of Western literature, fighting between ships at sea is not mentioned. However, the Greek forces were transported to Troy by ships and several times the Greeks had to defend against Trojan attempts to capture and destroy the ships beached ashore. Throughout much of the ancient world sailors also functioned as

soldiers. The Viking raiders are probably the best example of sailors who also were feared as infantry.

As both ships and armies became more sophisticated, requiring specialized fighters, co-ordinated amphibious operations became more difficult, particularly when conducted under enemy fire from shore. Failures, such as at the Battle of Gallipoli (1915), were frequent, leading to the development of specialized amphibious warships and the creation of highly trained naval infantry, most notably the US Marine Corps, the Royal Marines, and the Royal Dutch Marines. Amphibious warfare reached its peak in the Pacific campaigns of the Second World War, earning the US Marine Corps its worldwide fame as an elite fighting force.[2] Box 5.4 summarizes the evolution of naval warfare and technology.

KEY POINTS

- Many significant conflicts have pitted naval powers against land powers.
- Interpretations of the outcomes of such struggles have largely shaped the modern concept of sea power.
- Protection of the flow of international trade has been a primary mission of navies in war and peace.
- Starting around 1890, the broad concept of sea power was initially popularized by the writings of Alfred Thayer Mahan.
- Critics have associated Mahan's writings with an ineffectual quest for a 'decisive battle at sea'.
- Naval warfare has always consisted of more than fighting between ships at sea. It includes commerce raiding, blockades, and amphibious operations, and support to armies ashore.

Sea power in theory

Navies long predated sea power theory. Mahan was one of the first to put the modern concept of sea power into writing. He identified six characteristics as 'principal conditions affecting the sea power of nations': geographic position, natural resources and climate, extent of territory, population, character of the people, and character of the government. Modern naval historians have updated Mahan's list to include: economic strength, technological prowess, socio-political culture, geographic position, dependence on maritime trade and sea resources, and government policy.[3]

However defined, such characteristics determine whether nation-states are likely to develop and successfully employ sea power. In the bitter ancient struggle between Athens and Sparta, the Athenians—located closer to the coast—chose to develop their naval power because they were significantly involved in overseas trade and received a

BOX 5.4 **EVOLUTION OF NAVAL WARFARE AND TECHNOLOGY**

480 BC	*Warfare under oars.* Battle of Salamis. Athenian-led Hellenic navy forces withdrawal of majority of Persian invasion force by defeating Persian fleet at sea. Use of narrow choke point allows smaller naval force to defeat larger force. Main tactics: ramming, use of archers, boarding.
270 BC	Battle of Mylae. Romans use '*corvus*' (gangway attached to beak-shaped grappling iron) to hold Carthaginian ships alongside while boarding.
133–131 BC	Battles of Naulochus and Actium. Octavius (Caesar Augustus) and Agrippa use *harpago* (harpoon) to attack and grapple ships of Pompey and Mark Antony.
c.800–1000	Viking raiders use sail and oar power to launch amphibious raids across Europe.
1571	Battle of Lepanto. Christian fleet defeats Turks in last great battle of oared galleys.
1588	*Warfare under sail.* Battles of the Spanish Armada. Main tactics: use of cannon. Lighter British ships sail underneath batteries of heavier Spanish galleons.
1600s–1700s	Privateers and pirates conduct commerce war, particularly against Spain in the New World.
1700s–1800s	Great Britain dominates war at sea. Sea power used to stop global ambitions of Napoleon.
1759	Siege of Quebec. British General Wolfe and Admiral Saunders team up in one of the first successful combined operations amphibious assaults.
1776	First attempted use of submarine in attack by American colonials; unsuccessful.
1837	*Steam propulsion* (coal fired) first adapted for naval vessels.
1840s–50s	Significant improvements in naval guns. Development of the gun turret.
1860s	Extensive use of naval mines by Confederate States.
1862	*Warfare under steam.* Hampton Roads, Virginia. First battle between all-armoured steam-driven warships.
1866	Battle of Lissa. Austrians defeat Italians in last battle in which ramming was used as a tactic.
1867	First effective experiments with torpedoes.
1890	Alfred Thayer Mahan publishes first book.
1900	'Wireless' (radio) becoming primary communication system for navies. John P. Holland convinces US Navy to buy first practical submarine.
1905	Battle of Tsushima. Japan defeats Russian fleet; marks the growth of modern non-European navies.

BOX 5.4 continued

1906	Great Britain launches HMS *Dreadnought*, beginning the era of fast, all-armoured, all-big gun battleships.
1910s	Conversion of steam propulsion from coal to oil.
1915	Battles of Gallipoli. Combined operations amphibious assault ends in failure for Western allies.
1916	Battle of Jutland. Last all-gun fleet battle between Britain and Germany ends inconclusively. Royal Navy demonstrates first use of aircraft launched at sea.
1917	Imperial Germany declares unrestricted submarine warfare. Dominance of the U-Boat (submarine) in commerce war.
1920s	Great Britain and the United States build aircraft carriers, other nations follow suit. Techniques of carrier aviation and modern amphibious operations developed.
1921	Washington Naval Treaty marks high water mark of post-First World War efforts at naval arms control. Treaty eventually repudiated by Axis powers.
1940–5	Second World War involves all aspects of naval warfare: surface engagements, aviation, submarine commerce warfare, amphibious assault, etc. Development of radar and sonar.
1941	*Dominance of naval aviation.* Japanese surprise attack on Pearl Harbor, Hawaii damages US fleet, ends dominance of the battleship. War at sea centred on aircraft carriers.
1942	Battle of the Coral Sea. USA and Allies turn back Japanese thrust towards Australia. First naval battle in which opposing ships are never in actual sight of each other. Demonstrated dominance of aircraft carriers.
1945	Second World War ends with atom bombs dropped by aircraft on Hiroshima and Nagasaki.
1946–50	Atom bomb-armed independent air forces trumpet obsolescence of navies.
1950	Amphibious landing at Inchon turns tide of Korean war, demonstrates validity of modern amphibious operations in the atomic era.
1954	Launch of first nuclear-powered submarine, USS *Nautilus*.
1959	First nuclear ballistic missile submarine, USS *George Washington*, launched. Navies gain significant role in strategic nuclear deterrence.
1960s	Tactical missiles replacing guns at sea.
1964–70s	Extensive use of carrier aviation by USA to strike land targets in North Vietnam.
1967	*Dominance of missiles.* Israeli destroyer *Eliat* is first ship sunk by Russian-made cruise missiles fired from Egyptian patrol boats.
1973	Israelis successfully use cruise missiles against Egyptian vessels.

BOX 5.4 continued

1982	United Kingdom recaptures Falkland Islands via naval anti-air combat and amphibious assault. Argentina's surface navy remained in coastal waters after old cruiser *General Belgrano* torpedoed by nuclear submarine HMS *Conqueror*. Argentina uses air-launched cruise missiles extensively against ships, with considerable success.
1986	Public release of *The Maritime Strategy*.
1987–8	US and Allied navies escort oil tankers through Arabian Gulf during Iran–Iraq war.
1989–91	Collapse of the Warsaw Pact, the Soviet Union, and the Soviet Navy. USA removes tactical nuclear weapons from ships.
1991	First use of Tomahawk long-range sea-launched land-attack missiles in combat during Operation Desert Storm.
1998	Tomahawk attacks on terrorist training camps located in Afghanistan demonstrates use of naval power against landlocked country.

convenient windfall of resources from the discovery of silver mines. Sparta was initially content with its traditional land power since it was a poorer agricultural society and was located inland without a seafaring tradition. Their military struggle remained pretty much deadlocked until Sparta, through alliances and investment, also became a naval power. But it was a status that Sparta—with attributes that did not make it a natural sea power—could not sustain.

In the eighteenth- and nineteenth-century struggles between Britain and France, it was isolated Great Britain, with its lead in the Industrial Revolution and growing dependence on foreign raw materials, that used its sea power to check the continental land power of Napoleonic France, rich in agriculture and military spirit. France, too, attempted to build a formidable navy. Although it achieved some tactical successes, the French failed to displace the venerable Royal Navy. (See Box 5.4.)

In the Cold War, the Soviet Union, with its vast continental territory, ideological contradictions, and planned, but essentially isolated economy, sought to crown its military and nuclear strength by building an ocean-going navy. Soviet Admiral Sergei Gorshkov echoed Mahan's postulation of the importance of sea power in a most prophetic fashion (see Box 5.3). But, again, Soviet naval might crumbled with the fall of the USSR and the implosion of its fragmented economy.

Viewing sea power in terms of geo-political and geo-economic characteristics does not necessarily explain how navies are best employed in actual combat. Mahan saw the need for 'fleets in being' (as opposed to mere naval potential) and concentration of resources. But it took two noted British strategists of Mahan's era, Sir Julian S. Corbett and Admiral Sir Herbert Richmond, to challenge and further refine Mahanian thought into modern naval theory.

Corbett insisted that navies could not have strategic effect without close co-operation with land armies, and identified naval strategy as but a part of military strategy and not a separate branch of knowledge. (See Chapter 4.) His insistence on close naval-military co-operation is now taken for granted under the principle of 'jointness' ('jointary' is the corresponding British term). His views of naval strategy as a subset of the overall art of war also shifted the focus of sea power away from its commercial and economic security dimensions.

Richmond did much to popularize Corbett's views and other new thinking within the Royal Navy, which at the time was a very traditional and obstinate institution. He pushed the Royal Navy to think beyond the battleship and decisive battle and to build a fleet better adapted to other naval missions.

Part of this British debate centred around the concept of **sea control**, which in Mahan's construct could only be obtained by destroying an opposing fleet. Sea control can be defined in terms of oceanic dominance in which a nation can utilize the sea without significant opposition and thus deny its use to an enemy. Such a situation also is referred to as **command of the sea**. The primary tool to obtain maritime dominance would be a highly capable, long-ranging (if not global) fleet. But an alternate view, sometimes referred to as **local** or **regional sea control**, holds that a global fleet is not necessary to establish control over a particular area of the sea, at a particular time, and for a particular purpose. In fact, a global navy might be stretched too thin to prevent another power from obtaining local sea control. With their comparative naval power shrinking in the 1920s, and saddled with the debts and social impact of the First World War, the British gave priority to sea control, as can be seen in the words of Sir Winston Churchill to the House of Commons in 1940 (see Box 5.5). Regional sea control is a concept most suited for the majority of today's navies, which are not global in their reach.

The reverse of sea control is **sea denial**, the objective continental powers or strategic-ally disadvantaged navies have sought when facing a sea power state. Sea denial is the ability to prevent an opponent from using the sea without attempting to establish local sea control. This might entail attacking the maritime trade of the opponent while maintaining one's own independence from the need to participate in such trade. The submarine has been the most effective vessel for sea denial and it remains so today.

Sea control and sea denial involve struggles over the use of **sea lines of communications**, commonly abbreviated as **SLOCs**. SLOCs are the world's trade routes and the routes for military movement by sea. Today, these might be better described as '**sea lines of commerce**'. Based on world geography, many of these SLOCs travel through strategic **choke points**, which are relatively narrow passages through straits or among archipelagos (island groups). Three of the most obvious and significant choke points are the Strait of Hormuz at the mouth of the Arabian Gulf—through which much of the world's oil supply passes—the Straits of Malacca in south-east Asia, and the Panama Canal.

BOX 5.5 **CHURCHILL ON COMMAND OF THE SEAS (SEA CONTROL)**

When we speak of command of the seas, it does not mean command of every part of the sea at the same moment, or at every moment. It only means that we can make our will prevail ultimately in any part of the seas which may be selected for operations, and thus indirectly make our will prevail in every part of the sea.

Winston S. Churchill, 11 October 1940

Control of SLOCs or choke points has obvious effects on attempts to transport armies or other land forces by sea into distant theatres of operations.

Interdiction involves shutting down or controlling a choke point. Interdiction is generally an easier task than sea control or sea denial, and may not require much of a naval force to achieve at least temporary results. **Coastal defence** also can be seen as a form of interdiction of hostile naval operations, such as amphibious warfare. Coastal defence is often conducted by land-based air forces or shore gun or missile batteries.

Military operations in the near-shore (littoral) region are referred to as **littoral warfare**, a particularly popular term in naval circles today, even as it harks back to the more traditional, relatively limited role of navies in coastal combat. In peacetime, **naval diplomacy**, also referred to as naval suasion and derided as 'gunboat diplomacy', is used to demonstrate a nation's interest in maintaining access to SLOCs or as a deterrent to aggression. Naval diplomacy, the use or display of force without fighting, has been undertaken throughout history and remains an element of the broad concept of sea power.

A modern form of naval diplomacy is **naval forward presence**. The term is used primarily by the US Navy, but it reflects the deterrent effect and military advantages sought by sea power states throughout history. Forward presence refers to naval forces stationed overseas in areas of potential crisis to deter war, or, failing that, to be in position to provide a prompt military response to aggression. Since it requires a robust fleet with tremendous logistical capabilities, forward presence today is largely the sole province of the US Navy, which focuses on potential crises in the eastern Mediterranean (the former Republic of Yugoslavia, Arab–Israeli conflict), the Arabian Gulf, and the western Pacific (Korean Peninsula, Taiwan Strait).

Since the development of nuclear weapons, **strategic nuclear deterrence** has been a mission of a specialized portion of the navies of nuclear-capable states. The United States, the United Kingdom, France, and Russia maintain fleets of strategic nuclear ballistic missile-carrying submarines (referred to as SSBNs). China also maintains an SSBN, and other nations aspire to eventual development of this type of submarine. SSBNs are perceived as the most secure means of nuclear deterrence because they are hard to detect. They played a significant role throughout the Cold War in maintaining the stability of the east-west nuclear balance. Most sea-based tactical nuclear weapons were removed from active inventory by all navies in the final years of the Cold War. (See Chapter 11.)

Another function of navies, primarily those assigned the mission of ocean resource protection, can be referred to as **'estate management at sea'**, a term coined by the modern naval theorist James Cable.[4] This can include enforcement of fishing or pollution regulations, prevention of illegal maritime entry, or rescue at sea. A few nations maintain a maritime agency separate from their navy. The US and Canadian Coast Guards are examples of this type of organization. Nations with small navies see estate management as their primary naval mission and the chief justification for maintaining a navy. On occasion, estate management involves the use of force, such as during the 'cod wars' of the North Atlantic.

Whatever the phase or medium of naval combat or diplomacy, the application of force from the sea is conceptually similar to that on land. And, as Commodore and naval historian Dudley Knox noted, ultimately the whole point of power at sea is to affect

events ashore (see Box 5.3). Navies, however, have a dual role of first winning the struggle for command of the sea and then applying naval power against targets ashore.

KEY POINTS

- The principal conditions affecting the sea power of nations can include economic strength, technological prowess, socio-political culture, geographic position, dependence on maritime trade and sea resources, and government policy and perception.

- British strategists Sir Julian S. Corbett and Admiral Sir Herbert Richmond refined Mahan's theories to include joint operations between navies and armies and the practical requirements for sea control.

- The struggle for command of the sea reflects the opposite conditions of sea control and sea denial, as well as defence and interdiction of sea lines of communications or commerce (SLOCs) and choke points, coastal defence, amphibious and littoral warfare, and other operations involving the transport of land forces by sea.

- In peacetime, naval diplomacy, forward presence, strategic nuclear deterrence, and estate management at sea are the chief missions that navies perform. Estate management at sea is the primary mission of many smaller navies.

- Naval warfare ultimately involves the dual—generally sequential—functions of achieving command of the sea and projecting naval power against shore targets.

Contending views of modern naval strategy

The 1980s was a tumultuous period for sea power theory. Much of the discourse was provoked by a publicly declared policy about the strategic employment of the US Navy, and, by implication, the navies of the other North Atlantic Treaty Organization (NATO) members, in the event of a war with the Soviet Union. Known as *The Maritime Strategy* and issued in a form equivalent to a (UK government) 'White Paper' in 1986, the policy was thought by some to contradict the conventional and nuclear deterrence focus of NATO war planning and to constitute a return to Mahan's emphasis on seeking a decisive battle at sea in event of hostilities.

Prior to *The Maritime Strategy*, NATO gave navies the primary mission of protecting the SLOCs between Europe and North America. American and Canadian land and air forces had to be transported across the Atlantic to reinforce the NATO land forces already stationed in the path of any potential attack by the Warsaw Pact countries. Keeping these SLOCs open would be a challenge because the Soviet Union had a navy consisting largely of attack submarines and long-range bombers, forces that could not necessarily command the sea but were optimized for sea denial and interdiction. NATO would concentrate on keeping Soviet naval forces bottled up—essentially blockaded—north of the Greenland-Iceland-United Kingdom gap, which is the northern access to the main body

of the Atlantic Ocean. Soviet submarines, bombers, or surface ships that penetrated south of the gap would be hunted down and destroyed before they could interdict the convoys supplying the NATO forces. This approach would be similar to that adopted to fight German U-boats in the Second World War.

But *The Maritime Strategy* called for the US Navy to conduct attacks on the Soviet Navy in Russian home waters in the event of war. Naval force would be applied around the periphery of the Soviet Union—in the North Pacific as well as the North Atlantic, Arctic, Baltic, and Black seas—to reduce the pressure on NATO land forces along the central front (the inter-German border). Given the superiority of NATO naval forces in terms of aircraft carriers, surface ships, and quiet submarine technology, it was possible that such attacks would take the Soviet Navy out of the war. Alternatively, NATO navies could force Soviet leaders to take military resources away from the central front to protect their vast coastal regions. Such an **indirect approach** to achieving results in a global war made strategic sense; the Allies used this approach successfully in the Second World War, and it was in consonance with the theories of the influential British strategist of land warfare, B. H. Liddell Hart (see Box 5.6).

Critics of *The Maritime Strategy* were quick to note that such aggressive use of Western navies to threaten the Soviet homeland (as opposed to simply fighting its invading military forces in Central Europe or the mid-Atlantic) would increase the possibility of a nuclear war. Not only would Soviet leaders feel threatened by attacks on their own territory, but US operations would threaten the 'bastions' in which the Soviet nuclear ballistic missile submarines (SSBNs) normally operated. Unlike US SSBNs, Soviet SSBNs remained close to their home waters where they could be protected by naval warships. If Soviet SSBNs were deliberately or inadvertently sunk by NATO forces, it was feared that Soviet leaders would resort to a strategic nuclear strike against the United States.

This criticism was based on the belief that it would be impossible to maintain a conventional defence of Europe without the war going nuclear. An unspoken assumption of the proponents of *The Maritime Strategy*—and one unlikely to appear in any other published discussion—was that NATO ground forces would be likely to *lose* the conventional war in the central front if the Soviets were allowed to bring their entire military strength to bear in that one sector. Under previous NATO planning, this would theoretically prompt NATO to use tactical nuclear weapons to stave off complete defeat in Western Europe. The loss of a large part of the US Navy during a fight in Russian waters or attrition of Soviet SSBNs (enough would be likely to survive to avoid forcing Soviet leaders to make a 'use them or lose them' choice) were considered justifiable by the proponents of the

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BOX 5.6   LIDDELL HART ON THE 'INDIRECT APPROACH'

The history of strategy is, fundamentally, a record of the application and evolution of the indirect approach . . . The aim is to weaken resistance before attempting to overcome it . . . Avoid a frontal attack on a long established position; instead, seek to turn it by a flank movement, so that a more penetrable side is exposed to the thrust.

From: B. H. Liddell Hart, *Strategy: The Indirect Approach* (London: Faber & Faber, 1967), pp. 17–19.

Strategy if it meant that a NATO defeat along the central front and subsequent tactical nuclear war could be avoided.

Although Cold War naval strategy may seem like ancient history with the dissolution of the Soviet Union, the debate raised by *The Maritime Strategy* over the appropriate role of navies in wartime continues, though somewhat less stridently, today. Should navies be used as strike forces conducting semi-independent campaigns against targets on land? Should navies remain focused on maintaining the SLOCs so that their ships can transport and sustain the armies that will bring decisive land power to bear in distant theatres? Or should navies be confined to the role of coastal or resource defences?

To answer 'all three' might be logical, but each of these strategies requires different naval resources. A navy capable of projecting power against shore targets requires relatively expensive and sophisticated strike weapons, such as long-range cruise missiles and supersonic fighter-attack aircraft; amphibious warfare capabilities; and considerable self-protection against air and coastal threats. A navy focused exclusively on SLOC protection would concentrate on anti-submarine and surface warfare, and might emphasize lighter, less capable ships and non-supersonic aircraft. A navy confined to coastal defence could consist primarily of non-ocean-going patrol craft armed with short-range cruise missiles, and short-range diesel submarines. The difference between the resources required for a power projection navy and the resources required for a coastal defence navy is comparable to that between the gross national product of the United States and the gross national product of Kenya. Today, as throughout history, naval capabilities are tied to national wealth. The disparity between navies today is comparatively greater than ever before (see Table 5.1).

The expenditure of such resources itself has become a focus of debate, particularly in light of competing national requirements. At about the same time as the controversy over *The Maritime Strategy*, a revisionist debate occurred about the historical costs and advantages of sea power. Foremost were the works of an American historian of British naval history, Paul M. Kennedy. Kennedy argued that Mahan had grossly overstated the importance of sea power, and that Great Britain—the erstwhile greatest sea power in history—had actually bankrupted itself through empire and by spending too much on the Royal Navy. This argument was applied by analogy to the United States, which critics claimed was doomed to decline due to 'imperial overreach'. Most symbolic of this supposed overreach was the global US Navy, which even then dwarfed the capabilities of both allies and its potential, and powerful, adversary, the Soviet Navy. A global navy, it was argued, was both destabilizing and unaffordable. Better to confine Western naval efforts to SLOC protection than contribute to the coming economic fall of the West.

But the 'overreach thesis' eventually fell out of fashion. By contrast, the collapse of the Soviet Union appeared to demonstrate the validity of Western efforts to fund *The Maritime Strategy*. Faced with a resolute Western effort to prevent Soviet expansion and the triumph of free market economies, the Communist Party of the Soviet Union effectively gave up the geo-political competition. This was not an outcome predicted by the revisionist school. The result was that the United States continued to maintain—and to be able to afford—a global navy. Other Western allies reduced their navies since there was no longer an overriding Soviet threat and because it appeared that the United States would continue to defend the West's collective interests. Other navies of the world focused on

Table 5.1 Comparative ocean-going naval strength (as of August 2000)

	United States*	Russia	China	Japan	France	United Kingdom	Italy	India	Spain	Australia	Canada
Aircraft carrier	12	0	0	0	1**	0	0	0	0	0	0
VSTOL carrier***	0	1**	0	0	1	3	1	1	1	0	0
Cruiser	29	7	0	0	1	0	1	0	0	0	0
Destroyer	50	17	18	9	4	11	4	7	0	1	4
Frigate	28	10	0	46	34	20	24	13	15	8	12
Nuclear-powered ballistic missile submarine (SSBN)	18	21	1	0	4	3	0	0	0	0	0
Nuclear-powered attack submarine (SSN)	65	19	5	0	6	12	0	0	0	0	0
Nuclear-power guided (cruise) missile submarine (SSGN)	0****	9	0	0	0	0	0	0	0	0	0
Diesel-electric attack submarine (SS)	0	16	64	16	2	0	8	16	8	3	1**
Large amphibious warship*****	12	0	0	1	2	1	0	0	0	0	0
Amphibious warship	26	25	17	5	7	7	3	9	4	4	0
Mine warfare (ocean going)	27	15	34	30	22	21	13	12	6	4	2
Underway logistics	39	28	3	3	5	9	3	3	2	2	2
Other support	26	36	33	10	9	10	8	3	9	2	2
Total ships******	316	175	141	130	98	97	65	64	37	24	23

Primary source: International Institute for Strategic Studies; numbers are for comparative purposes and may not be exact.

Notes:

* US numbers do not include ocean-going US Coast Guard ships, many of which would be considered naval combatants by other nations.

** These units are judged to be currently non-operational or still in sea trials.

*** Vertical and Short Take-Off and Landing. Cannot operate conventional jet aircraft.

**** Many SSNs (and SSs) are capable of firing anti-ship or land-attack cruise missiles from vertical launch tubes or torpedo tubes even if they are not designated as SSGNs.

***** US large amphibious warships are similar to VSTOL carriers.

****** Total ships does not include non-ocean-going vessels, such as patrol combatants, and may not reflect official fleet totals.

the missions that they could afford. Sea power, in theory if not in practice, remains the goal to which many nations, especially China and India, aspire. The debate about the impact of navies continues.

KEY POINTS

- The US Navy's 1986 *The Maritime Strategy* became a focus of Cold War-era debates about the wartime functions of navies.
- Capabilities of national navies are tied to resource availability.
- Critics have charged that navies and the quest for dominant sea power have been the cause of overreach and the economic bankruptcy of great powers.
- The collapse of the Soviet Navy and the subsequent decision by most NATO nations to reduce their navies has left the United States with the sole global navy, creating an immense qualitative difference between its operations and those of most world navies.
- Sea power remains an aspiration of rising world powers.

Sea power, joint operations, and service roles

The collapse of the Soviet Navy had a significant impact on the operations of global and medium-range navies. Choke points might remain vulnerable to closure by 'rogue regimes'. But the ocean SLOCs, vital to the international trade on which the West, and increasingly the East, are dependent, no longer appear threatened. Without an ocean-going enemy fleet to challenge Western command of the seas, the prerequisite for a Mahanian decisive battle for sea control was no longer necessary. Navies are able to focus on the second sequential objective of naval strategy: directly affecting events ashore.

Advances in military technology, illustrated by the development of the Tomahawk land-attack cruise missile, also have increased naval force projection capabilities. With a range of thousands of kilometres, cruise missiles allowed the striking power of navies to reach far inland. This permits a direct application of naval power on to land in a way that was undreamed of in earlier eras. In 1998, when the United States decided to strike the terrorist training camps of Osama bin Laden located in Afghanistan, sea-launched cruise missiles were the weapons used—despite the fact that Afghanistan is a completely land-locked country. At the same time, continuing improvements in amphibious capabilities, illustrated by the amphibious assault hovercraft known as the Landing Craft Air Cushion (LCAC) and specialized amphibious ships carrying squadrons of troop-carrying helicopters, increased the percentage of the world's coastline suitable for amphibious operations from around 30 per cent to above 70 per cent.

The US Navy was the first to make the doctrinal switch by emphasizing protection of forces ashore in its 1992 strategy paper, *From the Sea*. Instead of *The Maritime Strategy*'s

emphasis on strikes against a blue-water enemy fleet and a nuclear-capable peer competitor, the new strategic vision emphasized regional threats (such as Iraq or North Korea), amphibious operations, and littoral warfare. The global navy would now effectively be fighting armies and land-based air forces as well as small, specialized coastal navies.

Combined with a phenomenal rise in the availability and power of computers and information systems, recent increases in military use of technology also have led to suggestions of a 'revolution in military affairs (RMA)' that is transforming the nature of warfare. Although the definition of RMA has been quite flexible, the defining characteristics are the use of information, precision weapons, and stealth to increase military effectiveness. (See Chapter 10.)

The RMA has helped make the naval portion of joint operations, such as were conducted in Operation Desert Storm in 1991, more effective. A byproduct of this focus on jointness is a perception that land power, sea power, and air power are merging in a way that will make the independence of navies and the very notion of sea power obsolete. This is true in the narrow sense. Given the lack of a global maritime threat and the increasing land reach of forces at sea, naval strategy should no longer be separated from joint strategy.

There still remains a fundamental difference, however, between what armies and navies do in war and peace. Unlike other forms of military power, naval forces are intended primarily to control the flow of commerce through the dominant mediums of commercial interaction, rather than to control territory or areas of human habitation. In short, armies are designed to control *territory*; navies are designed to control *access* to territory, international movement, and trade.

Globalization is the force behind a renaissance in the importance and principles of sea power.

KEY POINTS

- A 'revolution in military affairs' has greatly increased the range of naval weapons.
- Western navies are now able to more directly affect events ashore because of improved technology and the absence of an opposing fleet.
- Joint strategy appears to be blurring the distinctions of sea power, land power, and air power, but this masks the broader role of navies and sea power in geo-economics.
- Armies and navies have distinct roles in the control of territory and the control of international access.

Sea power and globalization

Globalization has been defined as a 'process of expanding cross-border networks and flows'.[5] Under such a definition, naval forces are both potential protectors and potential inhibitors of globalization. International trade in material goods travels primarily

by sea. Information may be transmitted electronically, but eventually, the transfer of information usually results in production of a material good.

The traditional language of sea power, with its concern for SLOCs, blockades, fleets in being, and forward presence, may seem like a quaint 'legacy' to those schooled in information technology and e-commerce. But though it may not use the same grammar as the information revolution, sea power uses the same logic of creating and influencing access (see Box 5.7).

The ultimate goal of sea power is unfettered *access* to the world's common transportation routes for raw materials and manufactured products, as well as access to the markets and sources of raw materials. The emerging concept of the 'new economy' revolves around *access* to the world's common information routes—such as the Internet—and to sources of information. This quest for increased access parallels advances in maritime commerce from 1400 to 1900. It is reshaping the economic and political world. Globalization, at its very heart, involves a struggle for economic and political power through access to sources and products.

This struggle includes access to the infosphere, financial markets, raw materials (of which information is one), the means of production, and markets. Just as a 'hacker' can use 'information warfare' to delay, disrupt, distort, or deny movement of traffic on the infosphere, more traditional military forces can deny access to the physical sources of the production of wealth. A navy is a form of insurance that such physical access could not be cut by military force—at least not without a fight. Navies themselves also can be used as a way to deny access to opponents or rivals. They do so while operating within the 'global commons' of the sea, their movement protected and sanctioned in peacetime by international law.

This reality means that naval forces are becoming even more important. Today there are nations or groups that would deny or restrict access to trade routes for political or

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BOX 5.7 COMPARATIVE IDEAS ON GLOBALIZATION AND SEA POWER

On globalization circa 2000:

By globalization we simply mean the process of increasing interconnectedness between societies such that events in one part of the world more and more have effects on peoples and societies far away.

From John Baylis and Steve Smith (eds.), *The Globalization of World Politics* (Oxford: Oxford University Press, 1997), p. 7.

On the growing importance of sea power, 1902:

This, with the vast increase in rapidity of communication, has multiplied and strengthened the bonds knitting the interests of nations to one another, till the whole now forms an articulated system, not only of prodigious size and activity, but of an excessive sensitiveness, unequalled in former ages.

From Alfred Thayer Mahan, 'Considerations Governing the Disposition of Navies', *National Review*, Vol. 39, July 1902, pp. 701–19.

economic reasons. Even those who view globalization as a beneficial force that will eventually result in a more politically integrated, economically balanced, just, or peaceful world must admit that the process of creating a more integrated world itself appears a potentially dangerous voyage.

A global navy allows a nation committed to global trade to guarantee the free use of trade routes that underlies today's globalization. If international trade is secure from threats to its disruption, trade can expand. Economic confidence and creativity are energized. Participants in the globalization process have a reduced sense of fear—and therefore reduced potential hostility—in a secure regime for international exchange.

The economic dreams of those who advocate globalization parallel those of the supporters of traditional sea power: a world with assured access to the lines of communication and commerce that produce prosperity. The linkage between modern globalization (seen as a beneficial process) and sea power is perhaps most evident in this common objective of keeping the sea lines of commerce open. (See Box 5.8.) Sea power can have another important political impact. By creating a climate of assured security, it can help bind nations together in co-operative military relationships that spread outward to the political and economic arenas. The Pacific, for example, is a vast region where naval interactions play a major role in determining security conditions, but the same principle applies elsewhere.

KEY POINTS

- The concepts of sea power are applicable to the security concerns of a globalizing world economy.
- The ultimate goal of sea power is unfettered *access* to the world's common transportation routes, as well as access to markets and materials. The emerging

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BOX 5.8 CONTINUALLY GROWING IMPORTANCE OF WORLD MARITIME TRADE

- 90 per cent of world trade (measured in weight and volume) travels by water.
- Between 1980 and 1997, the volume of global exports and imports (not including services) increased by over 150 per cent. The actual monetary value of exports and imports climbed during that period from approximately US$4.1 trillion to US$11.3 trillion.
- In the United States in 1998, almost 20 per cent of the gross domestic product was the result of foreign trade. Worldwide the average was 26.8 per cent of gross domestic product. This is an increase from 21.8 per cent in 1988. For nations such as Singapore world trade approaches 90 per cent of gross domestic product.
- According to a US Department of Transportation report issued in February 2000, global ocean-borne commerce is expected to continue to grow 3 to 4 per cent annually over the next few years.
- A significant portion of the world's trade passes through three choke points: the Panama Canal, the Strait of Hormuz, and Straits of Malacca.

Sources: Transportation Institute, World Bank, International Monetary Fund, US Department of Transportation.

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concept of the 'new economy' revolves around *access* to the world's common information routes (such as the Internet), to sources of information, and to potential markets.

- Naval presence encourages stability and security, helps set the stage for diplomatic and political co-operation, and allows trade to grow.

Conclusion: Sea power beyond the sea

Arguments about the future of sea power are inevitably based on perception. If one considers sea power to be merely the military forces that conduct combat at sea, then there is little future for sea power in a world where there is but one unchallenged global navy. Land-based air forces appear to have become the preferred instrument of high-technology warfare, backed by a variety of information systems, including those with at least one node stationed in space. On the ground, peacekeeping operations demonstrate the broadening functions of armies. Barring the occasional cruise missile or naval air strike, or the amphibious movement of small numbers of troops from ship to shore, naval forces do not appear to have much of a peacekeeping role. 'Anti-access' coastal defences may be more formidable, and some would suggest the ability of navies to influence events ashore will inevitably decline.

But surface appearances are deceiving. And if one understands sea power as the ability to use the sea for access to the world, and therefore essential to the globalization of the world economy, navies are becoming more important as well. Armies are designed ultimately to control *territory*; navies are designed to control *access*. If globalization is really breaking down the territorial barriers of our world, as most of its proponents suggest, then access to information, markets, or resources is becoming more important to the world's political economy than is control of territory.

Given the end of the Cold War, globalization, and continuing geo-political changes, should there also be a broad definition for navies? From a wider perspective, a navy is the portion of military forces that ***operates in the fluid mediums that humans use for information transmission, transportation, and exchange, but cannot normally inhabit***. Its prime purpose is to *ensure or deny access*. Its effect on territories and population is generally indirect. The freedom of operation that the law of the sea allows in the international commons of the ocean, however, provides for independent and direct effects on land to an ever-increasing range.

But this broad definition can be seen as going beyond the limits of the sea (and land) and attempting to apply sea power principles to other mediums. Space is effectively an 'ocean', and cyberspace, too, operates as a medium of exchange. Is it not logical that sea power concepts apply there? This question will vex strategists in the future. Beyond bureaucratic struggles between military services and agencies, the answer might be that sea power really is a concept without physical and geographic limitations.

QUESTIONS

1. Is sea power a distinct form of global relations, or primarily an attribute of national military power?

2. Can sea power function as a counterbalance to dominant military power on land?

3. Are historical examples appropriate analogies for understanding world politics today? Do they demonstrate an enduring importance of sea power?

4. Are the principles of sea power applicable to air and space power? Are there clear distinctions between sea, air, and space in terms of the practice of warfare?

5. Did *The Maritime Strategy* contribute to or hinder the relatively peaceful end of the Cold War? Do navies act as deterrents?

6. Is there a role for sea power in peacekeeping?

7. How dependent is the global 'new economy' on maritime trade and the sea? Do cyberspace and globalization make sea power more or less relevant?

8. In terms of the expenditure of military resources, what type of navy (global, regional, coastal, or other) is appropriate to most nations today? Will this continue to be true in the future security environment?

ENDNOTES

1. To put seaborne commerce in perspective, a medium-sized, ocean-going cargo vessel carries tonnage on one voyage approximately equivalent to that carried by 300 of the largest cargo-carrying aircraft.

2. American amphibious operations in the Second World War were not confined to the Marine Corps. Units of the US Army participated in many of the amphibious landings; the landing at Normandy in the war against Nazi Germany consisted almost exclusively of US Army troops in addition to Allied soldiers. However, the techniques of modern amphibious assault were largely developed and perfected by the Marine Corps and then adopted by the US Army.

3. Eric Grove, *The Future of Sea Power* (Annapolis, Md.: Naval Institute Press, 1990), pp. 229–32.

4. See discussion in James Cable, *Navies in Violent Peace* (New York: St Martin's Press, 1989), pp. 82–91.

5. Ellen L. Frost, 'Globalization and Security: The U.S. Strategic Agenda', in Richard Kugler and Ellen Frost (eds.), *The Global Century: Globalization, National Security, and Defence* (Washington, D.C.: National Defense University Press, 2001).

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Yung, Christopher D., *People's War at Sea: Chinese Naval Power in the Twenty-first Century* (Alexandria, V.A.: Center for Naval Analyses, 1996). This study assesses the future growth of Chinese sea power. Currently there exists only a limited amount of published material concerning China's perception of sea power.

WEB SITES OF INTEREST

www.defense.gouv.fr/marine/rien.htm Official web site of the French Navy, published in English.

www.geocities.com/Pentagon/Quarters/5768/index.htm Privately maintained naval historical web site published in German and focusing on 'power at sea'.

www.imo.org/imo/links/lnkstart.htm International Maritime Organization's (IMO) Library Directory of Maritime Links; links to a wide range of web sites on maritime issues from shipping statistics to the Law of the Sea.

www.naval.ca Web site of the Naval Officers Association of Canada.

www.navy.gov.au/9_sites/spc/default_old.htm Web site of the Royal Australian Navy's 'Sea Power Centre'.

www.navy.mil Official web site of the US Navy with links to various US naval commands and organizations.

www.navy.ru/site-e.htm English-language web site of the Russian Navy.

www.nosi.editthispage.com Privately maintained web site providing 'a digital library of world naval operational news curated from open source intelligence'.

www.nwc.navy.mil Official web site of the US Naval War College. Alfred Thayer Mahan was one of the Naval War College's first instructors and president.

www.royal-navy.mod.uk Official web site of the British Royal Navy.

www.trans-inst.org Web site of the Transportation Institute, a private association monitoring maritime trade.

www.usmc.mil Official web site of the US Marine Corps.

www.usni.org Web site of the US Naval Institute, the world's largest non-governmental professional naval society. In addition to its noted journals, it publishes much of the world's literature on sea power.

6 Air Power: Theory and Practice

Timothy Garden

READER'S GUIDE

This chapter traces the development of air power thinking from the earliest days of flight to modern times. It argues that the prophets of air power were often flawed in their predictions. Air power technology developed rapidly and unpredictably. Army and navy leaders saw the new air systems as little more than extensions of their surface capabilities, and therefore lacked the imagination to develop new methods of fighting. Experience in war eventually forced some military commanders to realize that control of the air was necessary for victory. Strategic bombing was central to the thinking of professional airmen, but it could not guarantee victory until the development of atomic weapons. Eventually, missiles became more useful as nuclear delivery systems than piloted aircraft. At the end of the twentieth century, air power underwent a radical reappraisal after its successful application in a number of limited war campaigns. Precision air-delivered weaponry offered politicians an easier option than committing ground forces for prosecuting wars. Yet the terror attacks using civil airliners in 2001 meant that this approach to security was open to question again.

Introduction

The history of warfare has seen a continual search for technological advantage. Weapons have evolved that can kill at ever greater range. Both on land and at sea, the advantage has gone to the side that could see furthest, and then bring firepower to bear on the adversary. (See Chapters 4 and 5.) Armies would seek high ground; navies would post lookouts at the top of their ships' masts. Guns gained ever-increasing range. The advent of flying machines fundamentally changed the nature of warfare. In a period of less than a century, military use of the air has moved from tethered balloons to cruise missiles that use satellite-based navigation systems. The third dimension of warfare has encompassed space itself.

The novelty of the technology has created many problems for those who attempted to develop theories about the role of air power in war. Often they predicted capabilities that were beyond the science of their day. Centuries of maritime and land fighting experience held back the development of a new three-dimensional (air-land-space) doctrine. The first advocates of the use of air power had to fight difficult institutional battles to gain the resources needed to realize their vision of air power.

In the early days, aircraft, both heavier and lighter than air, were seen as little more than giving extra tactical height to the military commander for his surface battle. Yet commanders quickly grasped the ability to use aircraft or airships to threaten deep behind the front line, and governments feared that they would be unable to defend their cities against bombs dropped from the air. Theorists extrapolated the limited experience of such attacks in the First World War to claim that the bomber was the war-winning capability of the future. Their predictions, however, did not materialize immediately. Defensive measures, lack of bombing accuracy, and civilian resilience meant that the Second World War had to be fought by a more traditional and prolonged all-arms campaign. It was not until the last days of that war in 1945 that the use of an atomic bomb changed the calculus of warfare. From the nuclear devastation of Hiroshima onwards, it became possible to guarantee the total destruction of cities from the air.

The period from the end of the Second World War until 1989 was dominated by the potential for a nuclear war between the Soviet Union and the United States. Each, with its allies, fielded thousands of weapons that in the early days would be delivered by aircraft. In later years, missiles became the preferred delivery system. This Cold War remained cold because of the absolute assurance that nuclear weapons delivered from above would leave no winner. Air power played the key role in making war between major powers unwinnable.

Since the end of the Cold War, nuclear weapons have been less prominent in strategic thinking. Smaller, more traditional wars have become the focus of international interest. The United Nations now has a larger role in efforts to right international wrongs such as the invasion of Kuwait by Iraq in 1990. A new approach to warfare has been developed through these experiences in the last decade of the twentieth century. Air power has become much more precise in its use of conventional weaponry. This has allowed powers to exert force without risking large casualties either to their own forces or to non-combatants in the target zone. Air power has become the weapon of choice: to be used

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BOX 6.1 KEY CONCEPTS

Air power

The ability to project military force in air or space by or from a platform or missile operating above the surface of the earth. Air platforms are defined as any aircraft, helicopter, or unmanned air vehicle.

(as defined in *British Air Power Doctrine*)

Command of the air

To have command of the air means to be in a position to prevent the enemy from flying while retaining the ability to fly oneself.

(as defined by Douhet in *The Command of the Air*)

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ahead of, and perhaps instead of, ground forces. After a century, the new capabilities of air systems are leading the world to look at the use of military force in a new way. Box 6.1 sets out key concepts in air power.

A new military capability

The first uses of air power

People have dreamed of flying like the birds for all of history. Yet, it was not until 1783 that the Montgolfier brothers in France first overcame gravity in their hot-air balloon. By 1794, at the Battle of Fleurus, the French generals were able to direct the operation from their aerial headquarters. Tethered balloons were developed over the next hundred years to provide useful artillery-spotting lookouts. The major limitation of such balloons was their lack of directional control. They either had to be captive with a tethering line, or had to be allowed to drift with the wind. The first dirigible airship was flown by Henri Giffard in France in 1852. The internal combustion engine gave a more effective power source to airships developed for both civil and military use. In Germany, Count von Zeppelin made great advances in flight technology that provided his country with a significant military airship capability. Nevertheless, airships remained slow moving and vulnerable because they had to displace large volumes of air to provide the lift for their engines and payload. Speed would require the development of heavier-than-air flying machines. Box 6.2 summarizes the milestones in the history of air power.

Controlled powered heavier-than-air flight was achieved at Kitty Hawk, North Carolina, on 17 December 1903 by the Wright Brothers. Military interest varied, but enthusiasts ensured that the technological development of aircraft was rapid. Louis Bleriot flew across the English Channel in 1909 demonstrating that England was no longer safe as an island nation. In 1911, a Curtiss biplane was launched from and landed back on a warship. That year was to see the first use of air power in war. Italy was at war with Libya, and

BOX 6.2 **AIR POWER MILESTONES**

1783	Montgolfier brothers' balloon flight
1852	Giffard airship flight
1903	Wright brothers' heavier-than-air powered flight
1907	F. W. Lanchester publishes aerodynamics theory
1909	Wright Model 'A' bought as first military aircraft
1910	Ely takes off in a Curtiss biplane from a ship
1911	Lt. Gavotti drops bombs on Turks from aircraft
1914	The UK deploys anti-aircraft guns to army
1915	Fokker produces forward-firing interrupter aircraft gun
1917	Curtiss aerial torpedo is deployed as pilotless aircraft
1918	The formation of the first independent air force by the UK
1923	Cierva produces autogyro
1926	Bennett flies over the North Pole
1927	Lindbergh makes first solo trans-Atlantic flight
1930	Whittle patents the jet engine
1934	Von Braun demonstrates the liquid-fuelled rocket for the German army
1935	Watson-Watt radar successfully demonstrated
1936	Focke-Achgellis helicopter's maiden flight
1937	*Hindenburg* airship disaster
1939	He 178 jet aircraft's maiden flight in Germany
1940	Battle of Britain
1941	Butement invents proximity fuse
	Radar targeting deployed with H2S system
	Pearl Harbor surprise air attack by Japanese
1943	Chaff used by RAF to counter German radar defences
1944	V-1 cruise missile and V-2 ballistic missile attacks on the UK
1945	Atomic bomb tested and subsequently dropped on Japan
1947	Yeager breaks sound barrier in X-1 rocket aircraft
1948	US B-50 bomber flies non-stop around the world
1949	Berlin airlift
1950	Korean War—jet fighters in combat
1952	Test of first H-bomb by the USA
1957	Sputnik 1 orbits the Earth
1959	USA tests first anti-missile missile
1961	USS *Enterprise*, first nuclear-powered aircraft carrier, commissioned
1969	Apollo 10 mission completes manned landing on the moon
1970	Laser-seeker heads used on bombs in the Vietnam war
1976	US Tomahawk cruise missile tested
1982	The Falklands conflict includes 8,000 nm strategic bombing missions
1991	The Gulf war introduces prolonged air campaign doctrine
1999	Kosovo air campaign conducted without ground force option
2001	Terrorist use of civil aircraft for strategic attack on USA

nm = nautical mile

began using aircraft and airships for aerial reconnaissance. By the following year, hand-held bombs were being dropped by pilots on troops below.

Air power in the First World War

The French followed these trends closely and took the lead in developing air commands. At the outbreak of the First World War they had some 138 military aircraft. Germany had concentrated its early development work on airships for military use, but it too was building heavier-than-air machines, and had 232 by 1914. The United States showed remarkably little interest in military aviation, which was why the Wright brothers spent their time selling their machines in Europe. The British reorganized their air capabilities into an army specialist force, the Royal Flying Corps, and subsequently added the Royal Navy Air Service in early 1914. In July 1914, shortly after war was declared, the 37 airplanes of the Royal Flying Corps flew across the Channel to France. The primary role of these aircraft was reconnaissance, and they rapidly proved their worth to the land commanders. In the first big battle of the war at Mons, General Sir John French reported that the Royal Flying Corps had provided crucial information on enemy movements. The new air capabilities, however, were often used in the early days of the war for artillery spotting.

Inevitably, when German aircraft found themselves near French or British aircraft, small-arms fire was exchanged. This led to each side developing armaments for their aircraft. From 1915 onwards, the use of forward-facing machine guns, which fired through propeller blades, allowed fighter tactics to be developed. Tactical formations of aircraft had their genesis in cavalry manœuvres, and air-to-air combat became a mission in its own right. The need to control the airspace above them was becoming obvious to commanders. They had to give higher priority to this task if they wanted to avoid enemy air reconnaissance and artillery spotting. In many ways, the development of air power progressed most rapidly in the maritime environment. Reconnaissance, for instance, developed into anti-submarine warfare. Air defence fighters were needed to protect cargo ships from attack. The British Navy developed its own bomber force to destroy the Zeppelin threat by bombing their bases in Germany.

Although of relatively limited military effectiveness, the most significant air power development of the First World War was strategic bombing. Both military and civilian targets were attacked. The greatest shock was to Britain, which, as an island nation, had long felt secure from enemy attack. As a consequence, the German Zeppelin (airship) and Gotha (bomber) raids on London had a disproportionate effect on future air power thinking. Some 9,000 bombs were dropped by German airships and aircraft on Britain during the whole of the war, killing some 1,413 people and wounding a further 3,408. In response, the British public clamoured for air defence at home and retaliatory strikes on Germany.

Air forces need a separate organization

The development of air power during the First World War was extraordinarily rapid, but was not particularly well thought through. Army and navy commanders did not know what the new technology could offer. Aircraft were expensive in terms of the cost of

equipment and also in their need for trained crew members. Arguments over funding priorities further hampered developments. This was unacceptable to the British government, which felt uniquely threatened by this novel military capability. These organizational problems led to the establishment in 1918 of the first separate military arm for air power in Britain, the Royal Air Force. Winston Churchill, who was the politician in charge of the Royal Navy, was quick to understand the importance of an independent system for managing air assets. He pushed forward the establishment of a new air ministry to manage all aircraft equipment procurement.

In the First World War, air power was used in virtually all of its modern military roles. There was no time for theorists to discuss optimum strategies for incorporating this new capability into traditional war-fighting doctrines. The airmen of the time had a high casualty rate, which meant there were few available to fight institutional battles against entrenched military interests. By the end of the war, of the 175,000 military aircraft built by France, Germany, and Britain, some 116,250 had been destroyed.

KEY POINTS

- The initial role of aircraft in warfare was primarily reconnaissance.
- Strategic bombing was the most significant air power development of the First World War, although its military success was limited.
- The novelty of air capability meant that initial strategies regarding air power in warfare were ill suited to the task, resulting in major losses.

Between the wars

Air power prophets in the wilderness

With the end of the Great War, there was little general interest in learning the air power lessons of the conflict. The expectation that this had been a war to end war meant that military spending was rapidly scaled down everywhere. In Britain, there was debate over whether the new Royal Air Force was necessary in peacetime. There was little sympathy for spending money on this expensive part of the military establishment. The RAF was reduced within six months of the Armistice from 188 operational squadrons to just 23, of which fewer than half could be deployed. Hugh Trenchard, who had served with the Royal Flying Corps and had risen to be Chief of the Air Staff of the new RAF, became the custodian of British air power thinking throughout the 1920s. He was a strong believer in offensive air power, and of the importance of the bomber in any future wars. In the absence of planning for major wars, however, he was able to promote the RAF in the role of imperial policing. Britain had a large empire to control, but was short of money to fund the necessary troops. Trenchard was able to offer his small and relatively inexpensive

force as a cost-effective way to keep dissident colonials in check. In Iraq in 1921, for instance, five RAF squadrons were used to replace a ground force of 33 battalions.

During the interwar period, it was the ideas of an Italian general, Giulio Douhet, that captured the imaginations of strategic thinkers. His book, *The Command of the Air*, was published in 1921 and translated into English two years later. He declared that in future wars whichever side could win in the air would achieve victory. He argued that aircraft had extended the traditional battlefield to include civilian populations, and that attacks should be made on national institutions and infrastructure. The effects of urban-industrial bombing would undermine the population's will to fight as well as disrupting its means to fight. To this advocacy of strategic bombing, he also added the importance of attacking an enemy's air power capability when it was on the ground and vulnerable. His ideas were echoed widely by those who had been involved in the air operations of the First World War. (See also Churchill's views, in Box 6.3.)

In the United States, General Billy Mitchell's strong advocacy of air power was making him a household name, but unpopular with his military colleagues. In 1921, he provided a practical demonstration of the effectiveness of air strikes by sinking a captured warship. He followed this two years later with two more high-profile test attacks and sinkings. But it would be another twenty years before the United States discovered at Pearl Harbor that it was as vulnerable as Billy Mitchell had predicted. He railed, as successive airmen have, against the inefficiencies of air power being shared between the army and the navy. He was court-martialled in 1925 (Douhet had suffered a similar fate in 1916).

If the victorious powers of the First World War were investing little in military air power, this was not true elsewhere in the world. The defeated Germany was notionally constrained in the development of military capability. The Germans, however, recognized the importance of air power, which they initially developed secretly in co-operation with the Soviet Union. The Luftwaffe came into being in 1935 as an independent service with a different philosophy from the strategic bombing doctrines of Trenchard, Mitchell, and Douhet. The Luftwaffe was primarily trained and equipped to attack enemy forces in the air, on the ground, and at sea. It was designed to concentrate firepower to disrupt and destroy the opponent's military capability. The German

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BOX 6.3 CHURCHILL ON AIR POWER

We are sure that if, after a prolonged spell of peace, war on a grand scale suddenly broke out again, the Power which had the most intensive study of aerial warfare would start with an enormous initial advantage, and the Power that neglected this form of active defence might well find itself fatally situated.

Proceeding on this assumption, we contend that the British policy is to develop the independent conception of the air as an art, an arm and a service; and this method alone will secure that qualitative ascendancy and superiority which the safety of the country requires. We think that to keep this new arm, with its measureless possibilities, in perpetual thraldom to the army or navy, and confined solely to ancillary and auxiliary duties in relation to these two older services, will be to rob it of its most important developments.

Winston S. Churchill, 1921

doctrine of blitzkrieg required early and massive air power to be brought to bear on the enemy's combat forces. Japan developed its own military air capability, which was used to great effect against China from 1931 onwards. By 1937, the Japanese could undertake long-range bombing missions. They also developed a network of forward-refuelling airfields to extend the range of their fighter aircraft.

Civil aviation and minor wars drive progress

For the United States and the rest of Europe, advances in air power technology in the interwar period were driven more by growing civil interest in and enthusiasm for flying than by the worries of air-minded strategists. Air races accelerated developments in engines and airframes. Altitude record-breaking attempts were just as important. In 1920, a US pilot had achieved 33,000 feet and in 1938, an Italian held the record at 56,000 feet. Similar progress was made in extending the range of aircraft: the French achieved just under 2,000 miles in 1925, while the British had broken 7,000 miles by 1938. Everywhere was potentially within bombing range. There also were real operations for nations to test their new capabilities. Japanese air operations against the Chinese received little attention in Europe, but allowed the Japanese to improve their air doctrine before the Second World War. Of greater significance was the Spanish civil war from 1936 to 1939. The Spanish air force, and Soviet, German, and Italian air power were in action over the skies of Spain. The Soviet force included about 1,500 aircraft, but they were inaccurate as bombers and vulnerable to German fighters. The German Luftwaffe exercised their doctrine of joint operations in support of ground forces to great effect. They also were able to bring in new tactics where necessary. Fast-flying tactical battle formations replaced tight display formations. Air power was integrated into ground operations with the use of forward air controllers. Strategic bombing was concentrated to test for maximum effect.

As war broke out in 1939, Germany was better prepared to fight in the air than were its opponents. The Germans had good aircraft and experienced crews, and had developed air power as a key part of their military doctrine. In Britain, the late build-up of capability and a focus on bombers had left the air defences less than comprehensive. Nor was there much agreement within the RAF, or beyond, on the most effective employment of these scarce resources.

KEY POINTS

- The RAF maintained its relevance by providing a cheaper alternative to ground forces when subduing colonial uprisings.
- The victorious powers of the First World War were not convinced by the advocates of military air power, but the Germans, Russians, and Japanese all invested in developing it.
- By the Second World War the Germans, unlike the Allies, had developed a comprehensive strategy, linking air power to ground operations.

The Second World War: Air power affects every campaign

Learning by combat experience

In the six years from 1939 to 1945, every theory of air power was put to the test and modified, and all the main roles of modern air warfare were exhaustively exercised. The Second World War was a new type of war in terms of communications, speed, and scope. Air power had made every civilian potentially vulnerable, and had taken away the safety of dispersal and distance. Yet the promises of technology were often found wanting, and each new technological development was swiftly matched by a counter-response. Radar made air defence practical, but was soon degraded by countermeasures.

In popular images of the war, the Battle of Britain remains the most memorable of air campaigns. Britain had only limited numbers of air-defence fighters. In August 1940, the German bombers and escorting fighters outnumbered the defenders by about three to one. Following their philosophy of using air power to attack military targets, the German bombers struck ports, airfields, and British fighter production. The RAF senior leadership was divided over the best defensive tactics. By the end of the month, Germany was successfully targeting air-defence radar stations and command centres. German offensive counter-air operations were working, and the British air-defence system was being defeated. On 7 September 1940, Germany, believing it had won control of the air, switched its bombers to strategic targeting of London. This allowed the British air-defence system to rebuild and fight back. Later strategists have taken the lesson that air superiority lasts only as long as enough air effort is devoted to it. Unlike the permanent seizing of ground by advancing armies, the battle for airspace control must be continued day after day.

A less well-publicized aspect of the air war was the Battle of the Atlantic. Britain was dependent on supplies from North America being delivered by convoys across the Atlantic. German submarines were increasingly successful in sinking these ships. Allied air cover was able to reduce these losses, but it was difficult to obtain the scarce air power resources needed to keep the submarine threat at bay. The strategic bombing of Germany was believed to be a more important task for long-range assets than patrolling shipping lanes.

The strategic bombing campaign encapsulates many of the weaknesses of the strategic thinking of the interwar years. Proponents had overestimated the psychological effect bombing would have on populations; they also expected far more technical capability from bombing systems than was available. The lethality of the bombing escalated as the war continued. The British began the war by dropping leaflets and ended it by destroying cities. Again there were differences of view between commanders over which possible targets (military, industrial, or civilian) should be destroyed to win the war as quickly as possible. Poor bombing accuracy compounded the difficulties. Arthur Harris, the commander-in-chief of Bomber Command, was an ardent proponent of the area-bombing campaign, but found himself increasingly in dispute with RAF leaders who sought more precision attacks against key industrial or logistical targets.

On the other side of the world, the Japanese showed that it was possible to use air power to win battles quickly, especially when aided by the element of surprise. The attack on the US fleet at Pearl Harbor in 1941, and the subsequent Japanese victories in the Philippines and Singapore, showed how well they had developed their offensive air power capability. In strategic terms, the results were less helpful: the United States entered the war and ultimately defeated the Japanese. US industrial might was able to outproduce both Japan and Germany. By 1945 the United States could field 18,000 aircraft against fewer than 5,000 Japanese machines.

Air power leaders

All the combatants were learning that the control of airspace was vital to survival, but that air power alone could not provide a quick victory. Air power was most effective when its operations were closely co-ordinated with the appropriate surface forces. Air power could provide extended reconnaissance, defend against enemy air attack, disrupt enemy supply lines, halt an enemy advance, and take out difficult targets. Concentration of firepower in time and space could be very effective in turning a ground battle. Aircraft, however, could not hold territory or maintain the continuous presence of armies. Nor could they transport the weight and volume of cargo of surface ships. Combat air power was expensive, always scarce, but always needed. The establishment of both strategic and tactical priorities for air assets was essential, and it took time to learn through mistakes.

While military thinkers are more vocal in peacetime, it is clear that there were some whose ideas were key to the way air power was used in the Second World War. Winston Churchill is perhaps given too little credit for his lifetime appreciation of what air power means to warfare. He had been at the centre of British air power development in the previous war. He had warned of the implications of German air power for British security in the 1930s. As prime minister, he was able to determine both strategic priorities and the aircraft production to support the tasks he deemed important. In Germany, Hermann Göring had been a famous operational air commander in the First World War. He rose to be the first and only Marshal of the Reich under Hitler. While this helped the Luftwaffe greatly with resources, Göring lacked the vision of Churchill, and the Luftwaffe remained focused on supporting troops on the battlefield rather than conducting strategic strikes. The Soviet Union had taken air power seriously from the early days of the revolution. The Soviet Air Force, however, suffered greatly from the loss of experienced leaders when Stalin purged the Red Army Command in 1937. Hitler further undermined it when he gave priority to its destruction in 1941. Stalin drew the lessons for the post-war importance of strategic air power. In Japan, Admiral Isoruku Yamamoto had progressed from chief of navy aviation to become Commander-in-Chief of the navy. He had been instrumental in the design of the Japanese aircraft carrier fleet, and was the driving force behind Japan's approach to maritime air power in the Pacific.

The Second World War marked the birth of the United States as the air power nation. It had been surprisingly indifferent to prewar air power enthusiasts, and had contributed little in the development of strategic thinking. Billy Mitchell's failed attempts to obtain a separate air force had left air doctrine as no more than a part of the army and navy. Nevertheless, in a parallel to Trenchard's career, General Hap Arnold rose through US

army ranks to become the father of the US Air Force. He was a follower of Douhet and the key air power adviser to President Roosevelt. Winning the war in the air required enormous and sustained industrial production, a pool of well-educated recruits as pilots, and a strong research base to develop new technologies. The United States was ideally placed geographically, economically, and culturally to meet these criteria. It has maintained its pre-eminence ever since.

In the closing days of the war, the Douhet theorists were given a new lease of life when the United States dropped two atomic bombs on Japan. The nuclear age was born and air power now appeared the ultimate guarantor of victory. (See Chapter 11.)

KEY POINTS

- Control of the air is only retained by a continuous effort. Air power cannot hold territory.

- The Japanese attack on Pearl Harbor in 1941 highlighted the importance of air power. The United States rapidly increased production, becoming the pre-eminent air power.

- Air power must be co-ordinated with sea and land power to produce maximum battlefield and strategic results.

- Air power is expensive and setting resource priorities correctly influences the likelihood of success.

Air power during the Cold War

Air power and nuclear deterrence

If the atomic bomb was to dominate strategic thinking for the next half-century, the jet engine and the missile also were set to transform the mechanics of air power. All three technologies had been deployed in the latter days of the Second World War, but there was limited experience from which to extrapolate the potential consequences for air power. Despite the fact that a variety of air power missions contributed to the war effort, the postwar focus for the victorious powers was on development of nuclear weapon delivery capabilities. Yet very rapidly, a non-combat form of air power was to prove critical in the growing confrontation between the Soviet Union and the West. Berlin, blockaded by the Soviet Union in 1948, was sustained by a unique allied air transport re-supply operation. Box 6.4 summarizes the major roles of air power.

The Korean war (1950–3) was a reminder that conventional wars with limited aims remained possible in the nuclear age. Jet aircraft were available in numbers for the first time, but had to operate in a confined airspace. A limited war meant political constraints on targets, and as a result strategic bombing of China was ruled out. The lessons of joint

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BOX 6.4 **AIR POWER ROLES**

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* Airborne early warning and control.
* Air interdiction.
* Air reconnaissance and surveillance.
* Air-to-air refuelling.
* Anti-submarine warfare.
* Anti-surface ship operations.
* Combat search and rescue.
* Close air support.
* Defensive counter-air operations.
* Electronic warfare.
* Offensive counter-air operations.
* Strategic airlift.
* Strategic bombing.
* Suppression of enemy air defences.
* Tactical air transport.

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operations were re-learned, and the United States greatly expanded its recently (1947) independent air force. Again, the value of flexible air support to troops on the ground was demonstrated in what was a very difficult campaign. The helicopter improved mobility in the rough terrain over which many of these limited wars were fought. The British undertook operations in Malaya and the French in Indochina. The Israelis also were developing a viable air force to defend their newly independent country.

For the United States, the Soviet Union, and the United Kingdom, the nuclear bomber filled the key Cold War mission. Resources were poured into aircraft and weapons development and production. Conventional weapons took second place in the battle for funding, despite the need for a capability to fight limited war. In the United States, General Hap Arnold wrote a memorandum in 1945 arguing that in future the only defence possible was to field an overwhelming strategic offensive force as a deterrent to any aggressor. He outlined many of the arrangements that were to shape strategic nuclear forces throughout the Cold War. Academic and political thinking about deterrence also was growing more sophisticated. On the military side, General Curtis Le May, who commanded the USAF Strategic Air Command from 1948 to 1957, built a vast strategic bomber force which far exceeded the capability of any other nation. He shaped the US bomber force to ensure that the theoretical constructs of nuclear deterrence would work in practice. By the early 1960s, the Soviet Union, Britain, France, and China had developed nuclear arsenals and associated long-range delivery systems.

Deterrence theorists, such as Thomas Schelling, explored arcane game theory in deriving the force structure needed by the United States. (See Chapter 7.) The US-based RAND Corporation greatly influenced the development of Cold War air power thinking. The logic that deterrence depended on the nation being able to ride out a first nuclear attack, and yet still launch a devastating retaliatory nuclear attack became widely accepted. This led to a requirement for large nuclear forces widely dispersed, and a comprehensive national air-defence system.

Yet even as the bomber forces were being built, another technology was offering more assurance of a second-strike capability: the long-range ballistic missile. Offensive missiles, both air breathing and rocket powered, had been used by Germany against Britain during the Second World War. In 1959, Bernard Brodie argued in a RAND study that intercontinental ballistic missiles could provide greater assurance of nuclear retaliation than manned aircraft; but that a mixture of delivery systems provided an even greater degree of certainty that strategic forces would survive a nuclear attack. In the United States, Robert McNamara brought to the post of Secretary of Defense in 1961 a keen analytical mind. He started the trend for thinking in capability terms when making investment decisions. The nuclear powers have in the years since moved from reliance on manned bombers for nuclear delivery towards greater use of missiles based in silos on land and in submarines at sea. Indeed, the United Kingdom by 1998 had abandoned aircraft and land-based missiles as nuclear delivery systems. Box 6.5 provides a selection of twentieth-century prophecies in relation to airpower.

Limited conventional wars

As the Cold War deepened, the focus of air power thinking, in the five declared nuclear powers (Great Britain, France, the United States, the Soviet Union, and China), continued to be centred on strategic nuclear weapon delivery. In 1957, the USSR beat the United States in the race to place a satellite into orbit around the earth. In 1962, the United States reacted strongly over the deployment of Soviet nuclear-capable missiles to Cuba. The building and maintenance of a credible deterrent capability preoccupied Soviet and American defence establishments throughout the 1960s. Ironically, more thinking about the lessons of air power in limited wars would have helped the Americans in Vietnam and the Soviet Union in Afghanistan.

The Vietnam War (1964–75) was a savage reminder of the limitations of air power in fighting a guerrilla campaign. It was, however, a period of intense development in conventional air warfare tactics and technologies. Air mobility with helicopter gunship support brought a new level of integration between ground and air forces. While massive amounts of US air power could bring tactical victories, achieving strategic victory proved to be more difficult. Escalation of conventional strategic bombing was seen as the way to bring North Vietnam to the negotiating table. Yet again, air power theorists were taught the lesson that conventional bombing does little to make your enemy more amenable. A series of bombing campaigns from 1964 to 1968 added up to 300,000 missions and 643,000 tons of bombs dropped on North Vietnam. The North Vietnamese, however, continued to fight. By the end of the Vietnam war, technological developments allowed precise attacks while reducing bomber vulnerability. Nevertheless, in the end the United States withdrew its forces from Vietnam. Air power theorists continued to argue that the defeat in Vietnam was due to the political constraints rather than military inadequacy. But Korea had already shown the need for operational plans in limited war to take into account political realities.

If Vietnam and Afghanistan reminded the two superpowers of the limitations of air power, Israel showed the world the importance of air supremacy. Israel had given priority to developing a modern air force that was rightly feared by its Arab neighbours. The Yom

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BOX 6.5 **AIR POWER PROPHECIES**

In the air are no streets, no channels, no point where one can say of an antagonist: 'If he wants to reach my capital he must come by here'. In the air all directions lead everywhere.

H. G. Wells, 1908

Unlike artillery an air fleet can conduct extensive operations far from, and independently of, both Army and Navy. As far as at present can be foreseen there is absolutely no limit to the scale of its future independent war use.

J. C. Smuts, 1917

Future wars between civilised nations will be struggles for life in which entire populations, together with their industrial resources, will be thrown into the scale. Evolution has brought about the creation of air fleets to meet the demands of such warfare.

Sir Frederick Sykes, 1919

The air arm is the arm not of a rich people, but of a young people, ardent, bold, inventive, who love space and height. It is therefore an arm eminently suited to us Italians. The importance it has attained and its influence on the general character of war are favourable to us; it is the arm best suited to the genius of our race.

Giulio Douhet, 1928

I think it is well also for the man in the street to realise that there is no power on earth that can prevent him from being bombed. Whatever people may tell him, the bomber will always get through.

Stanley Baldwin, 1932

It is entirely possible that the progressive development of the air arm, especially with the concurrent development of atomic explosive, guided missiles and other modern devices will reduce the requirement for, or employment of, mass armies and navies.

Hap Arnold, 1946

The idea that superior air power can in some way be a substitute for hard slogging and professional skill on the ground in this sort of war [Korea] is beguiling but illusory.

Sir John Slessor, 1954

We have to assume, on the basis of Korean and World War II experience, that air forces, like naval forces, will play an ancillary role to ground forces.

Bernard Brodie, 1959

Air power, when measured in terms of output per dollar or life invested, is the cheapest, most effective method of fighting in human history—and the advent of precision makes it even cheaper.

John A. Warden III, 1997

Kippur war of 1973 lasted only 18 days, but it provided a wealth of air warfare data about the effectiveness of modern air weapons. The British and Argentines also learned the strengths and weaknesses of their air power capabilities during the Falklands conflict of 1982. It was a remarkable achievement for the United Kingdom, with its very small aircraft carrier force, to wage a successful war at a range of some 8,000 miles from home.

Subsequently, maritime air power advocates have used this conflict as a strong argument for the continuing importance of carrier-borne air power. Yet the costs of carrier aviation remain high and the examples of its utility often appear to be ambiguous.

While the sporadic examples of real fighting during the Cold War provided justification to air power enthusiasts for a whole range of capabilities, it continued to be the potential confrontation in Europe between the North Atlantic Treaty Organization (NATO) and the Warsaw Pact countries that determined force structures and technologies. The relatively simple deterrence policy of massive retaliation grew into NATO's adoption of the more complex 'flexible response', in which the credibility of ultimate nuclear use was enhanced by options to fight a conventional or tactical nuclear war. Flexible response allowed operational planners to build up complex scenarios that justified procurement of advanced air weapons systems, which also would be useful in other conventional wars.

By the fall of the Berlin Wall in 1989, air and space military systems had developed beyond the imagination of the early flying pioneers. Satellites could provide imagery of anywhere on Earth. They also allowed worldwide communications and could deliver a three-dimensional accurate location to any military unit. Missiles could threaten virtually worldwide instantaneous destruction. Bombers could make precision attacks with an assurance of no error. Fighters could shoot down other aircraft without ever seeing them. Air-to-air refuelling had extended the range of missions across the oceans. Ground-attack aircraft and helicopters had become easier to direct than artillery. Defensive and offensive countermeasures reflected the exciting technological growth of domestic economies. Yet, with the end of the Cold War, the theoretical edifice of air power now faced increasing scrutiny.

KEY POINTS

- After the Second World War air power planning concentrated on nuclear weapon delivery capabilities, at the expense of conventional strategies.
- The role of air power as the nuclear delivery system was complemented, then virtually replaced, by the development of long-range ballistic missiles.
- Both Korea and Vietnam demonstrated the importance of taking political realities into account when planning a limited war.
- The development of NATO's 'flexible response' meant that conventional, as well as nuclear, air power roles were once again being explored.

The air power decade, 1990–2000

Lessons from the Gulf war

NATO nations raced to reduce their military spending as the threat from the Soviet Union disappeared. There was little agreement on the force levels that would be needed in the future. Indeed, there were predictions that, without the common threat of the Warsaw Pact, defence would revert to minimum national needs. In August 1990, however, before most governments had completed their post-Cold War defence reappraisals, Iraq invaded Kuwait. This was a clear breach of international law that occurred in a region of considerable economic interest to the major powers. The United Nations imposed economic sanctions. Intense diplomacy was underpinned by the military build-up of a US-led coalition of 29 countries. Following failure of diplomatic solutions to the crisis, an air campaign (Operation Desert Storm) was launched against Iraqi forces on 17 January 1991. Although massive ground forces had been assembled nearby in Saudi Arabia, the force commander, General Norman Schwarzkopf, conducted a purely air offensive operation for six weeks. Extensive use of precision weapons destroyed infrastructure targets. Air defence systems, refuelling tanker aircraft, and a mix of offensive capabilities combined to orchestrate attacks. Cruise missiles, with terrain-mapping navigation, were used in quantity. Armour in the desert became targets of massive area bombing.

On 24 February, Schwarzkopf assessed Iraq's forces as sufficiently degraded to launch the ground campaign. He still assumed that there would be a difficult fight to free Kuwait. As it turned out, the Iraqi forces were routed and Kuwait was freed in under four days. Air power advocates now had a long-awaited, overwhelming success to cite as they touted the revolutionary impact a modern air force would have on the conduct of war. They claimed that modern precision air systems in large numbers would in future win wars, leaving ground forces the easier task of moving in afterwards to secure territory. The overwhelming success in the Gulf, however, proved to be a limited victory. Air operations of various kinds continued against Iraq for the rest of the decade.

While the scale of the coalition for the Gulf war was impressive, it was clear to all that the success depended on American technology, numbers, doctrine, and leadership. The United States had emerged from the Cold War as a military power unmatched by any other nation. It was investing much more than other states in defence research and particularly in aerospace and information systems. It appeared that US air power would be the dominant factor in military thinking. The very public success in achieving war aims with few casualties in the Gulf, however, had implications for future operations. The US public apparently now expected that the United States could win wars with little loss of American lives. US forces were withdrawn from Somalia when 18 of their troops were killed. In the worsening Balkan crisis, the USA preferred air strikes to promote agreement in Bosnia rather than contributing troops on the ground. Box 6.6 summarizes elements of modern joint air campaigns.

BOX 6.6 THE MODERN JOINT AIR CAMPAIGN

The modern air campaign requires the co-ordination of hundreds of aircraft from many nations to achieve the mission. Typically, AWACs aircraft will act as the aerial command post keeping a watch for airborne threats. The airfields and aircraft carriers from where the missions are launched will all require screens of missiles, guns, and fighters for air defence. The targets for the attack will have been identified by reconnaissance satellites, aircraft, and drones. Attacking aircraft will carry their own self-defence systems, but will rely heavily on electronic warfare support aircraft, defence suppression missions using anti-radiation missiles, and combat air patrol fighters. The bombers identify their targets with television, radar, or infrared sensors, or will be assisted by laser designation teams on the ground or in the air. The weapons will be guided to the target by laser, television, or satellite positioning systems. To extend the range of attack missions and to keep fighters on patrol, large numbers of air-to-air refuelling tankers will circle in nearby friendly airspace. Helicopters will be on standby to rescue any downed air crew. Once an attack is completed, the reconnaissance force will be retasked to make an assessment of the damage caused and whether the target needs to be attacked again. Naval forces may provide carrier-borne air power and submarine-launched cruise missiles. The army may be operating air defence missiles or attack helicopters, or be controlling incoming bombers with laser designation.

Humanitarian interventions

The 1990s saw a series of operations, mainly under United Nations (UN) auspices, to try to restore order in failing states around the world. (See Chapter 12.) Air power had few answers to mass killings in civil wars in Africa. Where agreements were achieved, such as in Bosnia, the peace could only be maintained by the long-term presence of international ground forces. Yet the decade was to finish with a war that was even more important to the air power dominance school of thought. Having come to an uneasy settlement over ethnic divisions in Bosnia, international attention moved to Kosovo. Serbia was increasing its repression of the ethnic Albanian community in this province; the UN and the Organization for Security and Cooperation in Europe tried unsuccessfully to negotiate a peace agreement.

For the first time NATO nations agreed, without a formal UN resolution, to use military force to solve a growing humanitarian crisis within a sovereign state's boundaries. The instrument of choice was air power. NATO leaders, when they launched an air offensive on 24 March 1999 against Serbian forces, ruled out an offensive ground campaign. Air power was being used to bring the Serbian leadership back to the negotiating table. Over 23,000 bombs were dropped in the ten weeks of operations. From the 38,000 NATO missions flown, there was not a single casualty to the alliance forces. A combination of political constraints on selecting targets, poor weather, and good Serbian defensive measures, however, meant that the military effectiveness of this air operation was limited. Nevertheless, a peace settlement was reached in June, before ground operations became necessary. Again, a large international force was needed to police the settlement in Kosovo. Shortly afterwards, Russia followed NATO's example of the use of air power in its rather less surgical approach to quelling rebellion in Chechnya.

BOX 6.7 AIR POWER CHARACTERISTICS

Strengths

- Flexibility—can be used for a wide range of tasks.
- Speed—the fastest way to bring military force to bear.
- Ubiquity—not constrained by geography.
- Reach—can operate over immense distances.
- Surprise—can arrive from anywhere at any time.
- Politically attractive—low casualty risk and ease of disengagement.

Limitations

- High cost—equipment and air crew are expensive in time and money.
- Vulnerability—dependent on complex base support on the ground or at sea, and on adequate self-defence in the air.
- Transitory—air power must be applied repeatedly to maintain effect.

While air power studies have concentrated on the offensive operations in the Gulf and the Balkans, a growing need for humanitarian intervention worldwide has placed other demands on air forces. Rapid response to sudden crises requires deployable forces. Nations are restructuring their military capabilities to provide such forces more easily. Strategic airlift and helicopter lift have in a much quieter way contributed greatly to international responses to crises in Africa and Asia. Planners in defence ministries around the world finished the decade more aware of the need for the full range of air power capabilities than they had been in 1990. Box 6.7 summarizes strengths and weaknesses of air power.

KEY POINTS

- The success of the air campaign against Iraq led to unrealistic expectations of the efficacy of using air power alone in future conflicts.

- Air power has a mixed record in humanitarian intervention. It proved of little use in African civil wars, although it did succeed in weakening the Serbs in Kosovo, in preparation for ground troops.

- Air power has contributed to humanitarian relief in other ways, such as strategic airlifts and rapid response forces.

Conclusion

The twentieth century was one of extraordinary progress in the application of air power. Most air power forecasters failed to make the right projections. This was scarcely surprising because technologies advanced rapidly, the tactical implications of new technology

were poorly understood, and the strategic context for the use of air power changed. Air power enthusiasts often overstated the capabilities of their systems, and found it difficult to make their case for resources in opposition to their land and maritime colleagues. Successful air power nations needed a good technological and industrial base, as well as an institutional understanding of what air power could offer.

The surges in practical military utilization of air power took place during the wars of the twentieth century. Theorizing was extensive in the periods of peace, but was often based on unjustified extrapolation of available data. Airmen were attached to the thinking of Douhet, who saw the importance of control of the air, and regarded the bomber as the ultimate weapon system. Yet for much of the century, air forces had their greatest impact by supporting ground forces in battle.

The United States currently has an overwhelming military capability that is largely based on its modern air power forces. It can carry out precision offensive operations on a worldwide basis from its home territory. It can deliver conventional or nuclear weapons from aircraft or with ballistic missiles. It also has the most advanced space and information capabilities, and it outspends all other nations on military research, procurement, and deployment. Given its focus on air power, developments in the United States will inevitably influence the way other nations look at their own forces.

Analysts argue about whether the air campaign for Kosovo has set a precedent that will lead to more humanitarian interventions. Some believe the political difficulties of maintaining political cohesion mean that NATO is unlikely to conduct humanitarian interventions in the future, and that only UN-authorized operations will be possible. These UN interventions are more likely to be at the lower-intensity end of the conflict spectrum and thus be less dependent on combat air power. There are still areas, however, where serious conflict is possible. The Korean peninsula remains divided. India and Pakistan continue to skirmish over Kashmir, and both sides in the dispute possess nuclear weapons. China has the potential to cause difficulty, particularly over Taiwan. Russia is not yet a stable market economy. Ethnic strife erupts around the world without warning, and sometimes with great ferocity. International terrorism turned to air power to deliver a massive attack on the USA on 11 September 2001. Hijacked civil airliners were used as if they were cruise missiles to destroy the World Trade Center in New York and to damage the Pentagon in Washington. Part of the response to the attack required an air campaign in Afghanistan, where the terrorist organization was based. In any of the possible future scenarios, air power is almost certain to have a part to play despite its cost.

Air power has become an increasingly attractive option for Western nations that wish to minimize the risk of casualties to their own forces. This will increase the pressure for developing air systems and tactics that keep the operator out of harm's way. Unmanned air vehicles (and increasing the stand-off range for weapons systems) will provide some solutions. Concerns about collateral damage, however, will ensure that the people will be kept firmly in the decision-making loop of attack planning.

Military air power began as a form of support for armies and navies. It grew to have strategic influence on its own. Many of the problems of development have come from the division of labour between armies, navies, and air forces. Recognizing this lingering problem, reforms have created joint military organizations that are designed to make the most

efficient use of all resources. This comes just at the time when doctrine seems to be moving more towards the independent use of air power for serious operations. Yet countering terrorism may call for a return to greater use of ground forces in hostile territory.

QUESTIONS

1. Which air power roles can be currently undertaken by unmanned systems, and will more be covered in this way in the future?

2. Is it a good thing that navies and armies operate their own air power systems alongside an independent air force?

3. Does the experience of the 1990s show that air power is now the main military arm, and that armies have been relegated to a policing role?

4. How can the limitations of air power be overcome?

5. If 'rogue states' can threaten mass destruction with long-range missiles, are air power resources better allocated to defence or offence?

6. What air power capabilities might the United Nations need for humanitarian relief operations, and should they be permanently allocated to the UN?

7. Do aircraft carriers have an increasing or decreasing role in the future?

8. Which space systems contribute to air power effectiveness?

9. Is there still a useful role for non-precision bombs?

10. What is the use of air power in counterterrorist operations?

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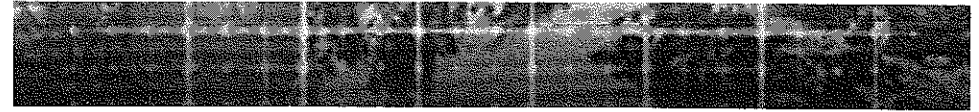
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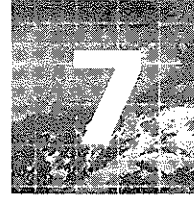
Deterrence in the Post-Cold War World

Keith B. Payne and C. Dale Walton

READER'S GUIDE

Deterrence is a key strategic concept. Attempts by one power to influence the decision making of another have been common in great power politics for many centuries. Deterrence became a topic of particular interest during the Cold War, as the United States built a nuclear arsenal to deter Moscow from undertaking actions gravely detrimental to US interests. During this long struggle, a large and intricate literature on nuclear deterrence evolved in the West, especially in the United States. This literature focused on how deterrence could be 'assured'. As more information has become available about deterrence, however, it has become increasingly clear that even deterrence backed by nuclear weapons cannot be 'assured'. The potential for deterrence failure is significant in a post-Cold War security environment in which increasing numbers of countries have weapons of mass destruction (**WMD**—nuclear, chemical, and biological arms) and the means to deliver them.

The concept of deterrence

Deterrence can be based on a threat of punishment or denial. Deterrence by threatened punishment is undertaken when a party (state 'A') attempts to signal to another party (state 'B') that if B commits a particular act, state A will retaliate by destroying assets that

Substantial portions of this chapter are drawn from Keith B. Payne, *The Fallacies of Cold War Deterrence and a New Direction* (Lexington, KY.: University Press of Kentucky, 2001).

B highly values. If A's punitive threat is sufficiently severe, the fear of that threat may deter B from committing the act. If B acts despite the threat, then deterrence has failed. A punitive threat may be posed against a state's industry, population, or even the lives of its leaders. The purpose of deterrence by threat of punishment is to shape opponents' decision making by presenting them with a potential cost that will outweigh any benefit they might derive from taking an unwanted action.

Deterrence by denial involves the same general mechanism, but with a different type of threat. In this case, A attempts to convince B that if B undertakes a military action, such as an invasion, B will be prevented from achieving its military-political goals. Other punishment is not necessarily threatened—if B believes that A will prevent it from achieving its military goals, this fact in itself may be sufficient to deter B's leaders from proceeding with their aggressive plans. (See Box 7.1.)

BOX 7.1 **TERMINOLOGY**

Any discussion of WMD and deterrence inevitably involves a good deal of technical discussion. Some basic terms include the following.

Ballistic missile: A missile with rocket motors that flies on a ballistic trajectory. Ballistic missiles carry a **payload** of conventional or WMD **warheads**, also known as **reentry vehicles**. Early ballistic missiles were inaccurate and could only carry relatively small payloads for short distances. More advanced missiles, such as **Trident II D-5**, are of intercontinental range and can carry a number of independently targetable warheads; missiles with multiple independent reentry vehicles are **MIRVed**.

Cruise missile: A missile with an air-breathing motor; in essence, a small, pilotless aircraft. Current models travel at subsonic speeds. American B-52s carry nuclear-tipped cruise missiles. The number of countries with conventional and/or WMD-armed cruise missiles is expected to increase greatly in the next quarter-century.

Decapitation strike: An attack that attempts to destroy the leadership and command, control, and communications (C^3) network of an enemy nation. If a decapitation strike is successful, the enemy state is unable to organize further effective defence: while it will still possess conventional (and perhaps even WMD) weapons, it is bureaucratically unable to organize military actions.

Disarming strike: An attack that attempts to destroy the enemy's nuclear forces. If a disarming strike is successful, the enemy state will not be utterly destroyed, but it will be militarily helpless and easily forced to negotiate a peace on the disarmer's terms.

SLBM: Submarine-launched ballistic missiles. SLBMs are carried by fleet ballistic missile submarines (known as **SSBNs**, and often called 'boomers'). SLBMs form the 'backbone' of the current US strategic nuclear force. The near-impossibility of reliably destroying deployed submarines gives these weapons considerable value in deterring a nuclear first strike.

Strategic parity: Approximate equality of strategic nuclear forces. Most observers believe that the United States and the Soviet Union/Russia have been in a condition of rough parity since the 1970s.

Triad: The combination of SLBMs, ICBMs, and nuclear-armed long-range bombers that together comprise the strategic nuclear forces of the United States and Russia. The Triad concept was first implemented by the United States because the placement of nuclear weapons in a number of delivery vehicles increases military options and makes it more difficult for an opponent to successfully undertake a disarming first strike.

These two types of deterrence can overlap. Deterrence by denial can be linked to threats of punishment in an attempt to convince a state that it will fail to achieve its goals, experience the losses inherent in a failed military operation, and suffer punishment. If the outcome of potential military operations is in doubt and B *may* succeed in achieving its military-political goals, A might seek to reinforce its deterrence with threats of punishment. Whether a policy of deterrence is based primarily on punitive or denial threats, or on a less defined mixture, the basic deterrence process remains the same: threaten opponents with sufficient costs so that they will choose not to act provocatively. While nuclear arms certainly may play a role in denying opponents an ability to secure military objectives, they are unsurpassed in supporting a threat of severe punishment.

This distinction between deterrence by a punitive threat and deterrence by a denial threat often is reflected by threats to destroy things states value, but may be unrelated to military operations. Alternatively, deterrence policies may threaten the ability of the opponent to carry on military operations. Punitive threats often include **countervalue** targets, such as cities, economic infrastructure, and political leaders. Denial threats may include **counterforce** targets such as military forces, command-and-control networks, weapons of mass destruction and their means of delivery, war-supporting industry, and the enemy leadership. As the dual classification of 'enemy leadership' suggests, there can be overlap between counterforce and countervalue targets. As Box 7.2 indicates, many moral and legal issues are raised by nuclear weapons.

Both deterrence threats and the actions that they attempt to deter can be broad or highly specific. With broad deterrence threats, a state may attempt to prevent a range of provocations, but it does not specifically obligate itself to undertake a particular action if the threat is defied. The precise details of the deterrence policy are not stated, in the hope

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BOX 7.2 **NUCLEAR USE, INTERNATIONAL LAW, AND MORALITY**

The use or threatened use of nuclear weapons in warfare raises many difficult moral and legal questions, and the morality of deterrence has been a subject of passionate discussion worldwide. The International Court of Justice issued an advisory opinion in July 1996 indicating that it would consider the threat or use of nuclear weapons illegal under many circumstances, even though nuclear arms are not explicitly banned by international law. This ruling, however, did not discernibly affect the deterrence policy of nuclear weapons states. Attacks against cities are morally and legally problematic: targeting civilian populations to inflict countervalue damage on a state is contrary to the spirit of international law and 'just war' theory. Another issue is discrimination—separating military targets from civilians and their property. States are generally understood to be obligated to avoid, in so far as is practical, intentional civilian damage. In some circumstances, this is not a problem: nuclear use in naval war, for example, could be very discriminate. If a state is attacking counterforce targets in an urban area, however, this action would result in a large number of civilian deaths.

Possible environmental damage, international legal prohibitions regarding excessively cruel weapons, and other matters are also relevant to discussions about the morality of nuclear weapons. Yet the international community has never reached a consensus on 'nuclear morality', and broad agreement appears unlikely. Nuclear warfare and deterrence raise difficult moral questions for which there are no easy answers.

that a degree of ambiguity will facilitate deterrence of a range of provocations or provide the deterrer with greater flexibility than would be possible with a highly specific deterrence threat. For example, the United States has frequently warned the People's Republic of China (PRC) that it would oppose the use of military force against Taiwan. Washington typically does not, however, specify whether it would dispatch military forces to aid Taipei, send aid but avoid direct military involvement, or merely lodge a firm protest with the United Nations and other international bodies in response to aggression. This policy is described as one of intentional 'strategic ambiguity'. The absence of a specified threat gives Washington greater latitude in the event of a PRC invasion of Taiwan. It is possible, however, that this flexibility comes at the price of deterrence ineffectiveness: a vague threat may fail to deter where a strong, specific threat would succeed.

As this discussion suggests, *what* is threatened is an important consideration in deterrence. Leaders will place differing values on territory, population, military forces, economic infrastructure, and even regime survival. Totalitarian and authoritarian leaders (such as the USSR's Joseph Stalin and Iraq's Saddam Hussein) often hold an instrumentalist view toward the populations of their countries, considering them to be a resource to be expended in the pursuit of national goals. To dictators with this mentality, threats against population may be less persuasive than they would be to the leaders of liberal democracies, although 'counterforce' threats against a military establishment or political regime may be more convincing to dictators because such threats jeopardize the forces they need to retain political power.

KEY POINTS

- The basic mechanism of deterrence is an expressed threat of costs that outweigh the potential benefits of an opponent's unwanted action, leading that opponent to decide against taking the action.
- Deterrence may be based on punitive or denial threats, or a combination thereof.
- Deterrence threats can be broad or specific.
- Countervalue targets, typically associated with punitive deterrence threats, are assets thought to be highly valued by an opponent but not directly related to its military capabilities, e.g. civilian population.
- Counterforce targets are those necessary to the conduct of military operations. They also may be highly valued by an opponent, e.g. military capabilities.
- Leaders can value types of assets differently and therefore may respond differently to deterrence threats.

Deterrence theory and the Cold War

Leaders throughout human history have practised deterrence, but a large body of academic theory devoted to deterrence only emerged in the second half of the twentieth century. (See Box 7.3.) After Hiroshima and Nagasaki, American thinkers struggled to understand if, and how, the nature of war had changed, and how nuclear weapons might contribute to foreign policy objectives. One of the earliest influential works was *The Absolute Weapon*, edited by Bernard Brodie. In this and later works, Brodie developed the notion that nuclear weapons introduced a revolution in strategy. According to Brodie, deterrence was now the basis of strategy because nuclear weapons made warfare so potentially destructive that it could no longer serve a foreign policy purpose. 'Thus far the chief purpose of our [US] military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose' (Brodie, 1946, p. 69).

American strategists confronted deterrence questions partly because of the sheer lethality of nuclear weapons, but also because they faced a grim problem in the early Cold War. By the late 1940s, it was clear that the Soviet Union presented a threat to the independence of Western Europe. The United States, however, did not maintain conventional forces in Western Europe sufficient to defeat a concerted Soviet attack, nor did Washington want to commit such a standing force to the forward defence of Western Europe. The political and financial costs of attempting to defend Western Europe with only

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BOX 7.3 THE CIVILIAN STRATEGISTS

Only in the United States has strategy developed into a profession practised by a sizeable number of individuals unaffiliated with the government or military, the **civilian strategists**. Many of the most influential works on US Cold War nuclear strategy in particular were written under government contracts by private 'think tanks' such as RAND and the Hudson Institute, but the individuals who performed this work did not hold government posts. Although the US Defense Department performs nuclear target planning and other operational functions, the ideas that have shaped American deterrence strategy have largely come from academia and think tanks.

Such a system would have been unthinkable in the Soviet Union or China during the Cold War, and even in today's Russia and China thinkers unaffiliated to government appear to have little influence on military policy. In other countries, certain individual strategists have been or are prominent (e.g. Lawrence Freedman in Britain) but only the United States has maintained a financial support structure that encourages a substantial number of private individuals to think about strategy.

The early nuclear strategists were an eclectic group. Some, such as Bernard Brodie and Henry Kissinger, were historians. Others, like Thomas Schelling, were economists. Herman Kahn was a physicist, and Albert Wohlstetter a mathematical logician. Today, individuals from a wide range of fields continue to have an influence on strategy, nuclear and otherwise, but it has increasingly become a distinct profession: academic programmes exist that allow students to study strategy at the graduate level and obtain degrees in strategic studies.

conventional weapons were considered prohibitive. It also was unacceptable for the countries of Western Europe to follow East and Central Europe and fall under Soviet domination. The solution to this dilemma that was acceptable to Washington and Western European governments was nuclear deterrence. The West came to rely on nuclear weapons to deter Moscow from military actions that it could not stop with conventional military forces.

This did not mean, however, that American policymakers were quick to consider the actual use of nuclear weapons. Indeed, during the Korean War (1950–3) Washington refrained from using nuclear arms even though communist China entered the war in 1950. Chinese intervention was a surprise to American leaders who thought that American nuclear and conventional military power, combined with public assurances to Beijing that Washington would not cross the North Korea-PRC border, would deter it from entering the war. China's behaviour astonished Washington, and for a time its military entering the war. China's behaviour astonished Washington, and for a time its military inflicted grave damage on United Nations forces (in Korea the United States and its allies formally operated under the UN flag).

Even after the UN coalition regained the initiative, the North Koreans and Chinese would not agree to an armistice acceptable to the Americans. In early 1953, however, the Eisenhower administration (1953–61) indicated obliquely that it *might* use nuclear weapons in Korea and possibly elsewhere (i.e. China) to end the war. Within months, an armistice that effectively ended the Korean conflict was signed. Whether the Eisenhower administration's nuclear threats compelled the Chinese to agree to an armistice is still a controversial question, but to many American observers the lesson seemed clear: nuclear threats can shape the strategic calculus of seemingly intractable opponents. (See Box 7.4.)

BOX 7.4 DIFFERENT TYPES OF DETERRENCE

In his book *On Thermonuclear War*, Herman Kahn argues that there are three categories of nuclear deterrence (Kahn, 1960, pp. 126–62). These categories are:

- Type I: Deterrence of direct attack on a state.
- Type II: Using strategic threats to deter an enemy from engaging in very provocative acts other than direct attack. American attempts to deter a Soviet invasion of Western Europe were an example of this type of deterrence.
- Type III: Graduated deterrence of lesser provocations. This 'refers to acts that are deterred because the potential aggressor is afraid that the defender or others will then take limited actions, military or nonmilitary, that will make the aggression unprofitable'.

This list illustrates an important point: not all deterrence goals are alike nor do they posit the same logical requirements. A country may find Type I deterrence relatively easy but find Type III deterrence difficult or impossible. The United States appears to have successfully practised Type I and Type II deterrence throughout the Cold War. However, Washington has often been unable to dissuade even much less powerful states like China, Vietnam, Libya, Cuba, and Iraq from taking actions contrary to the US national interest. This comes back to the question of credibility: few leaders would doubt that an assault on the United States would be followed by terrible retaliation, but many would question American resolve in situations like the Kosovo crisis of early 2000.

The Eisenhower administration developed a policy known as **massive retaliation**, which was announced by Secretary of State John Foster Dulles in January 1954. Massive retaliation meant that the United States issued a general nuclear threat to retaliate against Soviet (or Chinese) aggression at times and places of its choosing. Most importantly, massive retaliation was an implicit threat to launch large-scale nuclear attacks against the Soviet Union in response to an invasion of Western Europe, but nuclear use was not limited to such an extreme instance. The United States refused to specify precisely what sort of Soviet provocations would result in nuclear retaliation.

Although the United States lost its monopoly on nuclear weapons in 1949 when the Soviet Union tested its own nuclear bomb, during the 1950s (and even the early 1960s) the United States possessed a large advantage in numbers of nuclear weapons and delivery systems. Despite the overall American nuclear advantage, however, Albert Wohlstetter argued in an influential study for the RAND corporation that US Air Force bomber bases were vulnerable to surprise attack (Wohlstetter et al., 1954). Wohlstetter's warnings illustrate an additional aspect of the deterrence problem: leaders have not only to worry that deterrence will fail; they also face the risk that deterrent threats might encourage a worried opponent to attack pre-emptively in the hope of eliminating potential aggression. During the early 1950s, the US Strategic Air Command (SAC) could, in theory, have dropped hundreds of nuclear weapons on the Soviet homeland, and Moscow would only have been able to retaliate against the United States with a small number of nuclear weapons. Wohlstetter was concerned, however, that a surprise Soviet first strike would cripple SAC—at the time, the core of US nuclear forces—and leave Washington in a weak military-political position against an undamaged Soviet Union.

As the Cold War continued and the Soviet nuclear arsenal grew larger, US threats of massive retaliation against the Soviet homeland lost credibility as a response to many possible Soviet provocations. Once the Soviet Union achieved a secure nuclear retaliatory capability, the interests and commitments for which Washington could threaten nuclear war seemed quite limited. This perceived weakening of US nuclear deterrence threats was significant because the United States had accepted **extended deterrence** commitments: by threatening a nuclear response to a Soviet invasion of Europe, the United States was placing its own homeland at risk on behalf of allies. The question that confronted Washington was how believable US extended deterrence threats could be when the United States itself had become vulnerable to Soviet nuclear retaliation. (See Box 7.5.)

In response to the credibility issue, the Kennedy administration (1961–3) adopted a policy of **flexible response**, which placed less emphasis on a massive strategic nuclear threat. The administration began a conventional military build-up, and increased the number and types of **tactical nuclear weapons**. Strategists hoped to raise the 'nuclear threshold', and to increase the variety of nuclear options available to a president. For example, it was possible to use nuclear weapons in Western Europe to blunt a Soviet invasion, but to refrain from striking the Soviet Union itself. Some thinkers, such as Herman Kahn and Henry Kissinger (although the latter later backed away from this position), theorized in the late 1950s and early 1960s that a limited use of nuclear weapons made **intra-war nuclear deterrence** possible. The idea was that if both the United States and the Soviet Union showed restraint in war by not attacking each other's cities, they might significantly limit the damage suffered in a nuclear war.

BOX 7.5 **THE NUCLEAR UMBRELLA**

It is possible for a country to enjoy the protection of a nuclear arsenal while deploying no weapons of its own. In the case of the United States and its allies, the metaphor often used is that of an umbrella extended by the United States over its allies. Although the United States is under no explicit obligation to use nuclear weapons in retaliation for attacks on any of its allies, the possibility that it might do so—particularly in response to WMD attacks—is generally thought to have deterrence value against many potential opponents.

The protection implicitly offered by the United States may play a role in nonproliferation: those countries that believe they receive adequate protection from the US nuclear arsenal are less likely to build arsenals of their own. However, leaders who enjoy the benefits of extended deterrence must always ask themselves what their protector is truly willing to risk on their behalf. During the Cold War the question was often stated in terms like, 'Will the United States accept the destruction of Washington or New York to defend Bonn or Rome?' At least part of the motivation for French and British construction of a nuclear arsenal was the worry that the Soviet leaders would discount US security guarantees to Western Europe, and prove undeterred by US threats.

As the Cold War continued, the American advantage in nuclear forces diminished. By the late 1970s, the Soviet Union achieved superiority over the United States in certain measures of strategic nuclear capability. As the Soviet strategic build-up appeared to render the US nuclear arsenal increasingly vulnerable to attack, and as Washington became increasingly bogged down with the war in Vietnam, the United States sought to conclude ambitious arms control agreements with the Soviet Union. The Anti-Ballistic Missile (ABM) Treaty of 1972 and the Strategic Arms Limitation Talks (SALT) I and II agreements, signed in 1972 and 1979 respectively (although the latter was never ratified by the US Senate), were products of these negotiations.

American leaders opened negotiations on arms limitations in 1969 in the hope that agreement to slow the arms race and limit anti-ballistic missile defences would codify 'strategic stability', a condition in which neither superpower could achieve a useful nuclear advantage over the other. By preventing robust defences, Americans argued, both sides would maintain a survivable nuclear retaliatory capability; neither would acquire strategic forces that would permit it to strike first and thereby remove the other's capability to retaliate. Consequently, even the limited use of nuclear weapons, or large-scale conventional war, would be so dangerous as to be unthinkable except in the most extreme circumstances. Because each side would believe that launching a nuclear or large-scale conventional attack could result in its own 'assured destruction', mutual deterrence would be 'stable'. This condition would eventually be known as one of stable mutual deterrence, or mutually assured destruction (MAD).

The US definition of what threat would constitute 'assured destruction' evolved over time. Secretary of Defense Robert McNamara, for example, stated publicly in the 1960s that the destruction of 20–33 per cent of the USSR's population and 50–75 per cent of its industrial capacity would be unacceptable to Soviet leaders. He believed that a relatively small number of nuclear weapons targeted against cities would be likely to deter Soviet

aggression. A decade later assured destruction was refined further by Secretary of Defense James Schlesinger. He emphasized a threat to Soviet post-war economic recovery as the basis for deterrence, while de-emphasizing threats to population. The **Schlesinger Doctrine** (National Security Decision Memorandum 242—NSDM-242) also encouraged flexibility in escalation control and the ability to retaliate against enemy military forces. In the late 1970s, this deterrence doctrine was developed further. The concept of a **countervailing strategy** under Secretary of Defense Harold Brown provided the basis for Presidential Directive 59 (**PD-59**) in 1980. This strategy emphasized a US ability to target the Soviet political and military leadership for deterrence purposes. PD-59 downplayed the importance of large-scale urban-industrial damage while highlighting threats to the survival of the Soviet political system.

An assumption underlying each of these specific types of deterrence threat is that rational leaders would avoid provocations and brinkmanship that could escalate to a mutually destructive nuclear war.

There were, however, significant problems with this Cold War vision of mutual deterrence stability. A condition of mutual nuclear deterrence based on mutual vulnerability was inconsistent with Washington's extended nuclear deterrence coverage. The United States threatened nuclear escalation in response to a Soviet conventional invasion of North Atlantic Treaty Organization (NATO) countries, and to protect its Asian allies against attack. Mutual deterrence also presumed that neither side would ever be sufficiently motivated, foolish, ignorant, or incoherent to accept the risk of nuclear war; both would be rational when it came to calculating the potential costs and benefits in the conduct of their foreign policies. Some critics of MAD observed that international relations are not always conducted so predictably and reasonably, and that under a condition of mutual vulnerability to 'assured destruction', a single deterrence failure could be catastrophic.

Periodic initiatives sought to respond to these types of problems by shifting the US-Soviet strategic relationship away from mutual assured destruction. In March 1983, for example, President Ronald Reagan attempted to redefine the American approach to deterrence when he proposed the Strategic Defense Initiative (**SDI**), popularly known as 'Star Wars'. SDI was described as a multi-layered defence that would destroy incoming ballistic missiles before they could strike their targets, ultimately rendering nuclear weapons 'impotent and obsolete'.

President Reagan was not the first American or Soviet leader to pursue strategic defences—indeed, the Soviet Union had deployed a missile defence system around Moscow along with an extensive nationwide defence against bombers. The United States briefly deployed missile defences over its intercontinental ballistic missile (**ICBM**) field in Grand Forks, North Dakota. But Reagan's SDI was the most ambitious US active defence programme initiated since the ABM Treaty had severely limited the development, testing, and deployment of strategic missile defences in 1972.

SDI supporters believed that the system could bolster deterrence by discouraging any Soviet belief that the USSR could successfully undertake a nuclear first strike, and that it could save lives if deterrence failed. Missile defence opponents responded that the SDI would undermine strategic stability by reducing Soviet leaders' confidence in their capability to deter Washington. Opponents also contended that SDI would damage the

Soviet-American arms control process, since building the system would require withdrawal from the ABM Treaty, and could encourage the Soviet Union to deploy more offensive warheads to overcome American defences.

Superpower tensions decreased in the latter 1980s and the Soviet empire in Eastern Europe collapsed after the 1989 fall of the Berlin Wall; the USSR itself fell apart in 1991. The question of whether the United States will build a limited missile defence system, however, remains open. Supporters of missile defence now observe that the proliferation of missiles and weapons of mass destruction (WMD) threatens to give 'rogue' regional powers (North Korea or Iraq, for example) WMD-armed missiles that can threaten or strike the United States and its allies. Such vulnerability, they argue, is unacceptable.

KEY POINTS

- During the Cold War, American strategists believed that nuclear deterrence was necessary to prevent the Soviet domination of Western Europe.
- Credibility is key to successful deterrence.
- Strategic stability has been defined as a condition in which both sides possess survivable nuclear capabilities to threaten the other with a retaliatory 'assured destruction' strike. This condition supposedly results in stable mutual deterrence.
- Missile defence initiatives have been pursued in the United States as one potential response to some of the problems of mutual deterrence.

Deterrence can fail

Despite the end of the Cold War and the attendant dramatic changes in the international environment, US government officials throughout the 1990s continued to exhibit high confidence in the Cold War deterrence framework. Official and expert discussion of nuclear deterrence policies in the United States continued the past practice of assuming that challengers would be rational and reasonable, and thus predictably deterrable in familiar ways. For example, a report in October 1998 by the Department of Defense's Defense Science Board entitled *Nuclear Deterrence* attempted to 'define concepts of deterrence relevant to the changing world' (Defense Science Board, 1998). It described the deterrence requirement for 'the assurance that no rational adversary could believe they could gain by employing nuclear weapons (or other weapons of mass destruction) against the US or an ally under the US nuclear umbrella'. The report focused almost entirely on US nuclear capabilities to provide that 'assurance' of security from attack with WMD.

Americans also expressed confidence in the Cold War deterrence framework with regard to regional powers such as North Korea, Iraq, and Iran. The general rationale for doing so rested on the assertion that because deterrence 'worked' against the massive Soviet nuclear threat, it should work against the more limited threats from regional challengers. Deterring North Korea, Iran, or another rogue state essentially was viewed as a

limited version case of the nuclear deterrence policies used against Moscow during the Cold War.

This continuing confidence in deterrence remains based on the assumption that challengers will make decisions reasonably and predictably, allowing deterrence to work reliably. There are reasons to believe, however, that this confidence in deterrence is unwarranted, especially in the post-Cold War period. (See Box 7.6.)

Deterrence is a psychological process. It is not the inevitable outcome of any particular strategic balance. Even scrupulous efforts to establish a 'stable' military balance will be irrelevant to the prevention of attack under some circumstances. Confident predictions about deterrence 'working' should be viewed with scepticism because there is a human element to deterrence: a leader must 'agree' to be deterred. At its heart, deterrence involves all of the imponderable elements of political will and decision making.

Even the most brilliantly conceived and presented deterrence threats may be discounted or misunderstood. Desperate or confident leaders intent on their chosen course can be inattentive or impervious to the commitments and threats of their foes, regardless of how severe and clearly expressed. Highly determined leaders, or those under great stress, can be unwilling to take inconvenient facts into account. They can cling to unrealistic and self-serving expectations about the decisions of others.

Some leaders simply are far more risk tolerant than others. They are willing to embrace brinkmanship. Adolf Hitler, for example, scorned cautious calculation in foreign policy, and pursued high-risk initiatives based on his expressed confidence in Providence and the 'voices' that guided him.

Even the rationality of an opponent's decision making does not guarantee that the opponent will be receptive to deterrence threats, including very severe threats. **Rationality** is a mode of decision making that logically links desired goals with decisions about

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BOX 7.6 **SECOND-TIER NUCLEAR POWERS**

Most discussions of nuclear deterrence focus on the Cold War. This is understandable: the superpowers built huge arsenals, and practised very high-stakes deterrence for decades. The contest between these titans was observed with great interest by most other countries, not least because of the environmental devastation and other potential consequences a large-scale nuclear war could have had on the rest of the world. A number of countries, however, have developed nuclear weapons. Five countries are acknowledged as nuclear powers in the **Non-Proliferation Treaty (NPT)**, which was completed in 1968: the United States, the Soviet Union, Great Britain, France, and China. In addition, there are two other more recent entrants into the 'nuclear club': India and Pakistan have nuclear arsenals although they are not acknowledged as nuclear powers by the NPT. In addition, Israel is widely assumed to have nuclear weapons, and North Korea is suspected by many to have a very small arsenal.

These powers had varying motivations for obtaining nuclear weapons, but the desire for a powerful deterrent probably played a role in their calculations. In some cases, such as Britain and France, deterrence considerations may have been secondary to general international prestige, but all countries appear to have believed that nuclear weapons could play a role in deterring nuclear or conventional attacks on their territory.

how to realize those goals. For the rational decision maker, a particular course of action is chosen because, based on available information, that course is calculated to be most suitable for achieving the preferred goal. A rational leader also is expected to prioritize goals and recognize that the pursuit of one goal may come only at the expense of another (you cannot have your cake and eat it too).

Rationality does not, however, imply that the decision-maker's prioritization of goals and values will be shared by or considered sensible to outside observers. Nor does rationality imply that any particular moral standard guides the selection of goals and values. In short, rational decision making can underlie behaviour judged to be unreasonable, shocking, and even criminal by an observer because that behaviour is so far removed from any shared norms and standards. Rational leaders with extreme ideological commitments, for instance, may have goals that appear irrational to outside observers.

The expressed judgement that another's decision making and behaviour is **reasonable** typically implies more than rationality. Pronouncing another's decision making or behaviour to be reasonable suggests that the observer understands that decision making and judges it to be sensible based on some shared set of values and standards. To assume that rationality will produce reasonable behaviour—that is behaviour predictably driven by familiar, understandable norms and goals—is to risk lethal surprises.

Assuming challengers to be pragmatic and rational, and therefore reasonable, facilitates prediction of their behaviour simply by reference to what an observer would consider reasonable under the circumstances; the difficult work of attempting to understand the opponent's particular character and motivations can be avoided. Unfortunately, the convenient assumption that any rational leader also will be reasonable sets up the observer to miss an opponent's conscious and purposeful moves that are far outside expected norms.

In most analyses of deterrence stability, the factors that tend to render policies of deterrence unreliable are not taken into serious consideration. Leaders are assumed to be ready, willing, and able to engage in well-informed, dispassionate, cost–benefit calculations, and to make their policy decisions accordingly. They are assumed to be at least familiar with their opponent's threats, values, intentions, and military capabilities, able to absorb information, and able to implement value-maximizing and cost-minimizing decisions under great stress.

An entire set of necessary political and psychological conditions, however, must dominate the decision-making process on all sides if deterrence is to function as envisaged. These conditions include:

- Leaders who value avoidance of the deterrence threat more highly than whatever might be the gains at stake in a contest of wills.
- Leaders capable of relatively unbiased assessments of information, and of using that information to link decisions to preferred outcomes.
- Leaders who are attentive to and comprehend the intentions, interests, commitments, and values of the opponent(s).
- Leaders who focus their cost–benefit calculations on external factors (i.e. deterrence threats) as the final determinant of their decision making.

- Leaders who understand the general military capabilities and consequences involved in their decisions.
- Political systems that permit individually rational decision makers to establish similarly rational state policies that do control state behaviour.

If one or several of these conditions is absent, there is no basis for assuming that the necessary rational, cost–benefit calculations would influence policy, allowing deterrence threats to have their intended deterrent effect.

There are many examples of how the convenient assumption that a rational opponent would be reasonable—as defined by the observer—contributed to strategic surprise. From Japan's decision to attack Imperial Russia in 1904, to Washington's underestimation of Serbia's tenacity under NATO's 1999 bombing campaign, the mistaken expectation that foreign leaders would be reasonable, according to familiar norms, appears to have played a significant role in lethal surprises and costly mistakes. When deterrence is defined only in terms of maintaining a particular level of military threat relative to an opponent because the opponent is assumed to respond reasonably to that threat, then it is not difficult to conclude that stability is relatively easy to calculate and predict. If the necessary cognitive and political conditions for deterrence success are taken into serious consideration, however, it is then easy to understand why deterrence is a much more complicated process.

KEY POINTS

- Successful deterrence requires that the one being deterred believes that the costs of a potential action may outweigh the plausible gains.
- Rationality in decision making requires the linkage of desired goals with decisions about how to realize those goals. Rational behaviour nevertheless may be judged unreasonable by an observer.
- The assumption that opponents will be rational, reasonable, and thus predictably deterred, can be highly misleading because there can be an enormous variation in how different national leaders define reasonable behaviour.

The problem with Cold War deterrence

During the Cold War, confident assertions about the functioning of nuclear deterrence, and how to establish and preserve stability, were the norm. Such conclusions typically were based on the implicit assumption of Soviet reasonableness, occasionally backed with quantitative modelling of a nuclear exchange. If the modelling demonstrated that both sides possessed a manifest and secure capability for devastating nuclear retaliation, mutual deterrence was judged to be stable. The underlying assumption was that neither side, being rational and reasonable, would intentionally pursue an action that could lead

to mutual destruction. Confidence in deterrence became a tautology: any rational leader would be deterred by the fear of nuclear destruction; national leaders are rational (how else could they climb to positions of responsibility?); thus, nuclear weapons would deter. In short, rational leaders would be deterred via nuclear threats because, by definition, they would be irrational if they were not so deterred.

This tautology was reflected in US nuclear deterrence policy during the Cold War. Stability came to be defined in terms of mutual vulnerability. It was assumed that any Soviet leader—or any other sane policymaker—would recognize the logic underlying US deterrence policy. This assumption overpowered suggestions that the unique character-istics of Soviet leadership and ideology could decisively shape the Soviet approach to nuclear weapons and deterrence, possibly moving Soviet officials quite rationally in sig-nificantly different directions from their US counterparts.

This approach to deterrence centred on US and Soviet strategic nuclear forces: inter-continental ballistic missiles (ICBMs), long-range bombers, submarine-launched ballistic missiles (SLBMs), and ballistic missile defence. Indeed, whether deterrence was judged to be stable or not was thought to depend almost exclusively on the number and character of US and Soviet strategic forces.

The strength of this deterrence framework was its comfort and convenience. By simply assuming a rational, pragmatic, and reasonable opponent, it was possible to attribute predictability to deterrence policies. Sticky questions about how the opponent's char-acter and political beliefs might shape the practice of deterrence could be avoided. Instead, discussions of deterrence could focus on items that were relatively easy to count and predict—the number and types of nuclear warheads and their destructive potential. The downside of this methodology was that ignoring a leader's beliefs and personality could be dangerously misleading. The Cold War deterrence framework encouraged 'mir-ror imaging': the assumption that foreign governments will act and react to situations with behaviour similar to that of one's own government.

The weakness of the assumption that Soviet leaders would be rational, reasonable (as defined in Washington), and thus predictable in considerations of nuclear deterrence is demonstrated by the now-apparent mismatch between Western deterrence theory and Soviet war planning for Western Europe. Certainly by the time the Kennedy administra-tion took office, Western leaders had come to regard a large-scale nuclear war as unthink-able. US strategists and policymakers sought to keep a lid on the potential for nuclear escalation via sophisticated intra-war deterrence concepts of rational wartime bargaining and limited nuclear war. Soviet war plans for Europe, however, called for very heavy and early nuclear and chemical strikes throughout Western Europe to disrupt any North Atlantic Treaty Alliance (NATO) response to a Warsaw Pact offensive.

The notion that a unique political world view (Marxist-Leninist ideology and the Soviet experience of the Second World War) could shape Soviet ideas about nuclear weapons in dramatically different ways from those prevailing in Washington was rejected by those who assumed a predictable opponent. Only recently, courtesy of greater access to the Kremlin's archives, has it become clear that Soviet leaders never accepted the West's definition of deterrence stability. Soviet expectations of US behaviour, largely derived from the dogma of Marxist-Leninist ideology, were a significant factor in Soviet nuclear war planning. Indeed, studies of the Soviet archives demonstrate that Soviet decision

making appears to have been shaped more by ideological vision than by rational, prag-matic, *realpolitik* (Gould-Davies, 1999; Wohlforth, 1999; Pry, 1999). William Odom, one of the West's foremost experts on the Soviet Union, concluded from extensive post-Cold War interviews in Moscow that 'the notion of winning a nuclear war was both ideologic-ally and psychologically rooted in the views of the [Soviet] "political-military leader-ship" '. And '[Western] deterrence theory and concepts of stability were never part of Soviet thinking in these circles' (Odom, 1998, pp. 71 and 436).

KEY POINTS

- During the Cold War, Western policymakers became very confident of deterrence reliability and their capability to create and preserve 'stability'.
- Recent scholarship suggests that Soviet leaders did not accept Western deterrence logic and assumptions about the uses of nuclear weapons.

Individuality and decision making

How is it possible now to question much of what has for years been accepted wisdom regarding nuclear deterrence? The answer is straightforward: historical studies consist-ently demonstrate that the deterrence theory assumption, of well-informed leaders operating rationally, reasonably, and thus predictably, frequently does not correspond with actual crisis decision making. Therefore deterrence fails.

Studies of deterrence based on historical evidence and incorporating concepts from cognitive psychology have emerged since the mid-1980s. These demonstrate that a wide variety of factors shape leaders' decision making, factors that cannot be derived from a methodology that simply assumes states and leaders to be similarly motivated, rational, and reasonable.

Personal beliefs, goals, and values

Personal beliefs and characteristics that have shaped state policies in the past include the spiritual beliefs of leaders, their perceptions of themselves and their opponents, concepts of personal or national honour, intellectual rigidity or adaptability, respect for others or the lack thereof, deceitfulness or openness, risk acceptance or tolerance, aggressiveness or caution, and maliciousness or sympathy.

In a series of seven case studies examining the outbreak of war, for example, John Stoessinger concluded that in each case, a 'fatal flaw or ego weakness' in a leader's person-ality was of decisive importance: 'With regard to the problem of the outbreak of war . . . I am less impressed by the role of abstract forces, such as nationalism, militarism, or alliance systems, which traditionally have been regarded as the causes of war. Nor does a single one of the . . . cases indicate that economic factors played a vital part in

precipitating war. The personalities of leaders, on the other hand, have often been decisive' (Stoessinger, 1993: p. 213).

The ideological beliefs and perceptions of leaders also have been significant. Perceptions of threat (whether accurate or grossly distorted), theories about the nature of international relations, the prerogatives and obligations of the leadership, the state, and the citizen, notions of national honour and sovereignty, and the leadership's view of its own place in history shape national policy. Leaders' views on such matters have guided policies in surprising and sometimes very dangerous ways.

For example, General Wafic al Samarrai, the head of Iraq's military intelligence during the Gulf war and a lifelong acquaintance of Saddam Hussein, described war as part of Hussein's character: 'His theory is war. He cannot survive without war . . . [Hussein] said war is glory. It is a side of his character' (Trevan, 1999, p. 300). Al Samarrai emphasized that Saddam Hussein's decision making reflected personal and political values far from Western norms and expectations. This glorification of war may help to explain his surprising readiness to invade Kuwait and to defy a US-led coalition so soon after Iraq's years of costly warfare with Iran. In Saddam Hussein's case, the deterrent threat of war with the far more powerful United States did not lead him to reassess his personal ambitions and prejudices.

Following the initial use of an atomic weapon against his country, the Japanese war minister, General Korechiki Anami, attempted to persuade the Japanese Supreme Council to continue the war. He 'called for one last great battle on Japanese soil—as demanded by the national honor, as demanded by the honor of the living and the dead'. Anami argued, 'Would it not be wondrous for this whole nation [Japan] to be destroyed like a beautiful flower' (McCullough, 1992, p. 459). Anami and the officers who supported him came very close to winning the internal Japanese debate about how to confront impending defeat.

Overriding imperatives and conscious, high-risk brinkmanship

History demonstrates that two imperatives can drive leaders to surprising and extraordinarily risky brinkmanship: grave foreign or domestic conditions that leaders believe necessitate aggression. In such circumstances, leaders have pursued highly risky initiatives despite their foe's seemingly credible and capable deterrence commitments. Leaders can be driven by domestic or internal threats to choose a high-risk course involving potentially great cost because the alternative (inaction) appears to lead to intolerable consequences.

The expectation of intolerable loss from inaction can lead to conscious, rational, high-risk decision making, including decisions to risk survival. In the context of such need-driven decision making, high-risk behaviour can be accepted and rationalized because of the expected unacceptable cost of not acting. Such imperatives can lead to high-risk **brinkmanship** (see Box 7.7).

Deterrence comes unravelled when it confronts a desperate willingness to run extraordinary risks to forestall an intolerable future.

Extreme determination and willingness to sacrifice, not only to avoid loss but to secure a goal, can be consistent with the ideological zealot, the willing martyr. There are many

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BOX 7.7 **PERSONAL IMPERATIVES AND BRINKMANSHIP**

An example from classical history nicely illustrates the concept of brinkmanship driven by personal imperatives, in this case religious ones. The great historian of antiquity, Josephus, describes the sequence of events when the early-first-century Roman procurator of Judea, Pontius Pilate, sought to bring Caesar's effigy into Jerusalem (Josephus, 1987, pp. 479–80). Previous procurators of Judea had avoided the custom of establishing such Roman images in Jerusalem. It was highly offensive to the Jews, given the Mosaic law against graven images.

Josephus tells us that Pilate brought the images of Caesar into Jerusalem under cover of darkness. The Jewish 'multitudes' promptly went to Pilate to protest against the images. In reply, Pilate 'gave a signal to the soldiers to encompass them round, and threatened that their punishment should be no less than immediate death, unless they would leave off disturbing him'. Pilate's threat obviously was severe, well understood, highly credible, and wholly ineffective. The Jewish multitudes 'Threw themselves upon the ground, and laid their necks bare, and said they would take their death very willingly, rather than the wisdom of their laws should be transgressed'. According to Josephus, Pilate 'was deeply affected with their firm resolution', and withdrew Caesar's effigy from Jerusalem. In short, Pilate backed down, but the protesters of course had no way of knowing in advance that he would—they practised brinkmanship because they were driven by religious imperatives that they considered more important than their own lives.

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historical examples of people motivated by visions of revolution. For example, during the 1962 Cuban missile crisis, Cuban leaders Fidel Castro and Che Guevara apparently urged the Soviet Union to launch a pre-emptive nuclear strike against the United States, confident that Cuba might 'perish' as a result, but that socialism would triumph. During the crisis, Castro urged the Soviet leader Nikita Khrushchev to launch such a strike: 'If they [the Americans] actually carry out the brutal act of invading Cuba . . . that would be the moment to eliminate such danger forever through an act of legitimate defense, however harsh and terrible the solution would be' (Fursenko and Naftali, 1997, pp. 272–3).

The assumption that rationality yields reasonableness and predictability may be useful in the context of a challenger of dispassionate and pragmatic character. Such an assumption, however, is likely to lead to false conclusions about the reliability of deterrence in the face of dedicated ideological zealots such as Castro and Guevara. In effect, the Cold War deterrence framework discounts or ignores the potential for ideological fervour to dramatically shape 'rational' cost–benefit calculations.

Political imperatives and cognitive distortion

When leaders under great stress believe they must act to avoid an intolerable future, a variety of well-known cognitive processes can limit their capacity to engage in the type of well-informed, rational decision making necessary for deterrence to function predictably. Leaders may deny, ignore, reject, or distort those elements of reality that are incompatible with the course they have chosen, or the course they believe has been forced upon them.

In crisis situations, decisions tend to be based on simplified cognitive structures, which

tend to reduce the range of options perceived by the leaders involved. There is no doubt that objective rationality in decision making can be impaired by various psychological defence mechanisms. One example of the type of psychological factors that appears to have led rational leaders to such miscalculation is the cognitive mechanism known as denial. Denial can affect a person who is compelled to choose among a number of difficult options. A choice is made, and the decision maker subsequently simply denies or ignores information suggesting negative consequences associated with that choice.

Denial is a basic human psychological reaction to danger. This psychological defence mechanism has been significant in miscalculations that resulted in the outbreak of crises and wars during both the nuclear and prenuclear ages (Jervis, Lebow, and Stein, 1985, pp. 103, 119, 182–3). One example of denial is when leaders refuse to acknowledge the strength of a foreign threat and fail to take measures to mitigate it.

In 1982, Argentina miscalculated the credibility of Britain's commitment to defend the Falkland Islands, leading Argentina toward an ill-fated path of aggression that surprised the British. Decisions leading to the 1982 Falklands war appear to have been affected by a series of self-serving miscalculations. There is little doubt that the desperate political weakness of the junta ruling Argentina led it to view the dispute with Britain over the Falklands as a way to demonstrate its competence by exploiting nationalistic sentiment on the issue and thereby elevating its domestic political authority. The likelihood of invasion was heightened by the junta's self-serving and mistaken view that the British commitment to the Falklands was very soft. The junta's strongly felt need to act combined disastrously with their self-serving underestimation of the risk involved in military action.

Cognitive distortion: Drug usage

The use of mind-altering drugs may impede the decision making necessary for deterrence to operate predictably. This may, at first, seem not to be a serious concern with regard to national officials. Yet leaders under the influence of a variety of drugs have governed great powers with dictatorial authority. Adolf Hitler, for example, took large, daily dosages of both stimulants and sedatives, as prescribed by his personal physician, Theodor Morell. And in 1944 Hitler began receiving frequent cocaine treatments, using an inhalator twice a day. The combination of these drugs and other unusual medical treatments may have contributed to Hitler's temper tantrums, hallucinations, and paranoia (Waite, 1977, pp. 351–6).

China's Chairman Mao Zedong suffered from severe insomnia. As a result, according to his personal physician, Dr Li Zhisui, Mao became addicted to barbiturates. At one point he was taking ten times the normal dosage of sleeping pills, enough to kill some people. According to Li, Mao initially used chloral hydrate to relieve his insomnia, but became addicted, often mixing it with sodium seconal. Ultimately, Mao used drugs 'when receiving guests and attending meetings. He also took them for his dance parties' (Li, 1994, pp. 109, 112–13, 440). How Mao's drug addiction shaped his decision making is unclear, but that it could have done so is certain.

Washington, of course, is not immune to the possibility of drug usage affecting policy. President John Kennedy, for example, reportedly used steroids (cortisone and

deoxycorticosterone acetate) to treat his Addison's disease, and apparently took them in excess (Park, 1993, pp. 168–71). In 1961 it appears that Kennedy also began receiving by injection large doses of amphetamines and steroids from a now-discredited physician (Park, 1993, pp. 170–81). The potential side-effects of steroids taken in excess are similar to those of amphetamines taken in excess: 'delusions, agitation, anxiety, insomnia, and irritability, not to mention their addictive effects when taken in combination'.

KEY POINTS

- Decision making can be affected in unpredictable ways by personal beliefs, goals, and values; overriding imperatives that lead to conscious, high-risk brinkmanship; and cognitive distortion resulting from psychologically stressful circumstances or the use of drugs.

- A leader may be rational, but overriding national or personal imperatives may lead him or her to act in a high-risk manner that is defined as 'irrational' by observers.

Cold War deterrence assumptions in the post-Cold War world

After the end of the Cold War Western officials continued to exhibit near-absolute confidence in deterrence. Deterrence continued to be viewed almost exclusively as a function of lethal threats and a rational, achievable goal. This continuing confidence in deterrence came into play during negotiations with regional powers such as North Korea, Iraq, and Iran. The general rationale for raising the deterrent threat was the assertion that because deterrence 'worked' against the Soviet Union, it should easily work against the more limited threats from regional challengers. Deterring North Korea or Iran was regarded as similar to deterring Moscow during the Cold War. The fundamental assumption behind this continuing confidence in deterrence is that challengers will view the world and make decisions predictably, and thus deterrence will work reliably. Today's international environment, however, holds out a wide variety of contexts and opposing leaderships against which deterrence policies may be called on to operate. In this context, the effective functioning of deterrence cannot be assumed.

For the United States and its allies, nuclear deterrence may soon prove difficult or impossible to maintain. In the present strategic environment, it is likely that a regional aggressor will threaten Washington with WMD escalation in the event the United States chooses to intervene in the region. In such a contest of wills, the United States may be at a great disadvantage in terms of the costs, benefits, and stakes involved.

American leaders are unlikely to be cost–risk tolerant toward prospective losses. Furthermore, the United States is unlikely to have high stakes in the outcome of a regional conflict. In such situations, even overwhelming US military power may be inadequate to

provide the desired deterrent effect. Regardless of US conventional and nuclear superiority, for example, if a regional power can threaten WMD use against the United States, US allies, or American and allied military forces, it may be capable of deterring Washington's action: US interests may not justify the risk. In an ironic reversal, the West now enjoys considerable conventional superiority over all its plausible opponents, but may find itself deterred from military action by regional threats of WMD escalation.

This is not to suggest that assessing deterrence will be more difficult for the West in the post-Cold War period because so-called rogue states will be 'irrational'. The leaders of Iran or North Korea, for example, may be no more or less rational than were Soviet leaders. There is, however, ample evidence to demonstrate that Western officials are less familiar with the forces and perceptions shaping decision making in Baghdad or Tehran than they were with the ideas that shaped Soviet policies. This lack of familiarity will limit their capacity to anticipate a rogue challenger's cost–benefit calculus, and thereby to establish reliable deterrence policies.

KEY POINTS

- Most Western officials continued throughout the 1990s to have great confidence in deterrence. Deterrence assumptions, however, may be misleading in the post-Cold War environment.
- No deterrence threat is so severe that it can assure deterrence success: even nuclear deterrence may fail or be irrelevant in a crisis.

QUESTIONS

1. Are there any circumstances in which a great power should be willing to undergo a substantial risk of nuclear attack in pursuit of its foreign policy goals? If so, what are they?

2. Was the US threat of nuclear retaliation the best method of deterring a Soviet invasion of Western Europe and was the threat credible to the Soviet Union?

3. Is it ever morally permissible to use WMD against cities? Is there a moral difference between attacks on population per se and attack on military/governmental targets that happen to be located in cities?

4. Given the problems with the Cold War deterrence framework, why was it so widely accepted by strategic thinkers in the West?

5. Is the danger of nuclear war greater or smaller today than it was during the Cold War?

6. What strategic benefits might a national missile defence offer to a country?

7. Has deterrence theory reached a 'dead end' (i.e. is all that can be known about how deterrence succeeds or fails *in general* known)?

8. What are the implications for deterrence theory, given the changing nature of contemporary war, to inter-ethnic, small-scale, guerrilla wars that take place within, rather than between, states?

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WEB SITES OF INTEREST

www.atomicarchive.com/main.shtml This site maintained by AJ Software and Multimedia Atomic Archive contains a variety of general information about nuclear weapons-related matters.

www.fas.org/nuke/guide/index.html This guide, maintained by the anti-nuclear Federation of American Scientists, contains a great deal of technical information about the nuclear arsenals of various states. However, given that most states release few or no details about their nuclear arsenals, some of the data on the site represent a 'best guess' and may not be fully accurate.

www.nipp.org The National Institute for Public Policy posts several articles that favour American deployment of missile defences, as well as other relevant materials.

www.nuclearfiles.org/ This site, The Nuclear Files, a project of the anti-nuclear Nuclear Age Peace Foundation, contains varied material about nuclear weapons and deterrence.

www.cmc.sandia.gov/ This site is maintained by the Sandia Cooperative Monitoring Center. The Sandia National Laboratories is a US government-run institution that undertakes various projects related to nuclear arms. This site describes Sandia's involvement with nonproliferation and arms control.
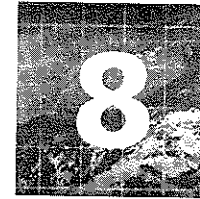
8 Arms Control and Disarmament

John Baylis

READER'S GUIDE

This chapter describes the debate about the role of arms control and disarmament in promoting greater international security. An assessment of the historical record of arms control and disarmament during the twentieth century is provided in order to examine these two different approaches to peace and security. Two opposing questions are considered in detail. First, has arms control been of crucial importance in achieving international security? Second, has arms control been largely irrelevant? To answer these questions, the chapter focuses on the contribution arms control makes to international stability, norms of behaviour, and peaceful change. The conclusion suggests that while history is far from promising and arms control should not be regarded as a panacea, it can make an important contribution to international security and should not be dismissed simply as a 'flawed concept'.

Introduction

The record of arms control and disarmament in the post-Cold War era is confusing. In the early 1990s, considerable euphoria existed over the opportunities that promised a major surge forward in arms limitation agreements. The START I and START II treaties, the Conventional Forces in Europe (CFE) agreement, and significant unilateral reductions in short-range nuclear forces seemed to launch a new 'golden age' in arms control after the disappointments and frustrations of the Cold War and pre-Cold War years. The indefinite

extension of the Non-Proliferation Treaty in 1995, the signing of the Comprehensive Test Ban Treaty in 1996 and discussions about a START III agreement appeared to confirm this judgement. At the same time, however, critics of these agreements have questioned their value in an era of friendly relations between the great powers and their sustainability should the climate of international relations change. Scepticism that arms control could be any more successful in the future than it had been in the past grew in the light of difficulties over renegotiating CFE limits to meet changing geo-strategic circumstances, unhappiness in Russia and China over US proposals for a national missile defence (NMD) system involving efforts to modify the 1972 ABM Treaty, and a refusal by the US Senate to ratify the CTB agreement in 1999.

The focus of this chapter is on the debate about the ability of arms control and disarmament policies to reduce the risks of war and to contribute to peaceful international relations. It first defines what is meant by arms control and disarmament. This is followed by an examination of the historical record to test the claim by critics that there is no evidence that arms limitation agreements have ever had a significant impact on peace or war. The third section explores the arguments about the utility of arms control in the post-Cold War era. The conclusion sums up the debate and offers some observations about the future of arms control.

Definitions and approaches

While the terms 'arms control' and 'disarmament' are sometimes used interchangeably, they reflect different views about international politics. Hedley Bull, in his book *Control of the Arms Race* (1961), defines disarmament as 'the reduction or abolition of armaments. It may be unilateral or multilateral; general or local; comprehensive or partial; controlled or uncontrolled'. Arms control, according to Bull, involves 'restraint internationally exercised upon armaments policy, whether in respect of the level of armaments, their character, deployment or use'.

John Spanier and Joseph Nogee, in their study of *The Politics of Disarmament* (1962), provide a more specific definition of the differences between arms control and disarmament. In their formulation, 'while disarmament refers to the complete abolition or partial reduction of the human and material resources of war, arms control deals with the restraints to be imposed upon the use of nuclear weapons'. (Spanier and Nogee, 1962, p. 15).

Several important distinctions arise from these definitions. First, there is the distinction between **reduction** and **restraint**. While arms control can involve 'reductions' in armaments (and therefore can overlap with disarmament), it also can involve increases in military capability if this secures the objective of achieving 'restraint' between adversaries. The 1972 SALT I Treaty is an example of an agreement that sanctioned increases in armaments while limiting the forces that could be developed in the future. Second, the terms reflect different views about the causes of war. On the one hand, the theory of disarmament is based on the conviction that armaments are a cause of war. The theory of

arms control, on the other hand, accepts that armaments can play a part in heightening tension between states, but it identifies political tensions between adversaries as the major cause of conflict. For arms controllers, armaments can be a source of stability and security if they are managed properly. A third and related distinction is that disarmament's final objective is abolishing weapons completely, thereby transforming international relations. In contrast, arms controllers do not believe that it is possible either to eliminate weapons or to change the world. Arms control advocates believe that all that can be hoped for is to reduce the risk of war, to limit the consequences if it occurs, and to contribute to peaceful change. The aims are strictly limited. According to supporters of arms control, like Schelling and Halperin (1961), 'adjustments in military postures and doctrines that induce reciprocal adjustments by a potential opponent can be of mutual benefit if they reduce the danger of a war that neither side wants, or contain its violence, or otherwise serve the security of the nation'.

The literature on disarmament offers different approaches to reducing and eventually eliminating weapons. For some writers, the way forward is to overcome tensions between states through a process of liberal education. According to this view, education can create greater understanding and help overcome the kind of belligerent attitudes that prompt leaders to acquire weapons. Another approach focuses on the political divisions between states. This approach suggests that seeking and achieving a political settlement between hostile states will erode the need for armaments. A third approach emphasizes the importance of disarmament itself in helping to achieve more peaceful relations between adversaries. This can be done incrementally, reducing armaments and building up trust until eventually all weapons are abolished. Charles Osgood coined the term **'GRIT'** (Graduated Reciprocation in Tension-reduction) in the early 1960s to reflect this approach (Osgood, 1962). Others advocate the negotiation of a single general and comprehensive disarmament (GCD) package to bring about peaceful relations by abolishing all armaments in a single stroke.

With arms control emphasizing 'restraint' rather than 'abolition', theorists tend to draw a distinction between **structural** and **operational** arms control. Structural arms control is often regarded as the more important because it addresses the quantity and quality of armaments themselves. The aim is to try to achieve 'parity' and/or 'stability' in the balance of armaments between hostile states (e.g. the SALT and START agreements). In contrast, operational arms control aims to contain the *behaviour* of armed forces by preventing military deployments and actions that may be regarded as provocative, thus increasing the chances of war. Such operational arms control measures are designed to help ameliorate crises when they occur (the 1963 Hot Line agreement) and to build confidence between potential adversaries (the 1975 Helsinki Act).

Despite the important distinctions between arms control and disarmament highlighted by Bull, and Spanier and Nogee, there are some problems in their definitions. For Bull, arms control involves 'restraint internationally exercised'. What is not clear from this is whether Bull is saying that arms control can only exist *between* states or whether it can involve restraint *within* states. The 1995 Dayton Accords, which attempted to regulate armaments within Bosnia, was international in the sense that a number of states were involved in the agreement. Similarly, the Good Friday Agreement in Northern Ireland attempted to secure the decommissioning of paramilitary arms within Ulster. This

suggests that arms control (and disarmament) can be intra-state as well as interstate. (See Chapter 9.)

The definition by Spanier and Nogee is more problematical because it focuses on arms control in the nuclear era. It implies that arms control did not happen before the nuclear age and that nuclear arms control is all that matters when it comes to achieving international peace and security. In reality, arms control has a long history and even in the nuclear age, non-nuclear arms control has been a major and recurring feature of international negotiations and diplomacy.

KEY POINTS

- Disarmament seeks the abolition of weapons, whereas arms control seeks to restrain weapons.

- Disarmament identifies weapons as a cause of war, while arms control characterizes weapons as a source both of stability and instability.

- Disarmers believe that weapons can be abolished and international relations transformed. Arms controllers do not believe that weapons can be abolished or that international relations can be changed significantly.

- Various approaches to disarmament emphasize liberal education, political settlements, gradual reductions in numbers of weapons, or the need for immediate abolition.

- Arms control can take two forms: 'structural' and 'operational'.

The historical record

History can help explain the relationship between disarmament and arms control measures. It also is a means to gauge their success. Four main phases characterize the history of arms control: from 1900 to the Second World War; from 1945 to the early 1960s; from the early 1960s to the mid-1980s; from the mid-1980s to the present.

Phase One: 1900–1939

Although there are some early examples of disarmament (for example, the 1817 demilitarization of the US-Canadian border), it was not until the late nineteenth and early twentieth centuries that significant diplomatic progress occurred. Tsar Nicholas II of Russia was responsible for calling the Hague Conferences of 1899 and 1907 to try to limit the level of armaments among the great powers. Although a permanent Court of Arbitration was set up as a result of the conferences, very little was achieved. In practice, many European leaders were concerned about Russian motives. It was widely believed that the Tsar wished to reduce the production of armaments largely to relieve the strain on the Russian economy. Reflecting the lack of trust that was to become a perennial feature of later negotiations, the delegates at the Conferences also were suspicious of the unilateral advantages that they believed others were seeking at their expense. (Box 8.1 summarizes the earlier history of arms control.)

It took the horrors of the First World War to renew disarmament efforts. The Treaty of

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BOX 8.1 **ARMS CONTROL IN HISTORY**

In the ancient world, with endemic warfare and simple weapons, arms control had two purposes. First, it was used at the end of conflicts to create new strategic relationships as, for example, in the Rome-Carthage agreement of 201 BC. Under this the Romans imposed the *foedus inaequum*, or unequal treaty, on Carthage through which Carthage had its navy eliminated, had to destroy its war elephants, [had to] pay reparations, and was forbidden to undertake any military action in regions adjacent to its home cities. Second, arms control was used by political leaders to create or perpetuate stability between their political entities. One such example was the agreement between the Egyptian Rameses II and the Hittite Hattusilis III following the battle of Qadesh around 1280 BC, to separate their empires by establishing a neutral zone.

During the Middle Ages, arms control was used to only one purpose: to create an orderly state of affairs in the Christian world as in, for example, the Truce of God proclaimed in the Diocese of Elne in 1027. The Truce included a requirement not to fight on the Sabbath, and the penalty for breaking these restrictions was to be declared anathema and [to] face excommunication.

The period between the Peace of Westphalia and the Treaty of Versailles saw the emergence of nation states, the development of the technology of warfare, and the further evolution of attempts to create rules for the use of violence. Arms control was utilized in three ways. First, it was used at the end of conflicts to create new strategic relationships, as in the Treaty of Utrecht. In order to maintain a balance, under article IX the French agreed to British demands 'that all the fortifications of the City of Dunkirk be razed, that the Harbour be filled up, and that the Sluices or Moles which serve to cleanse the Harbour be Levelled, and that at the said King's own Expense, within the space of Five Months after the Conditions of Peace are Concluded and Signed'. Second, arms control was used to create or perpetuate stability between states, as in the Rush–Bagot Agreement of 1817, by which the United States and the United Kingdom (subsequently Canada) agreed to the naval demilitarisation of the North American Great Lakes . . . Third, arms control was used to develop norms of behaviour regarding international violence, as in the Hague Conventions which in 1899 and 1907 set out a series of restrictions on the right to wage war. Examples included prohibitions on the use of poisoned weapons, the killing or wounding of prisoners, and the unnecessary destruction or seizure of property of the enemy.

From S. Croft, 'In defence of arms control', *Political Studies*, vol. 44, no.5 (1996), pp. 896–7. Copyright permission granted by S. Croft.

Versailles was an attempt by the victors to prevent future German aggression by forcibly restricting the armaments Germany could develop and deploy. In 1925 the Geneva Protocol prohibiting the use (but not the manufacture and stockpiling) of poison gas was signed. The 1928 Kellogg–Briand Pact renounced war as an instrument of national policy. One of the era's most notable sets of arms limitation agreements, however, was the Washington and London Naval Treaties of 1922 and 1930. The Treaties involved a highly complex bargain mainly between Britain, the United States, and Japan, in which the parties agreed to:

- stop building capital ships for ten years (subsequently extended by a further five years);

- a 5:5:3 ratio among their navies; and
- a 35,000-ton limit on capital-ship displacement and a 16-inch calibre limit to the main armament.

Although these naval treaties have sometimes been regarded as 'a remarkable achievement', they did not stop the slide to the Second World War (Gray, 1992). Critics of arms control derived three key lessons from the Washington and London treaties. First, such agreements can be negotiated only when the international political climate is benign, but they fall apart when the political atmosphere is hostile. In the early 1920s and 1930s international relations were conducive to co-operation between states. By the mid-1930s, however, the political climate needed for arms control to succeed had evaporated as Imperial Japan and Nazi Germany prepared for war.

A second lesson identified by critics is that totalitarian governments, not contained by public accountability and the rule of law, often cheat on the agreements they sign. This was true of Germany in the 1920s and 1930s with its secret attempts to overcome the restrictions of the Treaty of Versailles; and both Japan and Germany in the 1930s with their open refusal to be bound by the obligations of the Washington and London Naval Treaties.

Third, democracies are particularly ill suited to respond to breaches of arms control agreements. Despite the abrogation of the naval agreements by Japan and Germany, Britain and the United States were slow to respond to the emerging threat. In Britain's case, the collapse of arms control initially inspired appeasement rather than rearmament. Critics also note that arms control agreements tended to tie the hands of democratic leaders who sought to respond to the changing circumstances of the late 1930s. They charge that the agreements helped to diminish international security (at least for the status quo powers) rather than increase it.

Although some benefits emerged following the 1921 Washington Treaty (e.g. the avoidance of transatlantic naval rivalry and Japanese acceptance of the Nine-Power Treaty on China), in general the treaties did not help to avert war in 1939 and did not improve the political climate of international relations during the 1930s. (For a slightly different view see Croft, 1996.) The same was true of various attempts made by the League of Nations during the interwar period to achieve world disarmament. In 1925, the League Council appointed a Preparatory Commission for a World Disarmament Conference which resulted in the 1932 World Conference on the Reduction and Limitation of Armaments in Geneva. With military force once again coming to the fore as an instrument of policy in the 1930s (the 'Devil's decade'), however, the Conference proved to be ineffective. (Box 8.2 provides a chronology of the period 1900–39.)

Phase Two: 1945–1962

Following the problems of the interwar period, disillusionment with disarmament and arms control characterized the immediate aftermath of the Second World War. The limited attempts at reviving international co-operation that were made only helped to reinforce the sceptical judgement of the day. The most significant postwar proposal was the US **Baruch Plan** in 1946. It was intended to achieve a supervised abolition of nuclear weapons, together with international control of nuclear research and production for

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BOX 8.2   THE HISTORICAL RECORD I (1990–1939)

1899 & 1907	The Hague Conferences
1919	The Treaty of Versailles
1922	The Washington Naval Treaty
1925	The Geneva Protocol
1925	Preparatory Commission for a World Disarmament Conference
1928 ·	The Kellogg–Briand Pact
1930	The London Naval Agreement
1932	The World Conference on the Reduction and Limitation of Armaments
1935	The Anglo-German Naval Agreement

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peaceful purposes. It was envisaged that the whole process would be controlled by an International Atomic Development Authority. On the surface the proposal looked very promising, but from the perspective of the Soviet Union it appeared much less attractive. The leaders in the Kremlin, who viewed it as an attempt to maintain an American monopoly on nuclear weapons technology, rejected the plan. In its place they suggested a ban on the use and manufacture of nuclear weapons and the destruction of the existing (US) stockpiles. They were not, however, prepared to accept any system of effective inspection. This proposal in turn was rejected by the Americans on the grounds that they would be giving up their nuclear programme (see Chapter 11) without any guarantee that the Soviet Union would not produce its own bomb.

These negotiations over the Baruch Plan represent probably the best opportunity the world community has had to eliminate nuclear weapons. The fact that they failed reflects a number of the underlying problems with disarmament as an approach to peace. The proposals, put forward by both the United States and the Soviet Union as their political relationship deteriorated, reflected their own distinctive national interests and contained a strong propaganda element. Neither side was prepared to take what they perceived as risks to their own security, especially when it came to nuclear weapons which could have a decisive influence on a future conflict. Far from contributing to easing the growing tension between the two powers in the late 1940s, the Baruch Plan only helped to exacerbate mistrust and heighten hostility.

Similar impasses arose in disarmament negotiations during the first half of the 1950s. The debut Soviet atomic test in 1949 was followed by the first American thermonuclear test in 1952 and a thermonuclear Soviet test in 1953. Against this background of rapid technological development, a 'parallel monologue' took place in the early 1950s on a range of far-reaching multi-stage disarmament plans. Both sides focused on the issues that affected their particular security interests, proposing cuts in those areas where their opponents had the advantage. As a result, no progress was made.

By the mid-1950s, the lack of success in disarmament negotiations and growing awareness of the dangers of nuclear war led many to recognize that a new approach to coping with the arms race was needed. It was increasingly evident that the chances of the superpowers agreeing to a comprehensive disarmament treaty were slim. As a result,

negotiators focused their attention on what were known as 'partial measures' designed to deal with specific security problems. Faced with growing anxieties about surprise attack, US President Dwight D. Eisenhower proposed an **'Open Skies'** arrangement in 1955 that would break down secrecy and distrust between the Eastern and Western blocs by allowing aerial inspection to ensure that aggressive actions were not being prepared. This was followed by negotiations in Geneva on a nuclear test ban, proposals for atomic free zones, and disengagement plans designed to reduce forces in critical areas like central Europe (for example, the 1957 **Rapacki Plan**).

This move towards greater flexibility at the policy level led to what has been described as 'new thinking' within the defence community. Although the ideas that emerged were not as original as the proponents sometimes claimed, a new literature began to appear in the late 1950s developing the theory of arms control. The writing on arms control questioned the feasibility of general and comprehensive disarmament and argued that greater international stability could be achieved by arms management. Attention was focused on the mutual interest which existed between the adversaries to avoid nuclear war. This approach was summed up in the work of Thomas Schelling and Morton Halperin. They argued that arms control included:

all forms of military cooperation between potential enemies in the interests of reducing the likelihood of war, its scope and violence if it occurs, and the political and economic costs of preparing for it. The essential feature of arms control is the recognition of the common interest, of the possibility of reciprocation and cooperation even between potential enemies with respect to their military establishments. Whether the most promising areas of arms control involve reductions in certain kinds of military force, increases in certain kinds of military force, qualitative changes in weaponry, different modes of deployment, or arrangements superimposed on existing military systems, we prefer to treat as an open question (Schelling and Halperin, 1961, p. 2).

The purpose of arms control was to focus on those 'most promising areas' of arms limitation which might involve reductions in armaments, but which also might involve initiatives at higher levels, if that helped to make war less likely. The intention of arms control proponents was to work within the prevailing system of nuclear deterrence rather than to try to abolish it. Arms control was designed to 'strengthen the operation of the balance of military power against the disruptive effects of the arms dynamic, especially arms competition, arms racing and technological developments that tend to make nuclear and non-nuclear deterrence more difficult (Buzan and Herring, 1998, p. 212). Managing armaments would make deterrence work better and thereby enhance stability.

During the late 1950s and early 1960s, there were still residual attempts to achieve **general and comprehensive disarmament** (GCD). Soviet Premier Nikita Khrushchev put forward a plan for 'total disarmament' at the General Assembly of the United Nations in September 1959. This led to the McCloy–Zorin talks in 1961 which culminated in 'Agreed Principles' in 1962 and a draft plan for GCD that was later discussed by the United Nations Eighteen Nation Disarmament Committee in Geneva. Like earlier disarmament talks, however, this plan came to nothing. In contrast, some impetus was given to the 'partial measures' approach by the December 1959 Antartica Treaty prohibiting all military activities in that region. The Antartica Treaty also set the scene for a number of other preventive arms control agreements which were reached in the

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BOX 8.3 THE HISTORICAL RECORD II (1945–1962)

1946	The Baruch Plan
1955	The Open Skies Proposals
1957	The Rapacki Plan
1959	General Comprehensive Disarmament Proposals
1959	The Antartica Treaty
1961 ·	The McCloy–Zorin Talks

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following 12 years (e.g. the 1967 Outer Space Treaty and the 1971 Seabed Treaty). Box 8.3 summarizes the chronology of the period 1945–62.

Phase Three 1962–1985

The October 1962 Cuban missile crisis gave more impetus to the arms control project. As the superpowers edged back from the nuclear abyss, both realized that they had a mutual interest in better crisis management. The Cuban crisis highlighted the dangers of misinterpretation during political confrontations. In June 1963, the United States and the Soviet Union signed a **'hot-line' agreement** to provide a secure and instant channel of communication between the leaders of both states. Four years later, during the Arab–Israeli war, the hot line was used for the first time to prevent the crisis from dragging in each of the superpowers in support of their respective allies.

The Cuban missile crisis also concentrated the minds of the key decision makers on the issue of nuclear testing. Despite previous negotiations and periodic moratoria on testing in the 1950s, it had not proved possible to secure a lasting agreement. In keeping with the less ambitious agenda of the new arms control school, the United States, Britain, and the Soviet Union agreed on a Partial Test Ban Treaty in August 1963. The treaty prohibited all nuclear tests in the atmosphere, but allowed tests to continue underground. There also was an escape clause inserted in the treaty which allowed testing to be resumed after three months' notice. This clause protected signatories who might feel threatened by future technological advances or cheating. Neither French nor Chinese leaders (who tested nuclear weapons in 1960 and 1964 respectively) were prepared to accede to the treaty because they believed it benefited the more advanced nuclear states.

The Partial Test Ban Treaty encouraged further arms control initiatives. Between 1963 and 1968 the superpowers focused on their mutual intent to prohibit further nuclear proliferation by trying to negotiate a wider nonproliferation agreement. This culminated in the signing of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in July 1968. Once again China and France refused to sign, and a number of other states rejected the treaty on the grounds that it froze the nuclear status quo and involved only a limited, unenforceable commitment by the nuclear powers to give up their own nuclear weapons.

India's 1974 nuclear test, ostensibly for peaceful purposes, highlighted some of the weaknesses of the NPT. Despite this setback, the NPT provided some limited benefits. It became the central plank in a nonproliferation regime that helped restrain the pace of

global nuclear proliferation. It also emphasized the opportunities for co-operation between the superpowers even at times of political friction between them.

In the aftermath of the Soviet invasion of Czechoslovakia in 1968, the superpowers focused for the first time on the difficult task of limiting strategic armaments. In May 1972, the United States and the Soviet Union signed the SALT I Agreement. SALT I included limitations on anti-ballistic missile deployment (the Anti-Ballistic Missile Treaty), an interim agreement on offensive strategic missiles, and a protocol dealing with submarine-launched missiles. The aim of the treaty was to 'cap' missile deployments to prevent a future unrestricted arms race. Despite the unprecedented nature of the agreement, it quickly became the subject of criticism, both within the United States and in the arms control community itself. Domestic critics of the US government charged that it froze the Soviet Union's numerical superiority in nuclear warheads while at the same time allowing the USSR to compete in those qualitative areas where the United States was in the lead. This failure to address the all-important qualitative issues (including accuracy and multiple warheads) was particularly disappointing for many arms control supporters. They were concerned that the arms race had simply shifted from a quantitative to a qualitative competition.

As a result of this criticism and perceptions that the momentum of SALT I could lead to more agreements, new negotiations began in Geneva. Progress, however, proved to be slow. In June 1973, US President Richard Nixon and Soviet President Leonid Brezhnev committed themselves to complete an agreement by 1974. By July of that year, however, only limited objectives had been reached: to adopt a threshold of 150 kilotons for underground nuclear tests, and to limit the deployment of an anti-ballistic missile system to one site. Neither arrangement was very significant but both sides agreed to continue the process of negotiation. By November a further accord was reached at Vladivostock between Brezhnev and US President Gerald Ford that set a ceiling for strategic delivery vehicles (2,400) and multiple independently targetable re-enty vehicle (MIRV) warheads (1,320). These ceilings were designed to provide guidance for subsequent negotiations and represented part of the complicated task of defining 'equal security' or 'parity' between the superpowers. Despite the apparent commitment of both sides to move towards a new treaty, growing difficulties in East-West relations delayed the signing of SALT II until June 1979. The final agreement followed guidelines reached at Vladivostock five years earlier. The ceilings for strategic delivery vehicles were set at 2,400 (to be reduced to 2,250 by 1981); 1,320 for MIRVed ballistic missiles and strategic bombers; and 1,200 for MIRVed ballistic missiles alone.

Almost immediately, however, the arms control process was derailed by the 1979 Soviet invasion of Afghanistan. In January 1980 President James Carter asked the Senate to delay the ratification of SALT II. Although SALT II remained unratified, both the United States and the Soviet Union abided by the limits of the treaty. The Reagan administration, however, frequently accused the Soviet Union of violating the agreement.

Difficulties in strategic arms control also were mirrored by the lack of progress in other arms control initiatives during the ten years between 1975 and 1985. Attempts to negotiate a conventional arms control agreement at the Mutual Balanced Force Reduction (MBFR) talks bogged down in complex technicalities and mutual recriminations. Following the Soviet deployment of SS-20 missiles and NATO's counter-deployment of cruise

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BOX 8.4 **THE LIMITATIONS OF ARMS CONTROL IN THE COLD WAR**

During the period of East-West arms control between 1963 and 1979 . . . the linkage of arms control to expectations of improved political relations proved to be a greater burden than the arms control process could bear. The process became deeply entangled with political détente, and the state of arms control talks was seen as a barometer of East-West relations. Any positive political influence exerted by the arms control process was easily overwhelmed by the intensifying US-Soviet rivalry in the LICs [less industrialized countries], growing US resentment at what it felt to be its loss of nuclear superiority, and growing Soviet resentment at what it felt to be a US attempt to re-establish nuclear superiority. Arms control was not able to insulate détente from East-West rivalry.

From B. Buzan and E Herring, *The Arms Dynamic in World Politics* (London: Lynne Rienner, 1998), p. 224.

BOX 8.5 **THE HISTORICAL RECORD III (1962–1985)**

1963	The Hot-line Agreement
1963	The Partial Test Ban Treaty
1967	The Treaty on the Exploration and Use of Outer Space
1967	The Latin American Nuclear Free Zone Agreement
1968	The Non-Proliferation Treaty
1971	The Seabed Treaty
1971	Agreement on Measures to Reduce the Risk of the Outbreak of Nuclear War
1972	The Convention on the Prohibition of Biological Warfare and on the Production of Biological Weapons
1972	Agreement on Prevention of Nuclear Incidents
1972	SALT I Treaty
1973	The Helsinki Final Act
1973	Agreement on the Prevention of Nuclear War
1973	Start of the Mutual Balanced Force Reduction Talks
1974	Vladivostok Accords
1974	The Treaty of Tlateloco (Latin America Nuclear Weapons Free Zone [NWFZ])
1979	Salt II Treaty
1985	The Treaty of Rarotonga (South Pacific NWFZ)

and Pershing II missiles, negotiations on intermediate range systems also served to exacerbate rather than to reduce international tensions in the first half of the 1980s. (See Box 8.4. Box 8.5 presents a chronology of the period 1962 to 1985.)

Phase Four: 1985 to the present

The first signs of change came with the Stockholm Accords in 1986. Following earlier attempts to build confidence between East and West (e.g. the Conference on Security and

Co-operation in Europe), the accords established an important precedent in enhancing transparency by gaining acceptance for the idea of intrusive verification. With Gorbachev's accession to power in the Soviet Union in 1985, many of the traditional difficulties preventing agreement began to evaporate. Between 1985 and 1989, Gorbachev apparently adopted a strategy resembling Graduated Reciprocation in Tension-reduction (GRIT). The Soviet leader continuously and persistently put forward initiatives designed to achieve a reciprocal response from the United States and thereby reduce tensions. Although this strategy was not altogether successful in achieving the goal of reciprocity (especially in the short term), A. Collins has suggested that 'it is difficult to imagine how the Cold War could have ended if neither superpower had been prepared to take an initial conciliatory step'. He further proposed that 'since the impetus for change came from the USSR—from the unilateral initiatives to crucial breakthroughs in treaty negotiations— Gorbachev appears to be the decisive figure' (Collins, 1998; see also Box 8.6).

One of the crucial breakthroughs in the superpower standoff occurred with the Intermediate-Range Nuclear Forces (INF) Treaty (December 1987). Both sides agreed to abandon the deployment in Europe of all ground-launched theatre nuclear missiles with ranges between 500 and 5,500 kilometres. This represented the first agreement to abandon an important category of nuclear weapons. Building on the Stockholm Accord it also introduced an intrusive verification regime to support it. Former US Secretary of State George Shultz has argued that the INF Treaty came at a crucial time in the period leading to the end of the Cold War:

The INF treaty ... was a watershed agreement, not only because of its terms but also because it showed that large-scale reductions in nuclear weapons were possible: the United States and the Soviet Union *could* work out a complex problem of great importance (Shultz, 1993, pp. 1130–1).

The end of the Cold War brought a flurry of arms control activity. Following several years of negotiation, a Strategic Arms Reduction Treaty (START I) was finally signed in 1991. Instead of imposing limits on increases in weapons START was designed to halt and reverse the arms race. Under the provisions of the treaty the United States and the Soviet Union agreed to reduce their nuclear arsenals to 1,600 strategic delivery vehicles and 6,000 warheads (of which 4,900 would be ballistic-missile warheads, with a ceiling of 1,100 ICBM warheads). This was followed in the same year by a Treaty on Conventional Arms Forces in Europe (CFE). CFE overcame the impasses which had led to more than 15 years of largely fruitless negotiations in the MBFR Talks in Vienna.

Russian President Boris Yeltsin and US President William Clinton continued the momentum of the early post-Cold War years with a START II agreement in 1993. The treaty involved two main phases. Phase one was designed to run in parallel with the seven-year timetable for START I, with each side limited to between 3,800 and 4,250 warheads at the end of the period. Phase two aimed to limit both sides to between 3,000 and 3,500 warheads by January 2003 (including the elimination of all ICBMs). As a result of a Protocol to the START I Treaty signed in May 1992, however, START II would only enter into force once START I had been ratified by the United States and Russia and had entered into force. This also meant ratification by Ukraine, Kazakhstan, and Belarus (UKB), each of which had inherited a substantial part of the Soviet Union's nuclear arsenal when it broke up in 1991. This was eventually achieved in February 1994. The

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BOX 8.6 UNILATERAL (GRIT) INITIATIVES BY GORBACHEV, 1985–1989

April 1985	Proposal to halt deployment of Soviet SS-20 missiles in Europe
October 1985	Number of SS-20 missiles reduced to 243
July 1985	Announcement of unilateral moratorium on nuclear testing
January 1986	Moratorium extended
January 1986	Plan announced to free the world of nuclear weapons in 15 years
August 1986	Moratorium extended
October 1986	Reykjavik Summit—proposal to eliminate all nuclear weapons
January 1987	Moratorium extended
April 1987	Offer to eliminate intermediate-range nuclear missiles
May 1988	Moscow Summit—three-point plan to reduce conventional weapons in Europe
December 1988	Announcement at UN of plan to cut Soviet troops by 500,000, including 240,000 in Europe
January 1989	14.2 per cent cut in defence budget announced
May 1989	500 tactical nuclear weapons to be withdrawn from Eastern Europe

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Russians refused to exchange the instruments of ratification for START I and its Protocol until UKB acceded to the NPT as non-nuclear weapons states. This goal was reached in December 1994 when the Ukraine finally acceded to the NPT. In May 1995 the United States and Russia agreed to a 'Joint Statement on Transparency and Irreversibility'. As the name implies, this was intended to make the reductions that had been agreed to in START I and II irreversible.

After this joint statement, however, progress became more difficult. While the US Senate approved the ratification of START II in January 1996, the Russian Duma held back. Concern in Moscow centred on three issues: the treaty's costs and strategic effects; the need to resolve a new debate over the ABM Treaty before agreeing to START II limits; and growing hostility towards NATO expansion. Some of these issues were settled by subsequent agreements and the decision by NATO in 1997 to limit expansion at the time to three former members of the Warsaw Pact. A START II Protocol was finalized in September 1997 that deferred completion of phase one of its force reductions from 2001 to 2004, and the second phase of force reductions from 2003 to 2007, thereby helping to defer Russia's costs of dismantling its weapons. At the same time, the United States agreed to negotiate a START III as soon as START II entered into force. The aim would be to bring the number of warheads down to 2,000–2,500 by 2007. Also in September 1997, 'Demarcation Agreements' were reached that would distinguish between US work on a theatre ballistic missile defence system against 'rogue' states, and a strategic system that would alter the balance between Russia and the United States. It was hoped that these ABM and START-related agreements would persuade the Russian Duma to ratify START II and its Protocol. They failed, however, to have their desired effects.

Conventional arms control negotiations also proved to be difficult following the

signing of the CFE Treaty in November 1991. The dissolution of the Soviet Union meant that the context of the treaty changed just as it was signed. The task of the negotiators then became how to adapt the CFE Treaty to the new circumstances. Initially this involved trying to persuade the former Soviet successor republics to divide up between themselves the entitlements and obligations of the old Soviet Union. This was achieved in mid-1992, but by mid-1995 new problems arose over the unwillingness of Russia to reduce its forces in the flank zones at a time when it was experiencing difficulties in the Federation republic of Chechnya. The issue was discussed at the first CFE Review Conference in May 1996 when a new treaty map delimiting the boundaries of the flank zones was accepted, giving the Russians more freedom to deploy troops to the troubled region. Despite this agreement, attempts to achieve a fundamental revision of the treaty proved more difficult. It took until November 1999 to negotiate an agreement on the Adaptation of the Treaty on Conventional Armed Forces in Europe because of renewed fighting in Chechnya.

The increasing impediments to progress in arms control during the late 1990s also arose in a number of other fields. Despite the indefinite extension of the NPT in 1995, significant disagreements continued between the nuclear and non-nuclear states over the pace of nuclear disarmament (enshrined in Article 6 of the Treaty). Nuclear tests carried out by India and Pakistan in May 1998 also demonstrated the fragility of the whole nonproliferation regime. The breakthrough achieved with the Comprehensive Test Ban Treaty (CTBT) in 1996 ground to a halt in late 1999 when the US Senate refused to ratify the CTBT. The Chemical Weapons Convention (CWC) which entered into force in April 1997 also suffered from the failure of a number of Middle Eastern states to join, as well as implementation problems in many of the states that had signed it. Similarly, the Biological Weapons Convention (BWC) suffered from the absence of a legally binding verification and compliance agreement, regarded by many as essential to make it work effectively. Tensions also have arisen in recent years between the United States, on the one hand, and Russia and China on the other, over US proposals to develop a national missile defence system that would require modification or abrogation of the 1972 ABM Treaty.

KEY POINTS

- Disarmament agreements between 1900 and 1939 failed to prevent the drift to war either in 1914 or in 1939.
- The political antagonisms associated with the Cold War meant that disarmament proposals between 1945 and the late 1950s were largely propaganda exercises.
- Arms control, as an approach to international security, emerged as a response to the earlier failures of disarmament.
- The aim of arms control since the late 1950s has been to mitigate the instabilities associated with competing defence policies.
- Enthusiasm for arms control between 1962 and 1985 brought numerous agreements that usually helped ease tensions between the superpowers. Sometimes, however, they exacerbated the hostility.
- The period from 1985 to the mid-1990s was a more productive period for arms

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BOX 8.7 THE HISTORICAL RECORD IV (1985–PRESENT)

1986	The Stockholm Accords
1987	Intermediate-Range Nuclear Forces Treaty (INF)
1987	Missile Technology Control Regime (MTRC)
1990	Conventional Forces in Europe (CFE Agreement)
1991	START I
1993	START II
1992	Chemical Weapons Convention
1995	The Pelindaba Treaty (African NWFZ)
1995	Indefinite extension of the NPT
1996	Comprehensive Test Ban Treaty
1997	START II Protocol
1997	Demarcation Agreements (ABMT)
2000	NPT Review Conference

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control and disarmament, leading some supporters to believe that a new 'golden age' had dawned. Recent disagreements, however, have hampered implementation of the Comprehensive Test Ban Treaty, START III, and the Chemical and Biological Weapons Conventions. US research into a national missile defence system threatens the further existence of the ABM Treaty.

The lessons of the Cold War and post-Cold War eras

The key questions about arms control in the second half of the twentieth century are what role it played in helping to prevent war and in contributing to the end of the Cold War; and what role it now plays in bolstering peaceful relations since 1989. They give rise to two dissimilar answers.

'Arms control has been of crucial importance'

For many arms control supporters the fact that the Cold War did not turn hot indicates that the agreements reached, especially in the aftermath of the Cuban missile crisis, helped prevent the outbreak of war between the superpowers. The Hot-line Agreement, the Partial Test Ban Treaty, the Non-Proliferation Treaty, and the SALT I and SALT II Treaties all contributed to the recognition that the superpowers had a mutual interest in avoiding nuclear war. According to this view, the constant technological changes and widespread suspicions inherent in a system of global anarchy help to encourage arms competition which, in turn, endangers international security. By addressing the

instabilities of the military balance of power, supporters argue that arms control significantly contributed to the absence of great power conflict during the Cold War. Even those negotiations that did not succeed, such as the MBFR Talks, are believed to have contributed to greater understanding between the adversaries. Viewed from this perspective, arms control has been the **'high road to peace'**.

Supporters also note that arms control contributed in an important way to ending the Cold War. According to this view, agreements such as the Stockholm Accords and the INF Treaty played an essential part in building confidence between East and West and creating the kind of trust that was crucial to the winding down of the adversarial relationship. Viewed in these terms, arms control was itself part of the process that broke the circle of mutual hostility between the United States and the Soviet Union. The agreements reached were not simply a reflection of the improving climate of East-West relations; they also served to reduce suspicion and mistrust.

Those who support this positive view of the role of arms control also cite its contributions to enhancing co-operation during the post-Cold War era. According to this view, the START I and II agreements, the extension of the NPT, and the signing of the CTB Treaty have helped to reinforce the trust created by earlier agreements. In this sense, arms control has played an important part in gaining wider acceptance for the idea of 'co-operative security'. The agreements also have helped to lock in the signatories and made it more difficult for them to return to the kinds of adversarial politics they pursued during the Cold War. This process will be enhanced, it is argued, by improvements to existing agreements like the Chemical Weapons Convention and the Biological and Toxins Weapons Convention, and new agreements like START III and a Fissile Materials Cut-Off Treaty.

'Arms control has been irrelevant'

The more negative judgement about arms control is that it played little or no part in keeping the peace during the Cold War, that it was insignificant in helping to end the Cold War, and that it plays only a marginal role in the post-Cold War world. Indeed, opponents of arms control argue that the whole concept is fatally flawed. Writing in 1984, Louis J. Halle put the point in the following way:

In no other organized endeavour of the nations of mankind has so much work been expended to so little effect as in the efforts to achieve arms control. We must suppose that there has been something fundamentally wrong at the conceptual level to account for so consistent a failure on so large a scale over so long a period (quoted in Gray, 1992, p. 215).

According to this judgement, Cold War arms control agreements had little impact on the prevention of war. Proliferation was not prevented by the Non-Proliferation Treaty; quantitative and qualitative improvements in strategic armaments continued in spite of (or even because of) SALT I and II; and MBFR failed to achieve conventional arms limitation. Where agreements were reached, the states involved often were able to agree not to do those things they did not wish to do anyway. Critics also argue that arms control negotiations were often used as a source of propaganda and as such enhanced distrust between the superpowers.

Some suggest that arms control is possible only when it is unnecessary, and impossible when it is needed. This is referred to as the 'arms control paradox'. In the post-Cold War era, arms control agreements simply reflect the thaw in the political antagonisms between East and West. INF, it is argued, reflected (but did not cause) the growing rapprochement of the 1980s. Similarly, CFE, START I and II, and the CTBT were only possible when more co-operative relations existed between the United States and Russia in the 1990s. This positive political relationship, however, made these agreements largely unnecessary.

Critics therefore see the agreements of the 1990s as being of little importance to the process of co-operation which developed between East and West. They also point to the fact that major problems continue to bedevil contemporary arms control negotiations. Attempts to establish verification procedures for the Chemical Weapons Convention and the Biological and Toxins Weapons Convention so far have failed. The Comprehensive Test Ban Treaty still awaits ratification and serious difficulties have emerged over American proposals to modify the 1972 ABM Treaty to allow the deployment of a national missile defence system. (See Chapter 10.) Critics argue that despite the post-Cold War euphoria, the end has come for arms control. Negotiations create more problems than they solve.

KEY POINTS

- Supporters of arms control point to the fact that arms control helped keep the Cold War cold. They also believe that arms control agreements contributed to the end of the Cold War and are currently helping to maintain more peaceful relations between the great powers.

- Sceptics believe that the concept of arms control is fatally flawed, that agreements did nothing to help avoid war or to help bring the Cold War to a close. They also note that as political relations have improved, post-Cold War agreements have been unnecessary.

Does arms control make a difference?

Which of these two positions is correct? Is arms control **'the high road to peace'** or a **'house of cards'** (Gray, 1992)? The answer to this question raises very difficult problems for the student of strategic studies. If arms control is designed to 'reduce the likelihood of war, its scope and violence if it occurs, and the political and economic costs of being prepared for it', we have the complex task of assessing how far these objectives have been achieved in practice. But how can we establish 'cause' and 'effect'? If we interpret 'making a difference' to mean making a contribution to initiating and maintaining peaceful, co-operative relations between adversary states or groups, how can we decide how significant arms control is in this process? The historical record suggests that the sceptics are

nearer the mark. To make a balanced judgement, we need to look at the impact of arms control on several key areas:

- international stability;
- norms of behaviour;
- peaceful change.

International stability

Colin Gray has written that there is a great deal of 'analytical flabbiness' when it comes to discussing concepts like '**stability**'. One of the central tenets of arms control theory is that arms control can head off dangerous developments that arise from arms races, thereby contributing to strategic stability and to crisis stability. This, however, implies that there is a connection between arms races and war and that there are clear criteria for judging 'stability'.

It is not altogether clear that arms races do lead to war. In some cases, such as the First World War, the competition in armaments building did contribute to the political antagonisms that existed and played a significant part in the outbreak of war. In the case of the arms race between the superpowers during the Cold War, however, clearly war did not result. Whether the nuclear arms race contributed to international instability which was only prevented from escalating into war by arms control agreements is more difficult to judge.

'Stability' and 'instability' are clearly **political** rather than military terms, but the existing or planned armaments can affect the tenor of international politics. Instability is the result of political perceptions, but those perceptions are often formed by past or contemporary military policies pursued by other states. This is reflected in the perennial **security dilemma** between states. Policymakers believe that their own armaments are defensive while those of others are often seen as offensive. What makes the policies of others appear offensive is a matter of political judgement about the threat which is conditioned by a wide range of issues, including historical animosity, ideology, alliance affiliations, and contemporary military policies.

During the Cold War, arms control attempted to deal with the problems of perceived instability which arose from the military competition between the superpowers. Some of these attempts were successful, most were not. By the early 1970s, strategic stability (defined in terms of a rough calculation of military parity and what appeared to be a growing consensus about the 'rules' of nuclear deterrence) was threatened by an unrestricted arms race in both strategic offensive missiles and anti-ballistic missile systems. Many became concerned that a quantitative and qualitative gap in offensive missiles, and deployment of ABMs by one side ahead of the other, might undermine the rationale of **Mutual Assured Destruction** (MAD). Strategic stability was generally believed to depend on the maintenance of MAD. The 1972 SALT I Treaty succeeded in restricting the deployment of ABMs, but it failed to limit offensive missiles because it did not address the problem of qualitative developments. SALT I therefore enhanced stability in one sense but undermined it in another sense by channelling the arms race into MIRVed technology and by exacerbating distrust and uncertainty. Subsequent attempts

to address the qualitative arms race in the SALT II Treaty failed when the treaty was withdrawn from the Senate ratification process following the Soviet invasion of Afghanistan. Both sides agreed to be bound by the treaty, but the deterioration in East-West relations in the early 1980s led to accusations of cheating and non-compliance. Strategic stability was further undermined by the military doctrines of both superpowers which increasingly emphasized warfighting strategies. These helped further to encourage open-ended arms competition and limited the search for areas of mutual co-operation.

One of the great concerns during the Cold War was that the vulnerability of weapons systems might encourage a surprise attack during a crisis. Arms control was seen as a means of helping to enhance crisis stability. The Hot-line Agreement in the aftermath of the Cuban missile crisis and the agreement on the Prevention of Nuclear Incidents (1972) were intended to achieve these objectives. Such measures seem to have been of some value. For example, they did not prevent the confrontation which occurred in the 1973 Middle East crisis when the United States placed its nuclear forces on alert, but the hot line did help the leaders on all sides to de-escalate the crisis.

Arms control also has been used to enhance crisis stability by trying to restructure military forces to make them less vulnerable to attack. The SALT treaties were somewhat unsuccessful in achieving this objective. START II, however, was more successful because it shifted deployment plans away from weapons which were perceived to be destabilizing. Much the same can be said of the INF Treaty, the unilateral decisions to abandon short-range nuclear weapons in the early 1990s, and the CFE Agreement in 1991. Although these agreements have been criticized, they were designed to overcome some of the dangers that could arise in crisis situations. The INF Treaty and the reduction of short-range nuclear forces were intended to diminish the dangers associated with theatre and tactical nuclear weapons that could have been used at an early stage in any conflict. One of the purposes of the CFE Agreement was to reduce the perceived dangers of offensive conventional strategies and surprise attack. A case also can be made that such agreements were only possible when the climate of international relations was improving. Whether they can 'lock in' states during periods of hostility remains much less certain. Arms control, after all, is most needed, but most difficult to achieve, in periods of stormy political weather.

In the early post-Cold War period, arms control agreements were relatively easy to achieve and helped to enhance the perceptions of stability. As relations between the United States and Russia became more strained in the late 1990s, the steady flow of treaties dried up. Congress in the United States and the Duma in Russia became less willing to take risks in the interests of international security. Narrower perceptions of national security became the order of the day. As a result, the notion that arms control agreements could enhance international stability was increasingly questioned in national capitals.

Recognizing the growing difficulties on the arms control horizon, President Clinton and Russian President Vladimir Putin agreed on a number of principles to improve strategic stability during summit meetings in June, July, and September 2000. This Strategic Stability Cooperation Initiative (see Box 8.8) attempted to define those areas of their mutual relationship which were critical to international security. These included expanding existing arms control programmes, and identifying new areas for co-operation, such

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BOX 8.8 **JOINT STATEMENT ON STRATEGIC STABILITY COOPERATION INITIATIVE BETWEEN THE USA AND RUSSIA, 6 SEPTEMBER 2000**

The Joint Statement on Principles of Strategic Stability, adopted in Moscow on June 4, 2000, and the Joint Statement on Cooperation on Strategic Stability, adopted in Okinawa on July 21, 2000, establish a constructive basis for progress in further reducing nuclear weapons arsenals, preserving and strengthening the ABM Treaty, and confronting new challenges to international security. The United States and Russia reaffirm their commitment to the ABM Treaty as a cornerstone of strategic stability. The United States and Russia intend to implement the provisions of the START I and INF Treaties, to seek early entry into force of the START II treaty and its related Protocol, the 1997 New York Agreements on ABM issues and the Comprehensive Nuclear Test Ban Treaty, and to work towards the early realization of the 1997 Helsinki Joint Statement on Parameters on Future Reductions in Nuclear Forces. The United States and Russia also intend to seek new forms of cooperation in the area of non-proliferation of missiles and missile technologies with a view to strengthening international security and maintaining strategic stability within the framework of the Strategic Stability Cooperation Initiative between our two countries.

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as theatre missile defences, early warning information, missile proliferation measures, and enhanced confidence and transparency-building arrangements. The appointment of a new American president, George W. Bush, in January 2001, however, once again opened up the prospect of a clash with the Russians over national missile defence. Bush and a number of his advisers saw NMD as an important national security requirement against the proliferation of weapons of mass destruction by 'rogue' states and promised to push ahead with the programme. US proposals to develop a limited NMD system to provide protection against 'rogue' states were perceived by Russia and China as being (ultimately) directed against them. For the United States, the NMD programme and changes to the ABM Treaty were designed to enhance **international stability**. For Russia and China, these plans were deeply **destabilizing** because they were likely to reignite the arms race between the great powers. Whether the increased enthusiasm for missile defences in the United States will lead to serious long-term friction between the United States, Russia, and China remains one of the great security questions of the day.

Norms of behaviour

When judging the utility of arms control, much depends on how much is expected of it. Should we seek absolute standards or more relative assessments of performance in an imperfect world? Supporters of arms control, with some justification, often argue that relative standards are more reasonable. Arms control has played a part in establishing and maintaining certain norms of state behaviour that enhance international security. The 1925 Geneva Protocol on the non-use of poisonous gas, the 1968 NPT, the 1987 Missile Technology Control Regime, the 1996 CTBT, all have created regimes to prevent destabilizing political or military developments.

The problem is that such norms are often weak, or only reflect the preferences of powerful status quo powers. It seems likely that the nonproliferation regime will only last as long as it suits the interests of the non-nuclear (but nuclear-capable) states. In particular, it does not appear to have influenced the search by Saddam Hussein for nuclear weapons even though Iraq is a signatory of the NPT. Neither India nor Pakistan was a signatory of the NPT but it seems likely that even if they had signed, it probably would not have prevented them from undertaking their tests in May 1998. India and Pakistan regarded the NPT largely as a Western device to prevent others from acquiring nuclear weapons while they held on to their own. There seemed to be a rule for one set of (nuclear) states, and a different rule for the set of (non-nuclear) states.

While these criticisms are justified, the establishment of regimes and taboos against undesirable international behaviour has value. Some consider the effects of this kind of arms control to be so limited that they are almost worthless. Such a judgement, however, goes too far. In the case of nonproliferation, there are many reasons why states do not develop nuclear weapons and the regime is unlikely to be decisive in its impact on leaders' thinking about developing such weapons. The regime, however, puts up barriers and increases the political price of going nuclear. While it is impossible to quantify its benefits, the fact that so many states have signed the NPT suggests that for them (and for different reasons) it performs a useful and meaningful role. The international community clearly believes that the world is a safer place with the NPT than without it—despite its imperfections.

Peaceful change

Can arms control contribute to **peaceful change** in international politics? Once again this is the subject of considerable controversy between supporters and critics of arms control. It also requires an answer that is difficult if not impossible to support.

For the critics, arms control reflects the state of political relations but does not help to shape them. According to this view, there has to be a *prior* improvement in international relationships before arms control becomes possible. During the Cold War there were periods of detente when arms control played a part in helping to enhance confidence between the adversaries. This happened in the aftermath of the Cuban Missile Crisis and in the early 1970s. These were short-lived periods, however, and more hostile relations followed. The effects of arms control were limited and temporary. There is very little evidence of arms control helping to improve superpower relations during periods of hostility. Indeed the evidence seems to support the view that differences over arms control more often than not exacerbated the problems that existed. SALT, MBFR, and CSCE negotiations were often the occasions for major recriminations between East and West.

In contrast, a rather different case can be made about arms control in the late 1980s and 1990s. While the end of the Cold War had many causes, arms control played a part in mitigating East–West conflict. Gorbachev's GRIT-type initiatives between 1985 and 1989 (see Box 8.6), the Stockholm Accords, the INF Treaty, the START negotiations, and progress in conventional arms discussions, all helped to break down the barriers of mutual mistrust between Washington and Moscow. Initially, the effects of these initiatives were largely psychological, but no less important for that. President George H. W. Bush, in the early 1990s, regarded conventional and nuclear negotiations during this

period as 'part of creating a context of progress in East-West relations'. They were an **integral part** of the process of peaceful change, not independent of it.

Admittedly, arms control becomes much easier when the political climate is benign. The START and CFE Agreements, the extension of NPT, and the signing of a CTBT did nevertheless help to build trust between the former adversaries. Subsequently, disagreements over NATO expansion and its involvement in the former Yugoslavia, American interest in national missile defence, and domestic anxieties in both countries over the ratification of arms control agreements slowed the progress of peaceful change. In the aftermath of the 11 September 2001 atrocity, however, Presidents Bush and Putin talked about a new 'era of trust' in which significant cuts would be made in strategic armaments without the need for a formal arms control treaty being signed. Political relationships are complex and history suggests that arms control is only one part of the process that determines how relationships develop.

KEY POINTS

- With the possible exceptions of the Hot-line Agreement and the NPT, arms control made a modest contribution to international stability during the Cold War.

- More attention has been given to crisis stability in the post-Cold War period. It remains to be seen, however, whether the agreements reached are capable of surviving in a more hostile political environment.

- The case can be made that arms control regimes do contribute to international security. The norms, however, are fragile and easily flouted.

- Whether arms control contributes to peaceful change remains a highly contested issue. Arms control is *part* of the political process influencing inter-state relations, but not necessarily the most important part.

Conclusion

Even though arms control is part of the political process and can contribute to peaceful change, it does not mean either that it is the decisive element in achieving international (or domestic) security or that it can necessarily prevent or survive a serious deterioration of political relations. An analysis of the reasons for peaceful change in international relations during the late 1980s and 1990s would have to include powerful economic forces and political events in central and Eastern Europe. Should relations between the major powers deteriorate in the future, the arms control agreements they signed in the 1990s probably will fall by the wayside. As Colin Gray has argued, 'sovereign states cannot be locked into arms control argreements that express outdated political assumptions and power relations'.

Arms control regimes, however, remain important in the search for international security, or security within states. Because the agreements are not universally binding and may

not in themselves decisively influence interstate politics, especially during periods of hostility, it does not mean that they cannot maintain better relations between states or help contribute towards peaceful settlement within states. Admittedly the historical record is not a very positive one. Nevertheless, arms control is not only perceived to be necessary but, if expectations are limited, it is also seen as contributing to international security. Recently, there has been an important shift towards arms control and disarmament in regional and domestic contexts. The 1996 Florence Agreement on Sub-Regional Arms Control attempted to provide military ratios (i.e. in tanks, artillery, aircraft, helicopters, and armoured personnel carriers) between the Serb Republic, the Bosnian-Croat Federation, Croatia, and Yugoslavia. There has been some movement in the task of decommissioning arms in Northern Ireland as a result of the 'Good Friday' agreement, and in United Nations efforts to facilitate disarmament in Cambodia, Iraq, Somalia, and Mozambique (all with varying degrees of success). It also is significant that unilateral measures of arms control have increased in importance during the post-Cold War period as the intense hostility of the past has declined. Multilateral treaties still remain of great significance, but both the United States and Russia now appear willing to make reductions without tying them to reciprocal reductions by the other side.

The fundamental changes in the security environment mean that arms control will have to adjust to the emerging international security system if it is to be of continuing relevance. As A. D. Rotfeld has argued:

Security in the past was based on a balance of power, equilibrium of forces and parity. At the beginning of the 21st Century neither balance nor parity exists in Russian-US relations, and the bilateral relationship is no longer the central point of reference for other states in the international system. Moreover, the world has seen the proliferation of nuclear weapons to additional states, and other states are suspected of harbouring ambitions to develop or otherwise acquire them (Anthony and Rotfield, 2001, p. 5).

Arms control can no longer be the preserve of the great powers. It has to take account of the new challenges, including regional conflicts and the military capabilities of non-state actors. (See Chapter 9.) This means that contemporary arms control faces considerable uncertainty. How much effort should be put into preserving existing treaties and agreements? Should traditional arms control methods (including formal treaties) be used to deal with the new challenges? How far should the whole arms control agenda be expanded to include different types of weapons, a broader range of equipment, non-military issues, and a wider number of actors? Is there a need for a new organizing principle or conceptual framework to be developed to reflect the new security environment? These are questions that remain unanswered.

Arms control and disarmament certainly are not panaceas. For all their limitations, however, disarmament, and especially arms control, can 'make a difference', especially in building confidence and lessening tension between adversaries. It seems likely that they will remain part of the search for greater global security. But given their relatively limited achievements, the complexity of world politics, and uncertainties about the future, states are unlikely to rely on arms control and disarmament as central pillars of their security policies.

QUESTIONS

1. What are the main distinctions between the theories of arms control and disarmament?

2. Why did attempts to achieve general and comprehensive disarmament prove to be so unsuccessful?

3. Account for the growing interest in arms control by the superpowers in the early 1960s.

4. Did the Non-Proliferation Treaty help to prevent the spread of nuclear weapons?

5. What were the strengths and weaknesses of the SALT I Treaty of 1972?

6. Did arms control help to end the Cold War?

7. Are there any lessons that can be learned about arms control from the Cold War period?

8. To what extent has arms control helped to maintain international stability since the end of the Cold War?

9. Does arms control have a future?

REFERENCES AND GUIDE TO FURTHER READING

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WEB SITES OF INTEREST

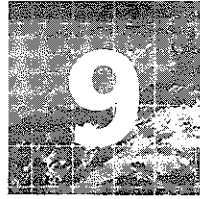www.state.gov/www/global/arms/bureauac.html

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Terrorism and Irregular Warfare

James D. Kiras

READER'S GUIDE

Sparking prairie fires, to paraphrase Mao Zedong, has seemed easy enough to do in theory but vexing in practice. If sparking and sustaining the fire is difficult, quelling it has proven even more so. This chapter describes the difficulties faced by governments under siege and evaluates counterinsurgency and counterterrorism theory. Recent commentators on irregular warfare have suggested that the strategy and tactics of irregular conflict have been transformed. They suggest terrorism and guerrilla warfare are no longer about politics or political change. Regardless of perceived changes in their natures, irregular warfare and terrorism will continue to be the predominant forms of conflict for the foreseeable future. For small groups, irregular forms of violence are the only available way for them to overcome an intractable foe to gain political power.

Introduction

Commenting on the surge in irregular warfare produced by 'wars of national liberation', Robert Taber asserted that 'the guerrilla fighter's war is political and social, his means are at least as political as they are military, his purpose almost entirely so. Thus we may paraphrase Clausewitz: *Guerrilla war is the extension of politics by means of armed conflict*' (emphasis in original; Taber, 1972, p. 26). **Postmodernists** and **critical theorists**, however, reject this explanation of irregular conflict. Martin van Creveld (1991), for example, suggested that warfare had become an intra-state cultural exercise devoid of political

goals. According to these theorists, the idea that terrorism and irregular warfare were forms of 'political violence' lost validity. They suggested that the key to understanding emerging forms of conflict was not allegiance to the state or conflicts between them; what mattered now was 'blood and belonging' (Ignatieff, 1994), or more specifically, a better understanding of the identity and contextual circumstances behind sub-state violence (Munck, 2000). Some authors also suggested that technology and ideology have transformed terrorism from an act designed for political effect to wanton mass destruction.

This chapter demonstrates that the ideas of Carl von Clausewitz are still relevant to today's terrorist and irregular campaigns. History and social, cultural, and economic factors shape irregular conflicts. There is no escaping the reality, however, that terrorists and insurgents (and those who fight against them) ultimately use military force to achieve *political* objectives.

Two examples illustrate the overarching political motivation driving irregular conflicts and actions: the campaign conducted by the Rwandan Tutsis in 1994 and the 11 September 2001 terrorist attacks on the World Trade Center and the Pentagon. A by-product of the war in Rwanda, the genocide perpetrated by the Hutus was widely attributed to be evidence of the dominance of cultural factors in the **'new dark age'** of irregular warfare. The ethnic animosity between Hutus and Tutsis was a factor contributing to the violence, but the goal of the rebel offensive was the overthrow of the ruling Hutu majority and, ultimately, control of the state. In other words, the expression of 'primordial violence' embodied in the actions of the Hutu army and militias, however morally reprehensible, sought to achieve a policy goal and was not merely violence for its own sake.

Policy goals also underpinned the attacks against the highly symbolic targets of American power in New York and Washington in September 2001. The opening shots of **'the first war of the twenty-first century'** were horrifying from a number of standpoints. No terrorist attack in history had claimed so many lives. Many Westerners were shocked that dozens of people were willing to sacrifice their own lives, and the lives of thousands of others, for their 'religious' beliefs. Religion is a powerful motivator but is not the end for which terrorism, irregular warfare, or any other form of conflict is undertaken. Political control is required to change fundamentally the religious orientation of a state: the English Civil War (1642–9), the Iranian 'Islamic Revolution' (1979), and the Taliban's struggle in Afghanistan (1994–2001+) are examples of different types of conflict fought to impose religious change once political control has been obtained. Osama bin Laden and the Taliban provided support for terrorism and insurgency worldwide to achieve a number of policy goals including: international recognition of the Taliban as the legitimate ruling authority in Afghanistan; the withdrawal of the United States presence in certain Gulf states; demonstrations of the vulnerability and weakness of the United States and, conversely, the potency and reach of the terrorists; the replacement of 'illegitimate' governments throughout the world with ones that follow the Khilafah, or a strict implementation of Sharia law; and political control over Islamic holy sites such as Mecca and Medina.

Definitions

The study of terrorism and irregular warfare can be confusing. Sometimes, they are portrayed as minor problems. Some observers like to point out that more Americans die in

their bathrooms every year than from terrorist attacks, yet the US Federal government spent $10 billion dollars in the fiscal year 1999 on initiatives to protect Americans from something less dangerous than their own bathtubs (Cato Institute, 1996). The use of value-laden or emotive language also fosters misunderstanding of terrorism and irregular warfare. 'Freedom fighters' sound appealing and worthy of support whereas the term 'terrorists' conveys cowardly violence, fear, and intimidation. 'Guerrilla' still connotes a spirit of adventure and romance to rebellious Western youth, evoked by the memory of Ernesto 'Che' Guevara nearly four decades after his death. There also is little agreement on what to call these types of violence: political violence, terrorism, irregular warfare, military operations other than war (MOOTW), low-intensity conflict, people's war, revolutionary warfare, war of national liberation, guerrilla war, partisan war, warfare in the enemy's rear, imperial policing, or small wars. As if this were not confusing enough, the effectiveness of terrorist and irregular actions is often questioned, yet they remain common forms of conflict, demonstrating that someone thinks they might work. Terrorist and irregular campaigns are perceived by governments as military nuisances that rarely achieve their stated political aims without the support of conventional forces. Critics further maintain that irregular diversions detract from what military organizations do best, namely to prepare for high-intensity conventional combat against one another. (See Box 9.1.)

Some definitions of terrorism and irregular warfare tend to be extremely inclusive, as in

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BOX 9.1 T. E. LAWRENCE ON IRREGULAR WARFARE

The writings of Thomas Edward Lawrence (1888–1937, better known as 'Lawrence of Arabia') have made valuable contributions to the development of irregular warfare theory. Many practitioners of the trade, from Mao Zedong to German special operations expert Otto Skorzeny, acknowledged the debt they owed to Lawrence in the development of their own thoughts. A quixotic character whose historical impact still remains the subject of much controversy, Lawrence captured the essence of a guerrilla struggle in less than 250 words:

It seemed that rebellion must have an unassailable base, something guarded not merely from attack, but from fear of it; such a base as we had in the Red Sea Ports, the desert, or in the minds of men we converted to our creed. It must have a sophisticated alien enemy, in the form of a disciplined army of occupation too small to fulfil the doctrine of acreage: too few to adjust the number to space, in order to dominate the whole area effectively from fortified posts. It must have a friendly population, not actively friendly, but sympathetic to the point of not betraying rebel movements to the enemy. Rebellions can be made by 2 per cent. active in a striking force, and 98 per cent. passively sympathetic. The few active rebels must have the qualities of speed and endurance, ubiquity and independence of arteries of supply. They must have the technical equipment to destroy or paralyse the enemy's organized communications, for irregular warfare is fairly Willisen's definition of strategy, 'the study of communication' in its extreme degree, of attack where the enemy is not. In fifty words: Granted mobility, security (in the form of denying targets to the enemy), time, and doctrine (the idea to convert every subject to friendliness), victory will rest with the insurgents, for the algebraical factors are in the end decisive, and against them perfections of means and spirit struggle quite in vain.

From T. E. Lawrence (1920), 'The Evolution of a Revolt', *The Army Quarterly*, Vol. 1, No. 1, p. 69.

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the case of the US Department of Defense's (DoD) bewildering outline of tasks that constitute MOOTW:

arms control; combating terrorism; DoD support to counterdrug operations; enforcement of sanctions/maritime intercept; operations enforcing exclusion zones; ensuring freedom of navigation and overflight; humanitarian assistance; military support to civil authorities; nation assistance/ support to counterinsurgency; noncombatant evacuation operations; peace operations; protection of shipping; recovery operations; show of force operations; and strikes and raids (Joint Warfighting Center, June 1995: III-1).

Alternatively, definitions may be exclusive, as in Donald Hamilton's eight-page exploration of the term 'insurgency' and the 38-page investigation of the constituent parts of terrorism in *Political Terrorism* (Hamilton, 1998; Schmid, Jongman, et al., 1988).

Terrorism is defined here as *the sustained use, or threat of use, of violence by a small group for political purposes such as inspiring fear, drawing widespread attention to a political grievance and/or provoking a draconian or unsustainable response*. Terrorism does not result in political change on its own, but is undertaken to provoke a response. If irregular warfare is the strategy of the weak against the strong, then terrorism is the strategy of the weakest groups who perceive that they have no alternatives to effect change. What separates terrorism from other forms of violence is that the acts committed can be legitimized by their political nature. Hijacking, remote bombing, and assassination are criminal acts in a civil society. When conducted in the name of a political cause that generates domestic and international sympathy, however, the legal status of such 'crimes' becomes a matter of debate. Terrorists want to make people look beyond horrific actions and consider the political message they are intended to convey. International support for the plight of the Palestinians, for example, diffused much of the outrage that might normally have been expressed at such acts committed in their name as the Lod Airport massacre in May 1972. The same cannot be said of those responsible for the demolition of the World Trade Center in September 2001. The World Trade Center was a potent symbol of American power, and many American lives were lost, but its destruction also indiscriminately killed the citizens of over 40 different countries. Any empathy with, or tolerance of the cause espoused by the terrorists disappeared in view of the callous and shocking way in which the buildings were attacked. Terrorism has been based on the need to generate domestic and international empathy for a plight that 'drove' the terrorists to arms. Without external empathy, support, or sponsorship, a terrorist cause is doomed.

Terrorism is distinguished from irregular warfare by the form that the violence takes. Terrorism seeks to bring awareness to a political grievance but rarely, if ever, results on its own in political change. Irregular warfare, by contrast, is an attempt to bring about political change by force of arms.

The principal difference between **irregular** and **conventional war** is that the latter involves adversaries more or less symmetric in equipment, training, and doctrine. In an irregular war, the adversaries are asymmetric in capabilities and the weaker side, usually a sub-state group, attempts to bring about political change by organizing and fighting more effectively than its stronger adversary. Individual irregular conflicts differ along their social, cultural, and economic dimensions and by type (revolutionary, partisan, guerrilla, liberation, or civil wars). Regardless of these differences, they all seek to obtain

political power. Irregular warfare also is characterized by the mobilization of a significant proportion of the population to support the insurgent movement. By contrast, **coups** are not a form of irregular warfare because they are revolutions conducted by a small elite against the government.

Definitions rarely convey the complexity of a subject in either theory or practice. For example, how does one classify the so-called '**urban guerrilla**' phenomenon and its ideological impact on terrorist groups during the 1960s? In addition, some terrorist groups adopt parallel efforts that are more commonly associated with insurgencies, such as 'nation building'. When terrorists change their operations, does their status change to insurgent, do they remain terrorists, or have they become something else? The Lebanese organization known as Hizbollah demonstrates the difficulties inherent in assessing irregular conflict. The group was responsible for spectacular acts of terrorism early in its history, including several high-profile kidnappings and the suicide bombings of the US Marine and French compounds in 1983. Yet members of Hizbollah fought a protracted guerrilla campaign against Israeli forces, forcing the latter's withdrawal from southern Lebanon after 18 years of sporadic conflict. Hizbollah also manages a substantial number of public service operations funded by Syrian backers and legitimate and illicit commercial operations. Hizbollah's evolution to better achieve its objectives is not unique. Terrorism and irregular warfare continue to change in ways that provide a challenge to policymakers and social scientists alike.

Subverting the system: The theory and practice of irregular warfare

Those undertaking irregular war or terrorism are trying to find a way to use their strengths, such as mobility, organization, anonymity, or stealth, against the weaknesses of their more powerful adversary. Bernard Fall made this point succinctly when he suggested that 'When a country is being subverted, it is being out-administered, not out-fought' (Fall, 1999, p. 55). But subversion is a time-consuming and resource-intensive activity that does not guarantee success. In almost every case, the length of successful and unsuccessful terrorist and irregular warfare campaigns is measured in *decades* not years. They achieve success by gaining an advantage over their adversaries in terms of time, space, legitimacy, and/or support.

These dimensions of conflict are not mutually exclusive and excellence in one dimension will not compensate for drastic shortcomings in the others. Regardless of the space and time available, for example, a terrorist or insurgent campaign will almost always fail if it cannot attract internal or international support. Like war and politics, insurgencies or terrorist campaigns are **dialectical struggles** between competing adversaries; outcomes are determined by the interaction between opponents (Gray, 1999, pp. 23–5). The goal for the irregular leader is to pit the organization's strengths against enemy weaknesses. The value ascribed by different writers to, and the perceived relationships between time,

space, legitimacy, and support create substantial variations in the theories of terrorism or irregular warfare. These theories often reflect the circumstances that are unique to specific conflicts, a fact that has contributed to failed government efforts to stop insurgents or terrorists. The unconsidered application of a theory based on one case history to another conflict can lead to disaster.

Time

Time is the most important element required for the successful conclusion of an insurgent or terrorist campaign. With sufficient time, an insurgent group can organize, sap the resolve of its adversary, and build a conventional force capable of seizing control of the state. Mao Zedong's theory organized time into three sequential phases: the strategic defensive, the stalemate, and the strategic offensive (see Box 9.2).

Each phase would lead one step closer to victory no matter how long the effort were to take. Mao once stated, for example (in 1963), that his forces had 'retreated in space but advanced in time'. Mao understood that the sequence of phases leading to victory was not necessarily linear; unforeseen circumstances could lead to setbacks and perhaps regression to a previous phase of the insurgency. Endless struggle without an obvious victory eventually leads to the exhaustion, collapse, or withdrawal of the enemy. The element of space works with time, providing insurgents with the leeway to manoeuvre and demonstrate their superior legitimacy to the population. Perceived legitimacy in turn will generate internal and external support for the insurgents. With popular support, insurgents will be able to raise a superior army, launch bolder attacks, and achieve victory.

Most irregular campaigns can remain unresolved for a substantial period of time: the insurgency waged by the Liberation Tamil Tigers of Eelam (LTTE) for political autonomy within Sri Lanka continues after 28 years. Occasionally, guerrilla struggles can end quickly. The most famous quick insurgent success is the Cuban revolution (1957–9). Led by Fidel Castro against the regime of Fuguenaldo Batista, this irregular war was concluded in just three years but featured incidents and actors of which revolutionary myths are made. A number of factors contributed to the rapid collapse of the Cuban government's forces; few states, however, are as corrupt, inept, and fragile as the Batista regime was in the late 1950s.

Although brittle adversaries that succumb to short irregular campaigns are rare, local circumstances can convince insurgents or terrorists to forgo a prolonged struggle. Carlos Marighella believed that the situation in Brazil in the 1960s demanded a response other than careful Maoist first-stage planning. The Brazilian Communist Party discussed plans for insurrection but Marighella argued in favour of immediate action. He thought time was not on the side of the insurgency: the Brazilian state grew stronger every month while the revolutionaries continued to do little. By taking action, Marighella believed that the 'urban guerrillas' would build a **critical mass**, catch the Brazilian authorities off guard, and provoke an extreme response. In other words, Marighella believed that the state of affairs within Brazil called for reversing the typical relationship between the guerrilla and time.

BOX 9.2 MAO ZEDONG, CHINA IN THE 1930s AND THE THREE-STAGE THEORY OF INSURGENCY

Mao Zedong (1893–1976) received an education, which was a rarity in China at the time. He obtained his first job in 1917, the year of the October Revolution in Russia, as a librarian at Peking University. Mao was an avid reader and began his revolutionary career as a peasant agitator, joining the Chinese Communist Party (CCP) in 1921. The CCP was working towards expelling foreigners and 'gentry' landowners. In 1928 the Chinese Nationalist forces (Kuomintang) went on the offensive and scattered the CCP. The few remaining 'comrades' retired to the mountainous Fukien-Kiangsi area and rebuilt their movement. In the wake of a disastrous urban revolution in 1930, Mao developed a theory on how to conduct irregular war in China. Chinese Nationalists resumed the offensive and drove the Communists out of their sanctuary, leading to the famous 'Long March' to Shensi province in 1933. The situation in China changed drastically in 1937. Not content with the acquisition of Manchuria, Japanese hawks within the Kwantung Army engineered the 'Marco Polo Bridge incident' as the pretext for invading China.

Mao's best-known works include 'Problems of Strategy in China's Revolutionary War' (1936), 'Problems of Strategy in Guerrilla War Against Japan' (1938), and 'On Protracted War' (1938), from which the following synopsis is derived:

- **Stage I, Strategic Defensive:** This stage is characterized by the avoidance of pitched battles with government forces. One key goal of the insurgents is to reach what Clausewitz termed 'the culminating point of victory': the adversary no longer has adequate forces to consolidate previous gains. Tactical offensives, with local numerical superiority, serve to tax government resources. The guerrillas establish moral superiority with the local population, carry out political indoctrination, and train new recruits to fight as irregulars in remote, safe bases.

- **Stage II, Stalemate:** The second stage begins the prolonged battle to reduce the government's physical and moral strength and assume de facto control over a larger segment of the population. Rebels target government control by killing or expelling local officials. The government shifts to the defensive and the insurgents exploit their advantage to force government troops from the countryside into towns and cities. With government presence in rural areas neutralized, the population can provide a base of supply. At this stage, the guerrillas must reject peace proposals and counter government efforts to divide or co-opt the guerrilla movement.

- **Stage III, Strategic Offensive:** In the end game of the conflict, the insurgents employ overwhelming force to destroy weakened government forces occupying defensive positions.

  From Mao Tse-Tung, *Selected Military Writings of Mao Tse-Tung* (Peking: Foreign Languages Press, 1966), pp. 210–19.

Space

Space allows irregulars to decide where and when to fight. If their adversary appears in overwhelming numbers, irregulars can make use of space to withdraw and fight again when the odds are in their favour. Defenders against sedition cannot be everywhere at once without spreading their forces too thinly and inviting attack from locally superior guerrilla forces.

The exploitation of formidable terrain that limits the manœuvre of government forces is a potent way in which lightly armed and mobile terrorists or insurgents offset their relative weaknesses in technology, organization, and numbers. Insurgents often have used difficult terrain for tactical advantage against foes ill equipped to deal with the challenges presented by mountains, jungle, swamps, and even deserts. For example, Afghan Mujahaddin guerrillas used mountainous terrain to ambush predominantly road-bound Soviet forces, just as their forefathers did against the British. Triple-canopy jungle limited US and South Vietnamese attempts to apply overwhelming manœuvres and fire-power against the Viet Cong and North Vietnamese forces. Urban terrain also can be an arduous obstacle as the Russians found in 1994. Chechen guerrillas used buildings and narrow roads to offset their weakness and isolate and destroy Soviet formations during the battle for Grozny. Difficult terrain provides insurgent forces with the opportunity to establish **safe areas** or bases from which to expand the struggle.

Force-to-space ratios also influence the course of insurgencies. If much territory needs to be defended by a government, terrorists or insurgents can compensate for their operational or strategic inferiority by massing their forces to gain a local numerical superiority. Government forces often attempt to defend territory or resources that have political, economic, social, or military value. More often than not, states have the resources to protect many local targets, but not every local target. Col. T. E. Lawrence, for instance, used the Arab force-to-space ratio advantage against the Turks to good effect during the Arab Revolt (1916–18). Given the amount of terrain to be covered, Lawrence calculated that the Turks would need 600,000 troops to prevent 'sedition putting up her head' across the entirety of the Transjordan, a figure six times larger than the forces available to the Turks (Lawrence, 1920, p. 60).

Force-to-space superiority does require irregulars to operate over huge areas. In the case of the guerrilla campaign conducted against the British in Cyprus, the nationalist group EOKA was limited to a space little more than 3 per cent of that roamed by Lawrence's forces. EOKA's leader, George Grivas-Dighenis, based his strategy on the assumption that substantial numbers of British troops would attempt to put down the insurgency. EOKA members operated in small groups and conducted ambushes, bombings, and assassinations. These actions convinced the British that the benefits of remaining in Cyprus were not worth the political and military price to be paid.

Support

Few insurgencies or terrorist campaigns succeed without some form of support. After all, only so much equipment can be manufactured or captured for use by the insurgents. Insurgents also must look after casualties and replenish their supplies. In addition, they must constantly update their intelligence on the whereabouts and activities of government forces. They have to train new recruits. Support, however, is linked to perceptions of the organization's legitimacy. Violence conducted without a comprehensible political purpose will generate little popular support. Without support, insurgents and terrorists will eventually succumb to the efforts of the state. Clausewitz suggested that support, in the form of public opinion, was one of the centres of gravity in a popular uprising (Clausewitz, 1993, p. 720).

Insurgents and terrorists can look for support from both domestic (internal) and international (external) sympathizers. Almost all theorists agree that substantial popular support is required to compensate for the resources available to the state. Even Carlos Marighella, who believed initially that urban guerrillas could find and seize the necessary resources in major towns and cities to sustain the struggle, eventually relented and recognized the need to cultivate rural popular support. Domestic support can be forced from the population using terror and intimidation, but long revolutionary struggles cannot rely exclusively on such measures.

Although it is now a cliché, Mao's analogy describing the relationship between the guerrilla and the people is still evocative. The guerrillas were likened to 'fish' that swim in a 'sea' of popular support. Without the sea, fish will die. A dramatic example of the consequences of failing to cultivate popular support is the fate of Che Guevara. Guevara believed that conditions in Bolivia in 1967 were ripe for a guerrilla insurrection led by his '*foco*' (see Box 9.3). He overestimated, however, the amount of support he could receive from local communists and farmers in Bolivia. The Bolivian Communists were hostile to outside advice on how to run their revolution. The local peasants also were indifferent to the message preached by Guevara. Guevara and his '*foco*' lacked popular support; the insurgents were either killed or captured within seven months of the first shots being fired.

BOX 9.3 **ERNESTO 'CHE' GUEVARA AND THE THEORY OF THE *'FOCO'***

Argentinian-born Ernesto Guevara de la Serna Rosario (1928–67) was educated as a medical doctor. Ernesto spent much of his time after graduation travelling throughout Latin America where he gained an appreciation of the stoicism of the Latin American peasantry. He also became aware of the huge disparity between the wealth of the substantial number of American companies in the region and the poverty of the average peasant. After his political awakening, he travelled to Mexico where he met Fidel Castro and helped train Cuban exiles for their revolutionary struggle. 'Che', as he is popularly known, was a member of the Granma expedition that landed in Cuba in November 1956. He served as Castro's political adviser and later as a field commander. His major work, *Guerrilla Warfare*, was published two years after the end of the Fidelista revolution. Che subsequently worked within the Ministry of Industries but disagreed with Castro over the direction Cuban socialism should take. Failed attempts to foment revolution in the Congo (1965) and finally in Bolivia (1966–7) led Che to his death in a Bolivian jungle in 1967.

Che's contribution to irregular warfare theory (articulated most effectively by Regis Debray) is the idea of *foco* (i.e., the centre of gravity of the guerrilla movement). The *foco* refers to the initial critical mass of the guerrillas, the vanguard of the revolution, from which all else is derived. *Foco* also represents the political and military 'heart' of the insurgency, and from it Guevara and Debray concluded that *the guerrilla movement itself* can generate the conditions for a revolutionary victory (the title of a book by Debray reflects this shift: *Revolution in the Revolution?*). They believed that guerrilla success would eventually 'inspire' local peasants to support the revolution, allowing the organization to grow in strength.

Source: C. Guevara, *Guerrilla Warfare*, 3rd edn. (Wilmington, DE: Scholarly Resources, 1997), and R. Debray, *Revolution in the Revolution?* (London: Pelican, 1968).

Support also is contingent on the circumstances within a specific country. A danger exists in trying to reproduce success elsewhere using a previously effective revolutionary formula, without first identifying the specific base of potential popular support. The uprising of the urban proletariat was considered a necessity in Marxist-Leninist revolutionary theory but failed dismally when attempted in China (1930) and Vietnam (1968). The agrarian character of China and Vietnam doomed urban revolts to failure; in both states most of the rural population were peasants. As a result, Mao Zedong and Vietnamese General Vo Nguyen Giap modified their strategies and were successful.

External support for irregulars largely depends on both the geography of the country and the political relations maintained by the insurgents or terrorists. Such support can be material, in the form of resources or crossborder sanctuaries, or moral, in the form of political recognition and lobbying. Many Marxist terrorist groups during the 1970s, such as the German Rote Armee Faktion, received material support from the Soviet Union or its client states. Tangible support included money, advanced weapons, and training. Insurgent and terrorist leaders in countries ranging from the Dutch East Indies (later to become Indonesia) in 1950, and British Palestine (later to become Israel) in 1948, received external moral support that tipped the balance in their favour. States harbour or support terrorist groups for reasons of political expediency and to suit policy goals, as opposed to genuine sympathy for the cause espoused by the terrorists. The ruling authorities in Jordan and Afghanistan made decisions regarding the relative political cost of providing sanctuary for their respective 'guests': the Palestinians in Jordan (1970) and Osama bin Laden under Taliban protection in Afghanistan (2001). In addition, irregulars can serve to fight proxy wars against the patron's rivals. The proxy war in Kashmir between India and Pakistan also demonstrates that irregulars can fight limited wars for limited purposes, especially when the threat of nuclear war or conventional escalation is high.

Legitimacy

The use of armed force without a moral cause or reasonable justification will not be popular. Strong democracies can experience public discontent over the use of air power, for instance, but they will survive even if political unrest provokes a change of administration. The same cannot be said of terrorism and irregular warfare, where internal or external support is required to sustain the struggle. Terrorists and insurgent leaders need to convey the reason for their actions or lose sympathy for their cause. Terrorists and irregular leaders often seek to legitimize their use of violence and translate this into meaningful support for their cause by demonstrating moral superiority over those who represent the state; supplanting the functions of the state at the local level; and, by spreading a persuasive political message.

The moral superiority of the guerrillas is a cornerstone of all irregular and terrorist theory. Insurgents derive support from the people and they often cultivate their relationship with them. Mao went so far as to outline a 'code of conduct' for the guerrillas, known as 'The Three Rules and Eight Remarks', as a way to demonstrate their **moral superiority** (see Box 9.4). The most important job of the guerrilla is to demonstrate this moral superiority in routine functions so that the people differentiate the guerrillas from

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BOX 9.4 MAO's 'THREE RULES AND EIGHT REMARKS'

Rules

1. All actions are subject to command.
2. Do not steal from the people.
3. Be neither selfish nor unjust.

Remarks

1. Replace the door when you leave the house.*
2. Roll up the bedding on which you have slept.
3. Be courteous.
4. Be honest in your transactions.
5. Return what you borrow.
6. Replace what you break.
7. Do not bathe in the presence of women.
8. Do not without authority search the pocketbooks of those you arrest.

*The translator of this edition of Mao's work, retired US Marine Corp Brigadier General Samuel B. Griffiths, notes that 'In summer, doors were frequently lifted off and used as beds.'

Mao Tse-Tung, *Mao Tse-Tung on Guerrilla Warfare* (New York: Praeger, 1961), p. 92.

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bandits or 'counterrevolutionaries'. Che Guevara insisted that the peasants understand that the guerrillas were as much social reformers as they were protectors of the people.

Peasants who co-operate with insurgents often face harsh retaliation from the government, but frequently this only further legitimizes the revolutionary cause. Abdul Haris Nasution, military leader of the various Indonesian guerrilla actions against the Dutch from 1945 to 1949, described the vulnerability of peasants in a guerrilla war:

It is common practice that an occupation army takes harsh measures against sabotage. Collective punishment, extensive torturing, even the elimination of whole kampongs [villages] and the machine gunning of the people on a mass basis is common. Therefore, a people at war must be prepared for all the consequences so that the people's spirit will remain unbroken and will allow the guerrilla army to launch even harsher measures against the enemy (Nasution, 1965, p. 35).

Disproportionate government responses to suspected collaboration only drives people into the arms of insurgents. Government brutality also allows insurgents to act as the avengers of the people, helping to cement the ties between them. Carlos Marighella, for example, hoped that the actions of the Brazilian authorities would demonstrate conclusively that the 'government is unjust, incapable of solving problems, and that it resorts simply to the physical liquidation of its opponents. The political situation in the country is transformed into a military situation in which the "gorillas" [counterrevolutionary forces] appear more and more to be the ones responsible for violence, while the lives of the people grow worse' (Marighella, 1969).

Of course, admonitions to behave better than government troops often are applied only to those who actively assist insurgents in their struggle. In a number of irregular conflicts, guerrillas and government forces alike regarded an unwillingness to help as

aiding and abetting the enemy. Absolute popular support can never be guaranteed. Populations invariably split into willing assistants, staunch foes, and the undecided majority. To help make up the minds of the undecided, insurgents can demonstrate legitimacy by becoming the de facto government in areas under their control. This can include taking 'positive' measures such as the establishment of schools and clinics or 'negative measures' such as tax collection. The use of terror as a negative measure to intimidate the population is a matter of debate in irregular warfare theory. For Che Guevara, terror tactics were unjustified because they invariably delegitimize the guerrilla's message. Both Mao and Marighella disagree, noting that acts of terror may be necessary to convince the population of the occupational hazards of working for the government, or to provoke a repressive response. In practice, extensive discussion often proceeded and followed rural acts of terror. The Viet Cong, for instance, generally went to great lengths to provide a justification for their repressive actions during the Vietnam war (1960–75). Negative measures backed by proselytizing can help legitimize the insurgents by showing the local populace that the government can no longer protect them.

The most powerful method of legitimizing a struggle is to link military operations with a justifiable political end. Causes vary, but self-determination has been the most pervasive and successful rallying cry. Given the fundamental rights outlined in the Atlantic Charter (1941) and the United Nations Charter (1945), it was difficult for nations such as Great Britain, France, the Netherlands, and Portugal to retain possession of overseas colonies in the face of native insurgencies claiming the right to self-governance. Leaving aside the ideological dimension of the Rhodesian insurgency (1965–80), few could argue against the cause of (black) majority rule. More recently, the legitimacy of the East Timorese claim to independence led to internal and external pressure on the Indonesian government to end a 25-year occupation. Other successful causes blend social, cultural, and economic issues into a powerful political message that the government or an international audience finds difficult to counter or resist.

KEY POINTS

*   Terrorism and insurgencies can be examined in terms of time, space, legitimacy or support, reflecting specific, local contexts rather than predetermined goals attributed to a general theory.

*   Time is an important element in the success of insurgencies, involving a non-linear progression that includes: the space to manoeuvre and to gain legitimacy and/or support, all of which are necessary for eventual victory.

*   Terrain is important to offset weaknesses and to gain tactical advantages by changing the 'force-to-space' ratio of the adversary.

*   Support is dependent on legitimacy: derived internally from interaction with the local populace and externally via resources from allies and sympathizers.

*   Moral justification provides the cornerstone to sustain the struggle, usually blending cultural and social causes with political ends.

Protecting the system: Counterinsurgency and counterterrorism in theory and practice

The difficulties facing governments besieged by insurgents or terrorists may seem insurmountable at first glance, but numerous works have been written to explain how to quell them. This literature ranges from general theories and practical suggestions, based on hard-won experience, to complicated empirical models purporting to predict outcomes or test practical advice. Commentators have reduced complicated political-military struggles against forceful usurpers to a number of principles or formulas for success (see Box 9.5). Brigadier General Samuel B. Griffith suggested in his translation of Mao's *Yu Chi Chan* that 'antiguerrilla operations could be summed up in three words: **location, isolation, and eradication**' (Mao Tse-Tung, 1961, p. 32). Griffith's summary is a useful reference point for exploring how to apply the strengths of a state (or group of states) against an irregular threat.

Location

The most important phase of any counterinsurgency or counterterrorism campaign is recognizing that the threat exists. Counterinsurgency expert Robert Thompson believed it necessary to tackle an insurgency during its subversion and organization phase or at the first signs of a sustained campaign of violence (Thompson, 1966, p. 50). In other words, he believed it necessary to defeat insurgents in both physical space *and* time. The problem for counterinsurgents and counterterrorists is to apply theory to distinguish between lawful or unlawful forms of discontent. Restricting guaranteed rights and freedoms every time a bomb is detonated will undermine the credibility and intentions of the government. Waiting too long to uphold the rule of law, however, will give the insurgents or terrorists the necessary time to build a robust organizational infrastructure that only the most dedicated efforts might hope to defeat.

Terrorism and insurgency can be staved off with enough early warning, but this implies that an effective intelligence-gathering and assessment organization is operating. Few states possess such resources or foresight. Subversion, therefore, remains an attractive option for the discontented. Those willing and able to destroy the system need to be identified and tracked: this requires the assistance of a supportive populace. The question in pluralist systems is whether or not *potentially* seditious individuals can be taken under surveillance or arrested without violating civil liberties and undermining the rule of law.

Upholding the rule of law is crucial if states are to preserve the legitimacy of their cause and maintain the moral high ground over insurgents or terrorists (Clutterbuck, 1990, pp. 10–11; Wilkinson, 1986, p. 127). Methods to counter terrorism, for example, must be as unobtrusive as possible. Consider airport metal detectors. They can help prevent terrorism while remaining within the boundary of the rule of law. Most of us regard metal detectors as an inconvenience and a necessary evil to prevent the smuggling of weapons on board commercial aircraft. Newly developed scanners can show concealed items through clothes. But the public has expressed outrage at potential infringements upon

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BOX 9.5 **PRINCIPLES, PREREQUISITES AND LAWS OF COUNTERINSURGENCY AND COUNTERTERRORISM (MATERIAL QUOTED FROM SPECIFIC TEXTS)**

Charles Callwell: Guiding principle of small wars from *Small Wars: Their Principles and Practices* (1899)
• 'Over-awing the enemy by bold initiative and by resolute action, whether on the battlefield or as part of the general plan of action' (p. 4)

Charles W Gwynn: Principles from *Imperial Policing* (1934)
• Policy remains vested in the civil government
• Minimum use of force
• Firm and timely action
• Co-operation between civil and military authorities

Robert Thompson: Principles of counterinsurgency from *Defeating Communist Insurgency* (1966)
• Clear political aim
• The government must function in accordance with law
• The government must have an overall plan
• The government must give priority to defeating the political subversion, not the guerrillas
• The government must secure its base areas first (in the guerrilla phase)

David Galula: Laws of counterinsurgency from *Counter-Insurgency Warfare* (1964)
• Support of the population necessary
• Support gained through an active minority
• Support from population is conditional
• Intensity of efforts and vastness of means are essential

Samuel Griffith: Summary of anti-guerrilla operations in *Mao Tse-Tung on Guerrilla Warfare* (1961)
• Location
• Identification
• Eradication

John McCuen: Counter-revolutionary strategy forms from *The Art of Counter-Revolutionary Warfare* (1966)
• Counter-organization
• Counter-terrorism
• Counter-guerrilla warfare
• Counter-mobile warfare

Julian Paget: Prerequisites for fighting the insurgents from *Counter-Insurgency Campaigning* (1967)
• Essentials for counterinsurgency operations: civil-military understanding; a joint command and control structure; good intelligence; mobility; and training
• Defeating insurgents: support of the local population; bases; mobility; supplies and information; and the will to win
• Winning hearts and minds

BOX 5.4 continued

Frank Kitson: Framework for an effective counterinsurgency campaign from *Bunch of Five* (1977)
- Good coordinating machinery (between civil and military agencies)
- Establishing the sort of political atmosphere within which the government measures can be introduced with the maximum likelihood of success
- Intelligence (right information = sensible policy)
- Law (upholding the rule of)

Friedrich August Frhr. Von der Heydte: Measures to fight guerrillas from *Modern Irregular Warfare* (1986)
- Preventative
- Intelligence
- Repressive
- Constructive

Paul Wilkinson: Prerequisites for a successful counter-terrorist strategy from *Terrorism and the Liberal State* (1986)
- Upholding the rule of law without adopting totalitarian methods; all assets under civil control (military and civilian); no concessions / no deals
- Development of high-quality intelligence *long before the insurgency surfaces*; need to coordinate resources

Richard Clutterbuck: Countering destabilization and insurgency in *Terrorism and Guerrilla Warfare: Forecasts and Remedies* (1990)
- Rule of law (to be preserved)
- Intelligence (tactics formed around)
- Security (tactics formed around)

Bard O'Neill: Evaluative criteria from *Insurgency & Terrorism: Inside Modern Revolutionary Warfare* (1990)
- Environment
- Popular support
- Organization and cohesion
- External support

personal privacy out of proportion to the perceived threat. Managing how and when (and in what measure) to begin counterinsurgency and antiterrorism efforts, such as imposing curfews and controlling media access while upholding the rule of law, is the primary challenge to any government under siege. In most democratic societies, however, steps to counter terrorists rarely are preventative and almost always are taken *after* horrific acts of violence have been committed, as Washington's response to the September 2001 terrorist attacks demonstrates.

Once an irregular threat has been identified, various civil and military agencies must localize the threat while co-ordinating their response. They must identify safe houses, group members, and sources of supply. Gathering such information about the terrorists can be daunting, given the desire of most subversives to keep the organization small, stealthy, and secret. For a state providing direct counterinsurgency or counterterrorism support into a geographically and culturally unfamiliar country, as the United States did

in South Vietnam, obtaining even basic information on subversives takes time. The time gained is used by insurgents to retain the initiative and develop the organization further.

Isolation

Isolating insurgents and terrorists from their bases of support is probably the most important element of successful campaigns against them. Isolation can take the form of physical separation or political alienation. Physical separation can be achieved by moving villagers into more easily defended compounds, known in Malaya and Vietnam as 'strategic hamlets'. Preventative measures such as curfews, prohibited ('no-go') areas, food rationing, aggressive patrolling, and overt presence also can physically isolate insurgents. As with any form of **deterrence**, the threat posed by patrolling and presence must be a credible one and not consist simply of half-hearted 'cordon and search' operations. Isolation also means limiting the mobility and range of the insurgents or terrorists, in effect taking away their space and their time. Insurgents and terrorists also can be cut off from their external sources of support by a combination of diplomatic pressure and military measures. The French managed to block external support from reaching the Armée Liberation Nationale during the Algerian insurgency (1954–62): the border between Algeria and its neighbours Morocco and Tunisia was shut down by a combination of wire barriers, guardhouses, and patrols.

Segregating insurgents and terrorists from the population involves more than just physically separating them. To impose meaningful isolation, the state must defuse the irregular's most powerful asset: its political message. Widely held grievances that foster a potent source of recruitment and support must be mitigated by the government. Obviously, some messages are more influential than others: self-determination is difficult to counter by an external or occupying power, whereas demands for land reform or increased political representation can be more easily satisfied. The words of the government must be accompanied by effective deeds to show that the state can and will respond to what amounts to political extortion. The terrorist or insurgent 'propaganda of the deed' must be diffused by government displays of a firm, yet lawful response. The displays can range from enforcing a 'no negotiations with terrorists' policy to simple measures like improving crop yields or building schools and wells. The onus is on the representatives of the state to prove that they are *morally superior* to the guerrillas and terrorists and will provide for the needs of their citizens, including responding to the sources of disgruntlement that led to armed insurrection in the first place. Likewise, the terrorist or insurgent cause must be discredited. Leniency also should be extended to those insurgents and terrorists who give up the armed struggle. Above all, citizens must be convinced that the state's fight is their fight. Popular support for the terrorists or insurgents must be denied through credible and efficient actions to win what Sir Gerald Templar called '**the hearts and minds**' of the population (see Box 9.6). With little internal or external sustenance flowing to the rebels and a population willing to support the government, it is only a matter of time before the state's forces destroy the irregular threat.

Eradication

Eradication involves the physical destruction of the insurgents or terrorists, although few would go so far as to follow Robert Taber's rhetorical advice: 'There is only one means of defeating an insurgent people who will not surrender, and that is extermination. There is only one way to control a territory that harbors resistance, and that is to turn it into a desert' (Taber, 1972, p. 11). The state has numerous advantages over its opponents given its control over social, fiscal, and military resources. The most important question in democratic states is whether or not the leaders of the state can apply their resources effectively to extinguish the insurgent flame without alienating popular support for their own authority. Cultural context matters when determining a response. Canadians, for example, would not approve of measures like the so-called 'Wrath of God' retribution campaign conducted by the Israelis against those responsible for the massacre at the 1972 Munich Olympic Games. Counterinsurgency theory is rife with active plans that discuss destruction of guerrillas. These plans range from French Marshal Lyautey's innocuous-sounding 'oil patch' method applied in Morocco in the first quarter of the twentieth century (Gottman, 1948, p. 248) to the more sinister-sounding Nazi German 'spider's web' and 'partridge drive' tactics (Dixon and Heilbrunn, 1962, pp. 215–16). All theorists agree that eliminating the insurgents' safe havens must be a priority. Numbers also make a difference. The accepted ratio of government forces to guerrillas is often cited as 10:1. Most theorists also assert that specialized units (e.g. special forces) are needed to defeat the irregulars at their own game. Some advocate the use of technologies not available to the insurgents, such as helicopters and remote sensors, to enhance the force-to-space balance between government and irregular forces and to achieve superior mobility.

There also are passive ways in which the state can subvert an insurgency and thereby diminish the number of guerrillas or terrorists. One such method combines psychological

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BOX 9.6 'HEARTS AND MINDS'

The phrase 'the battle for hearts and minds' underscores the *political* dimension of irregular warfare. During the early stages of the Vietnam, or Second Indochina war (1965–75), the South Vietnamese guerrillas, or Viet Cong, tried to win the conflict by coercing peasants into joining or assisting the revolt. Coercion took forms as divergent as public executions and village propaganda sessions. The former would sow fear among those who were thinking of supporting the government whereas repetitive proselytizing played upon the audiences' aspirations, such as the desire for land reform or to find an escape from the tedium of village life. The response of one particular peasant illustrates the pervasiveness and influence of politics in irregular warfare:

In the beginning I was very hurt and angry with [the Viet Cong] for killing my father . . . they told me that because my father had done wrong, he had to be punished . . . *They talked to the point where I felt that they were right* . . . I came to hate my father even though I didn't know [exactly] what he had done (italics added).

　　J. C. Donnell, *Viet Cong Recruitment: Why and How Men Join*, RM-5486–1-ISA (Santa Monica, Cal.: Rand Corporation, 1967), p. 97.

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warfare techniques, promises of amnesty (e.g. the *Chieu Hoi*, or 'Open Arms' programme used in South Vietnam) and cash incentives (for weapons and information) to convince insurgents and terrorists that their struggle is in vain. Political and economic pressure can be placed on states or groups providing safe havens for terrorists and insurgents.

Passive and active techniques are not mutually exclusive and can be combined for a synergistic effect. During the bush war (1965–80) in Rhodesia (now Zimbabwe), for example, a sizeable number of guerrillas were persuaded not only to give up the armed struggle but also to operate against their former comrades. The **'pseudo guerrillas'**, as they were called, would dress as insurgents and patrol villages, gathering information on the whereabouts of active guerrilla units. Occasionally, 'pseudo guerrilla' groups would ambush guerrilla units, fomenting mistrust and, occasionally, provoking pitched battles among 'friendly forces' (Reid-Daly, 2000). Other passive measures include engaging in political dialogue with, and offering support for, moderates within an irregular organization, convincing them of the need to start talking and stop fighting.

Political will must underlie efforts to counter terrorism and insurgency. The eradication of an irregular movement is a gradual process of attrition that requires a significant and consistent investment in time and resources. Rarely have national leaders been able to sustain the political will necessary to defeat insurgents or terrorists. Equally daunting is the fact that the underlying causes of discontent often resurface and the embers of insurgency are rekindled in a different form. For example, the government of the Philippines conducted a textbook campaign to defeat a communist insurgency during the 1950s with US assistance and inspired leadership. Yet barely a decade later, the Philippine government faced a new challenge from Muslim separatist and hardcore Marxist guerrillas. Today Philippine leaders continue to struggle against groups such as the Abu Sayyaf, which sustains itself through a lucrative trade in ransoming hostages. Some commentators have suggested that terrorism and irregular warfare are analogous to the mythical hydra: cut off one head and several more appear in its place.

The effects of terrorism can be limited through a combination of offensive and defensive measures, but ultimately bringing terrorists to justice, especially for crimes beyond state borders, can be accomplished by a combination of determination to bring those guilty to justice, the political will to sustain the struggle and not compromise core societal values, and maximized use of the full range of response capabilities. The Bush Administration signalled its determination, and that of the American people, for the lengthy struggle against terrorism in the wake of the September 2001 attacks. In conjunction with this stated policy, various officials within the Administration emphasized that military action is only one tool in the toolbox of possible US responses. Direct military action has a certain utility but it will not stop terrorism alone; US efforts, and those of its allies, have focused all measures to root out terrorism, including the eradication of training facilities, financial assets, political sponsorship, and even the individuals themselves who belong to or support al-Qaida. Bringing individuals to trial for actions below the threshold of 'an act of war' takes even greater reserves of time, patience, resolve, negotiation, and treasure. It took the United States 12 years and considerable third-party support, for example, to bring those allegedly responsible for the Lockerbie bombing to trial.

KEY POINTS

- Methods used by the state in response to local threats are aimed crucially at maintaining a lawful, hence political/moral, legitimacy.
- The strategy of state success is based on isolating the insurgents both physically and politically.
- The eradication of insurgents is often a slow process and will take different forms in different political and cultural contexts.

Bringing the system down or thriving on its margins? The future of terrorism and irregular warfare

The supposition that terrorism and irregular warfare involve the use of force strictly for political ends recently has been challenged. Many commentators argue that the irregular conflict is no longer about politics. In other words, wars of national liberation, ideological terrorism, and revolution have joined colonial small wars in the museum of '**conflict past**'. Instead, some suggest that contemporary irregular threats are driven by a mixture of religious fanaticism, culture, ethnicity, or technology.

Religion + WMD = Apocalypse Now

Religious beliefs often have shaped terrorists' and insurgents' causes, and are used to gain legitimacy and support among the faithful. Osama bin Laden's al-Qaida network and the American Christian Identity movement are examples of this phenomenon. Throughout history, religion has been a powerful stimulus for political violence. In exchange for personal sacrifice, earthly representatives of some faiths promise terrorist martyrs a glorious afterlife for deeds such as crashing airliners into office towers. Walter Laqueur and others suggest that the threat to Western democracies is growing acute because certain religiously motivated groups might use weapons of mass destruction (WMD): biological, chemical, and even nuclear weapons (Laqueur, 1999).

The congruence of religion, WMD, and the belief that the end of mankind is at hand (**millenarianism**) portends a frightful and very real 'apocalypse now'. Brian Jenkins argued in the 1970s that terrorist use of nuclear weapons was unlikely because 'terrorists want a lot of people *watching*, not a lot of people *dead*' (Jenkins, 1987: p. 352). Modern religious fanatics, it is suggested, do not march to a political drum. Millenarians do not embrace political objectives and instead seek to purge non-believers and accelerate or launch 'the end of days'. Those who believe that millenarianism is a threat point to the ease with which chemical and biological agents, or 'poor man's atom bombs,' can be manufactured or acquired; the number of groups that are stockpiling lethal agents; the decreasing frequency but increasing lethality of terrorist acts; and the breaking of a so-called WMD taboo by the Japanese millenarian cult Aum Shinrikyo in Tokyo in 1995 (Laqueur, 1999).

Warriors, ethnicity, and non-trinitarians

Some observers suggest that in the future, irregular warfare will be incited by differences in culture, as opposed to religion. Westerners have been accustomed to warfare in which the combatants grapple with one another to achieve political aims. Recent experience, in places like Chechnya, Somalia, and the Democratic Republic of Congo, however, suggests that the warrior enabled by culture will face Western soldiers. According to this argument, modern conventional forces of volunteer or conscripted soldiers cannot match warriors forged for fighting by their culture (Peters, 1994). Proponents of this view suggest that the availability of modern small arms and disdain for Western rules of warfare give cultural warriors their military superiority. Political aims matter not to Somali clansmen, high on *khat*, driving around Mogadishu in heavily armed civilian vehicles. Warrior culture dictates goals—such as plunder, or killing to prove virility—instead of politics.

Some observers argue that in the future violence will be ethnic or identity based. According to Martin van Creveld (1991), the political basis for war (the Clausewitzian **trinity** of the people, the state, and the armed forces) is disintegrating. In van Creveld's view, states will cease to be viable political entities because they will not represent the will of the people. Under stress, these states will collapse into pockets of conflicting ethnic groups. Without a state to sustain the armed forces, the only surviving element of Clausewitz's trinity is the people. Conventional armed forces possess equipment useless in today's wars because it is too expensive, too fast, too indiscriminate, too big, too cumbersome, and too powerful (van Creveld, 1989). Major powers cannot benefit from conflict, but will spend much on defence to satisfy vested domestic interests. Sub-state actors will fight for profit and glory and industrialized countries will be unable to come to grips with this new manifestation of a very old form of violence. In van Creveld's analysis, chaos and mayhem will replace war in world affairs.

Cyberterrorists, infosurgents, and lone wolves

The Internet transcends borders, and therefore some observers believe that future irregular wars will be fought in cyberspace. Given the vulnerability of websites and servers to hackers, terrorists inevitably will become cyberterrorists through the World Wide Web. Serbian and Indonesian hacking of opponents' websites is a recent example interpreted by some as evidence that cyberwar is a reality. The defacing of NATO's and other websites during the 1999 Kosovo air campaign is only a glimpse of what ambitious cyberterrorists can accomplish. Policymakers fear that cyberterrorists and infosurgents will conduct electronic raids on vital national systems controlled by computers (e.g., financial services, transportation networks, and power grids). Fear is no longer based on the prospect of violence: information and the ability to control it has become a form of power.

Access to the Web and the portability of modern computer equipment will allegedly give new power to aspiring terrorists and insurgents. With a computer and a connection to the Internet, an individual can do more damage than armed terrorist cells or small insurgent movements. More importantly, the dream of a functional 'leaderless resistance' (Beam, 1992) can come true on the Web. Secretive individuals or small insurgent cells can

share information and co-ordinate action without a hierarchical organization that is vulnerable to penetration and subversion.

KEY POINTS

- The replacement by religious fanatics of the political with 'apocalyptic millenarianism' possibly portends the lethal combination of martyrs with weapons of mass destruction.
- Culturally inspired insurgents might change the nature of uprisings from traditional 'trinitarian' wars to chaotic ethnic conflict.
- The World Wide Web and readily available technology have introduced cyberterrorists, electronically hacking into state services, creating vulnerability in a world where control of information equals power.

Conclusion

States will be plagued by terrorism and irregular warfare as long as individuals are willing to use violence for political purposes. The shocking cultural details of irregular conflicts, such as the use of child soldiers in Liberia and Sri Lanka, can obscure the political purpose behind the fighting. Terrorism and irregular warfare have long been used to change political systems and acquire power; more recently, cultural schisms have led to a rise in terrorism carried out for religious and personal reasons.

Current re-evaluations of irregular warfare and terrorism often lack context. They highlight one dimension of irregular conflicts and ignore the overriding political reason for the conflict and the outcomes desired by the combatants. The rescue of British military personnel held hostage by the 'West Side Boys' in Sierra Leone in September 2000 was conducted ostensibly to ensure the safety of British nationals. Whether the 'West Side Boys' are harbingers of the 'new warrior class' or merely well-armed bandits is irrelevant. The rescue mission was intended to convey an unequivocal political message as valid today as it was during the punitive British expedition to Sierra Leone in 1899: an insult to British national pride would be wiped out, a wrong avenged, and an action would be taken to deter other groups from kidnapping British citizens (Callwell, 1899, p. 8).

Religion, culture, ethnicity, and technology remain important elements of irregular warfare. They define how and why individuals take up arms against perceived injustices. But the *ultima ratio* for the use of irregular methods of war is to achieve *political* results. US militia and patriot groups, for instance, hope to provoke a response to redress the *political* imbalance between what they perceive as illegitimate federal authorities and individuals' rights and freedoms established in the Constitution. Terrorist use of a weapon of mass destruction (WMD) is a frightening prospect. Yet Shoko Asahara, the spiritual leader of the Aum Shinrikyo cult, only attempted to use chemical and biological agents *after* his

political ambitions were thwarted in 1990. Revenge for his humiliation at the polls was perhaps the most significant reason for launching chemical and biological attacks.

Government officials have taken the threat of terrorist use of WMDs seriously; several governments have established rudimentary preventative and protective measures to counter perceived threats that terrorists will soon use WMD. For example, US spending on counterterrorism has gone primarily to establish a response mechanism to the possibility that terrorists may use WMD (see Chapter 11).

Warrior cultures may appear to espouse violence for its own sake but at the root of their struggle is the quest for political autonomy, control, or power. The protracted guerrilla war fought by the Chechens against the Russians is little different from the one conducted in 1856: the Chechens' desire is to gain political autonomy from Moscow. Somali warlords seek to gain political power and influence for their clans. Native Americans fought against the US Army in the nineteenth century to maintain autonomy and protect their traditional hunting grounds. Even ancient irregulars, classified as *barbarii* by the Romans, were resisting attempts to have *Pax Romana* imposed upon them.

The declaration that the Clausewitzian trinity is dead misrepresents its foundation and misconstrues the reasons why irregulars fight in the first place. After all, primordial violence (the people) serves no purpose unless it is subordinated ultimately to policy (the government). Purposeless violence is nothing more than a criminal act in civil society and should be treated as such. Even when violence is used to fulfil a policy goal, such as replacing or defending the ruling authority through force of arms, the outcome is uncertain. The reason for the uncertainty is that the combatants (the armed forces or irregulars) are prone to the effects of friction until their policy goals are achieved or subsumed.

QUESTIONS

1. Are the nature or characteristics of irregular warfare changing?
2. Can insurgents sacrifice the element of time in their efforts to achieve political change?
3. Why is the element of space easy to discuss in theory but difficult to incorporate into practice?
4. Why are irregular warfare theorists divided on the use of terror as a method of compelling support?
5. Why is there no universal theory of irregular warfare?
6. How is the balance struck between the rule of force and the rule of law on both sides of an irregular campaign?
7. Can insurgencies or terrorist campaigns succeed without the assistance of conventional forces?
8. Does the message matter in 'new' terrorism?

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www.terrorism.com/index.shtml This useful site, of the Terrorism Research Centre, has an excellent links section, including links to relevant reports and terrorism news.

www.baader-meinhof.com/index.htm This site (This is Baader-Meinhof) contains excellent information on the Baader-Meinhof group specifically and terrorism in general. It has a section for students and researchers as well as links to, or the complete text of, seminal works such as Carlos Marighella's 'Minimanual of the Urban Guerrilla': http://www.baader-meinhof.com/students/resources/print/manual.html

www.state.gov/www/global/terrorism/gt_index.html U.S. State Department—Patterns of Global Terrorism Annual Report. Archived from 1995 upwards, this contains valuable information and statistics as well as American perceptions of what constitutes terrorism and the terrorist threat.

www.csis-scrs.gc.ca/eng/miscdocs/othere.html Canadian Security Intelligence Service Documents and Reports. Contains several interesting reports, including the Annual Public Report and short papers on subjects such as trends in terrorism and a report assessing the WMD terrorist threat.

www.lbjlib.utexas.edu/shwv/shwvhome.html The Vietnam War Internet Project website. This website, created by John Tegtmeier, contains online documents, articles, images, and an extensive links page (http://www.lbjlib.utexas.edu/shwv/link-faq.html#phoenix) to military unit web pages, veterans' web pages, and online journals.

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PART FOUR

Contemporary Issues of Grand Strategy

10 Technology and Warfare

Eliot Cohen

READER'S GUIDE

Although the development and integration of technology into military forces and strategy is often depicted as a simple matter, the role of technology in war is controversial. Debate exists about the relative importance of technology when compared to other factors such as training or morale, in achieving victory in battle. Scholars also offer competing explanations about how and why certain technologies are integrated into military organizations while others are ignored. The pace of technological change also is not uniform: some technology and procedures become fixtures in militaries while others become obsolete quickly and are discarded. To complicate matters further, some observers today believe that the world is witnessing a revolution in military affairs, a relatively rare event when technologies are combined to produce a fundamental transformation in the way war is fought. This chapter explores these issues and describes some changes that the revolution in military affairs is producing in military organizations. It also offers some observations about the emerging technological trends that are likely to transform future warfare.

Thinking about technology: Technophiles and technophobes

Military historians—and sometimes soldiers themselves—cannot make up their minds about how to view military technology. Some technical experts and enthusiasts are fascinated by the nuances of the various models of the German Panzerkampfwagen Model IV; much contemporary policy debate centres on technical decisions—how many aircraft to buy, what type, over what period of time, and so on. The public at large tends to ascribe remarkable—sometimes even magical—properties to modern military technology.

By contrast, many military historians and soldiers deprecate the importance of technology. They believed that the skill and organizational effectiveness, not pieces of hardware, determine the outcome of battle. Although technical enthusiasts and sceptics sometimes clash in their assessment of a particular contest, rarely does the debate occur at a conceptual level. Only one major figure in the last century—Major General J. F. C. Fuller, a British war planner, pioneer of armoured warfare, and prolific military historian—attempted to write theoretically about the role of technology in strategic studies.[1] This chapter therefore introduces some concepts about military technology, and then discusses the key technological issues and trends of our time.

Some ways of thinking about military technology

Consider as a point of departure the question: 'Where does military technology come from?' We often think of technology as something predetermined. In this common view, scientists develop technology in war much like people walking down a corridor lined with closed rooms containing treasure chests. Progress consists of walking along the hallway, unlocking the doors, and picking up the chests. The fruits of technology, in other words, lie available to those who have the keys to the doors and the strength to carry away the treasure chests.

In fact, however, historians of technology and engineering usually reject this view. A variety of forces shapes technology, whose final form is far from being predetermined.[2] The most common view along these lines is that 'form follows function': military technology evolves to meet particular military needs. There are, however, other possibilities. One author, Henry Petroski, talks about 'form following failure', a concept first applied to his study of the history of bridge building, but applicable to military technology as well.[3] In this view, new technology emerges as a response to some perceived failure or fault in existing technology. Other theories of technological invention include the suggestion that technologies emerge from aesthetic or other non-rational considerations, such as custom or organizational convenience.[4] These different theories offer varying explanations of how innovation occurs or fails to occur. Why, for example, did it take more than thirty years for the United States, which successfully deployed unmanned aerial vehicles

(UAVs) in Vietnam, to introduce them into the armed forces? The technology may have been immature (the corridor-and-doors theory); there may have been no mission crying out for UAVs (form follows function); there may have been no visible failure in the existing technology (form follows failure); or, finally, the technology may have been thwarted by pilots hostile to the notion of aircraft without pilots (non-rational explanations).

No one of these theories is completely satisfying. Their very range, however, should prompt us to look more closely at how and why military technologies come into existence. There are distinctive national styles, for example, in military technology: the Israeli Merkava tank, differs subtly from American M1 Abrams. (See Box 10.1.) These changes reflect differences in design philosophy stemming from where the two countries believe they will fight (the slow Israeli tank is designed for the rocky Golan Heights; the much faster Abrams tank can exploit its high speed best in desert warfare). The Israelis have given exceptionally high value to crew safety. They accepted mechanical inefficiency by placing the engine in front of the crew space rather than (as is normal) behind it. In armoured warfare, most hits occur on the frontal armour of the tank, and the engine can thus absorb the impact of a hit. The Americans, by purchasing a fuel-hungry high-powered turbine engine, assumed that they could readily resupply their tanks with fuel in vast quantities on the battlefield.

National styles in technology may reflect political assumptions about war at the time that a design was frozen. In 2000, for example, the United States was poised to buy large numbers of the Joint Strike Fighter (JSF), a short-ranged fighter bomber. This decision reflects a political assumption, namely, that the United States would fight its wars within a few hundred miles of its opponents, and, presumably, with extensive access to secure fixed bases.[5]

One way to penetrate the essence of national design style is to ask what kind of trade-offs designers accepted. All engineers make choices among desired features of hardware; all pieces of military technology reflect those choices. A tank has three fundamental characteristics: protection, firepower, and mobility. Increase the amount of armour and one sacrifices the tank's ability to move quickly; put a small-bore, low-recoil cannon on it and one gains a great deal of mobility for a penalty in firepower; increase horsepower and pay a penalty in terms of the size of the tank (and hence protection) or how far it can go (and hence mobility).

Military technology also reflects processes of **interaction**. Tanks did not grow to be today's 60-ton monsters because of the growth of their power plants or guns. Developments in armour were to blame. Tank armour once consisted of rolled homogeneous steel. Today, it may consist of a variety of substances—exotic metals such as depleted uranium, composites that include alternating layers of metal and ceramics, and sandwiches of metal and high explosive. These changes reflect the development of ever more powerful antitank weapons—depleted uranium rods and so-called shaped charges (explosives configured to create a jet of hot metal that burns its way through armour). Even in peacetime, measure and countermeasure rule the choices designers make. These interactions create a kind of evolutionary process, by which a weapon system settles into its own 'ecological' niche. Birds and lizards evolve an amazing variety of counters to their predators, who in turn come up with a range of adaptations that enable them to find and

BOX 10.1 **THE M1A2 vs. THE MERKAVA**

	M1A2	Merkava (Mk3)
Weight (fully armed) (*tons*)	69.54	62.9
Length (gun forward) (*metres*)	9.8	8.8
Height (*metres*)	2.9	2.8
Width	3.7	3.7
Range (*miles*)	265	311
Crew	4	4
Road speed (*km/hour*)	90+	55
Main armament	120 mm	120 mm
Engine	Gas turbine	Diesel

Although similar in some respects, the Merkava is very different from the M1 in others. It is much slower (perhaps half as fast): the Israelis value absolute speed much less than the ability to manoeuvre under fire, particularly over the lava-strewn Golan Heights. They also lack the super-fast infantry fighting vehicles to keep up with the tanks. There is a rear hatch on the Merkava that allows the evacuation of wounded or resupply of ammunition without exposing the crew—again, requirements derived from the peculiar problems of keeping a firing line on the Golan Heights. Finally, the Israeli engine is at the front of the tank, where it can absorb an incoming round—a sacrifice of mechanical efficiency for crew protection. The M1 gets a similar effect by unusually good (and expensive) armour.

Sources, data: http://.army-technology.com/projects/merkava/specs.html
http://www.army-technology.com/projects/abrams/index.html specs
Note: the stated speed for the M1A2 is considerably too slow.

devour their prey. So too with weapon systems. As in nature, interaction may yield odd outcomes, where one kind of highly sophisticated adaptation to a particular environment makes a platform utterly unsuited to a different battlefield. The first two generations of stealth aircraft, for example, evolved to avoid detection through the use of adroitly shaped surfaces that would disperse or absorb radar energy: they were difficult (not impossible) to detect using the radar technology of the time. Their odd shaping, however, made them slower and less manœuvrable than other aircraft; they have therefore become nighttime-only systems that would be vulnerable to optical detection during the day.

In assessing military technology one should look at **invisible technology** as well. What gave the German tanks an edge over their French counterparts in the Second World War, for example, was not superior armour, guns, or engines, so much as a piece of technology barely noticed by outside observers—the radio.[6] Often, the most important elements of a military system are not the ones most evident to the casual observer, yet mastery of such technologies may weigh most in battle. American forces in the southwest Pacific in the Second World War struggled not only with the Japanese, but also with disease. The insecticide DDT, as much as any bomber or battleship, won the fight for New Guinea.

One should consider the role of **systems technology** and not just its parts. A novelist described a Second World War warship this way:

One way of thinking of the ship was as of some huge marine animal. Here on the bridge was the animal's brain, and radiating from it ran the nerves—the telephones and voice tubes—which carried the brain's decisions to the parts which were to execute them. The engine-room formed the muscles which actuated the tail—the propellers; and the guns were the teeth and claws of the animal. Up in the crow's nest above, and all round the bridge where the lookouts sat raking sea and sky with their binoculars, were the animal's eyes, seeking everywhere for enemies or prey, while the signal flags and wireless transmitter were the animal's voice, with which it could cry a warning to its fellows or scream for help.[7]

As the war progressed, the brain of the ship vanished into its bowels, so to speak—becoming the combat information centre of modern vessels. But Forester's point was that the effectiveness of the ship rested not simply on the working of all the different technologies individually, but rather on their effectiveness as a whole. The very use of the term weapon *system* implies that the art of putting technologies together is more important than their individual excellence. In war, more than in most other activities, the whole can be far greater than the sum of its parts.

Our last concept is that of the **technological edge**. It is not always decisive, but it is almost always important. J. F. C. Fuller once suggested that Napoleon himself would have succumbed to the semi-competent British general in the Crimea, Lord Raglan, simply because the latter's army had rifles, while the former had smoothbore muskets.[8] It is only recently that the advanced powers have assumed that they would go to war with a decided technological edge over their opponents, and that this advantage would prove decisive. Technological superiority does not necessarily extend across the board. In the Persian Gulf war of 1991, for example, some Iraqi artillery pieces (their South African made G-5 howitzers) outranged Western counterparts such as the American Paladin system, by 6 kilometres or more (30 vs. 24 km, to be precise)—much as Russian-made 122 mm guns outranged their American 155 mm counterparts in Vietnam.[9] The poorer, smaller, or weaker side may have some niche competencies that will surprise a richer and more powerful opponent. The technological edge may be dramatic (the quintessential case being the Dervish armies of the Khalifa crumpling under the fire of Lord Kitchener's Anglo-Egyptian infantry using the Henry-Martini rifle), or quite subtle—a matter of a few seconds' difference in the flight time of an air-to-air missile, or a few hundred yards in the effective range of a tank gun. The technological edge may have a psychological dimension that vanishes over time, as with Second World War-era German dive bombers with their unearthly wailing sirens, or American heliborne infantry in Vietnam appearing from the skies in remote jungles; or it may reflect fleeting disparities in commercial technology (e.g. commercial Global Positioning System navigation receivers purchased by Americans, but not Iraqis, in the Gulf war).

KEY POINTS

- There are a range of different theories about how military technology develops.
- Military technologies often reflect different national styles.

- Different national styles are determined by a variety of things, such as political assumptions, trade-offs between various features of hardware, processes of interaction, invisible technologies, systems technology, and the search for technological edge.

Mapping military technology

It can be difficult enough to understand military technology when it remains static: the authors of novels about the Napoleonic era war at sea, such as Patrick O'Brian or C. S. Forester, have a considerable challenge (which those two meet wonderfully well) in describing the complex technology of early nineteenth-century naval warfare. But the problem of understanding military technology is more difficult because it changes continuously. Indeed, since the middle of the nineteenth century, change in military technology has become a constant, through what Martin van Creveld has called 'the invention of invention'. The traditional picture of soldiers suspiciously rejecting new technology in favour of old standbys was always overdone: before the First World War, for example, the armies of Europe embraced the machine gun and the aeroplane. Their difficulty lay, and lies today, in recognizing what broader changes new technology may entail. For powerful institutional reasons, military organizations tend to fit new technologies into old intellectual and operational frameworks.

One question to ask in assessing technological change is whether what one is witnessing is a change in **quantity** or a change in **quality**. It is a more complicated question than it might appear. Marginal increases in speed, protection, mobility, or payload, to take just a few design parameters, are quantitative: they may have cumulative effects, but in and of themselves should not bring about radical changes in war. Sometimes, however, a seemingly quantitative change is, in fact, qualitative. Early firearms, for example, delivered rather less effective lethality than a good long bow; oil-fired ship engines offered moderate increases in speed over their coal-powered counterparts; and the first generation air-to-air missiles provided only marginal improvements over a well-aimed burst of cannon fire. All of these changes, however, foreshadowed tremendous upheavals in the conduct of war. Mastery of the long bow could take a lifetime. Mastery of the musket took a few months of drill, and its incidental qualities—the noise, smoke, and flash, none of which had direct effects on the enemy—made it a more fearful, i.e. psychologically effective, weapon. Oil propulsion reduced the size of crews, increased the speed of ships, and, perhaps most importantly, made the world's oil fields prime strategic real estate. Air-to-air missiles improved far beyond the capability of mature aircraft cannon, to the point of engaging targets well beyond visual range.

Contemporary observers will often get it wrong. Military organizations (the US Navy in particular) had experimented with satellite-based navigation systems since the early 1960s.[10] It took the experience of the Gulf war in 1991, however, to make average sailors, pilots, and soldiers realize that the **Global Positioning System** could transform all

aspects of navigation from art to science, or rather mere technique. By contrast, the advent of nuclear weapons in the late 1940s and 1950s convinced some professionals that all military organizations would have to be radically restructured to accommodate the new weapons. As it turned out, however, only selected military organizations needed to adapt their tactics and structures to the new devices.[11]

Military organizations and platforms do not change at a uniform rate. Some aspects of military technology change very little over the decades. Visit an aircraft carrier's deck, and one is struck by how little many procedures have changed in half a century. Steam catapults—themselves solid pieces of mid-twentieth-century engineering—loft jet aircraft off angled decks devised shortly after the Second World War. The crews, in multicoloured jerseys, each of which identifies their function, work pretty much as their fathers did during the Korean war. Inside, the Air Boss and his (or her) staff track the movement of aircraft using model aeroplanes on a large flat table; below decks illuminated glass grids show the status of all aircraft. There are important changes—more accurate and powerful bombs, far better intelligence flowing in, better aircraft—but the structure is remarkably durable. The same might be said of a battalion of paratroopers ready to drop on an airfield and seize it. Their aircraft, C-130s designed in the early 1950s and first fielded in 1956, are crammed with men carrying parachutes whose fundamental design goes back to the Second World War.[12] The process of training, loading, and deploying those men remains, in its essentials, the same.

Some military processes change to a considerably greater extent. A large desert armoured battle, for example, bears some resemblance to the clashes of the Second World War: masses of ponderous armoured beasts manœuvring over open ground, generating vast clouds of smoke and dust, swirling in a mêlée where the advantage goes to the quicker shot and calmer head. But much has changed, too. Today's armoured battle might take place at night, using thermal imaging devices that are in many ways better than optical sights even on a clear day. This is a far cry even from the night battles of the 1973 Yom Kippur war, in which Syrian tanks using crude infrared projectors attacked after daylight; for the modern armoured force, there is no important difference in visibility between day and night. The armour, gun power, and speed of the tanks today are much greater than during the Second World War, as is tank size. Those are important quantitative changes, but the biggest shift is in the accuracy of their weapons. A well-calibrated gun, with even a moderately competent crew (aided by laser range finders and ballistic computers) can score a first-round hit at a distance of several kilometres—a significant change in the way tank battles are fought.

Sometimes there are changes that fundamentally alter war fighting. The first night of an air operation, for example, is now completely different from what occurred during the Second World War, Korea, and Vietnam. In one or two nights a competent air force can shut down an enemy's air defence system, rather than wearing it out by a process of attritional struggle with defending fighter aircraft. Precision weapons—now ubiquitous in the arsenals of developed countries—mean that an initial attack can, in theory at least, prove paralysing. It is not the case that air power can do more efficiently that which it did in the past—it can do things that it never could have done before. Thus, for example, with adequate intelligence and planning, a well-conducted air strike can cripple a

nation's telecommunications system, in part by attacking targets (relay towers or switching centres) that previously were not susceptible to mass attack.

KEY POINTS

- One of the problems of understanding the role of military technologies is the constant process of change that takes place.
- One difficult issue concerns the relationship between qualitative and quantitative change.
- Another difficulty is that some technology is slow to have an effect, while some is much more immediate and radical in its impact.

The revolution in military affairs debate

When a set of changes comes together, the result (some soldiers and historians would argue) is a revolution. Normally, military technology merely evolves, at greater or lesser speeds, and unevenly. Occasionally, however, several developments will come together and yield a broader transformation. Thus, in the middle of the nineteenth century the combination of the telegraph (which allowed real-time links between civilian authority and military commanders, and between commanders in large military organizations), the railway (which permitted mass movements of troops and their sustenance during winter or while conducting sieges), and the rifle (which made infantry engagements lethal at greater ranges than ever before) transformed war. The mass conflicts of the wars of German unification and the American Civil War involved industrialized masses, and spelled the end of battles conducted in compressed periods of time and narrowly defined locations. They foreshadowed the slaughter of the First World War, as a few prescient observers noted.

Since the late 1970s, a number of observers have suggested that a revolution in military affairs is under way now. Soviet writers—senior military officers, including the then Chief of the Soviet General Staff, Nikolai Ogarkov—suggested that modern conventional weapons would soon have the effectiveness of tactical nuclear weapons. Long-range sensors, including powerful radars mounted on aircraft, combined with precision weapons, would allow the detection and destruction of armoured units long before they ever approached the battlefield. Soviet military leaders believed that the United States, with its superior technological base, would drive these developments, and that their consequence would fall very much to the disadvantage of the Soviet Union, reliant as it was on waves of armoured forces that could move into Europe from their mobilization areas in the western USSR.

In the West, a number of technologists had similar, if less well-articulated, aspirations for weapon systems that would combine **accuracy, range**, and above all **'intelligence'**—

the ability to home in on, or even select, their own targets. It took the 1991 Gulf war to convince a broad spectrum of officers that very large changes in the conduct of war had occurred. The lopsidedness of that war, the undeniable effectiveness of precision weapons, and the emergence of a host of supporting military technologies (stealth, for example, which is actually a cluster of technologies) convinced many observers that warfare had changed fundamentally. The developments first noted in the Gulf war continued in a decade of smaller-scale military engagements thereafter, including repeated American and British strikes against Iraqi targets, and NATO operations against Yugoslavia as a result of the wars in Bosnia in 1995 (Operation Deliberate Force) and in Kosovo in 1999 (Operation Allied Force). Attacking both by night and by day, and using primarily guided weapons, the United States and (to a lesser extent) its allies conducted operations with extraordinary accuracy and negligible combat losses. Similarly, the combination of special operations forces, unmanned aerial vehicles, and aircraft delivering precision weapons (and unguided ones for that matter) had a devastating effect on admittedly ragtag Taliban troops in Afghanistan in 2001.

An adequate conceptual description of these changes, however, remained elusive. The Vice-Chairman of the American Joint Chiefs of Staff, Admiral William Owens, described what he termed 'the system of systems' as the ultimate potential of the new technologies, if not their actual achievement.[13] By integrating long-range, precision weapons with extensive intelligence, surveillance, and reconnaissance, and vastly improved capabilities for processing information and distributing it, he believed the United States could hope to detect and destroy any enemy target over swathes of the earth's surface as large as two hundred by two hundred miles. Some in the military scoffed at this as a technologist's fantasy, pointing to the persistence of what Carl von Clausewitz termed 'the fog of war' even in seemingly immaculate military operations against feeble opponents—the limited success of NATO aircraft in knocking out Serb tanks in 1999 being a case in point. Owens himself declared that enormous bureaucratic impediments—the persistence of individual service cultures, in particular—stood in the way of his dream being achieved.

In truth, the revolution in military affairs debate remains unsatisfying. Clearly, large changes are at work, but a mere recitation of new technologies does not describe the kinds of changes emerging in warfare. The military tests that have occurred thus far involved the wildly disproportionate forces of the United States and its allies against far smaller opponents. In 1999, for example, Yugoslavia's gross national product was barely a fifteenth the size of the American defence budget. The outcome of such ill-matched encounters could serve as indicators, perhaps, but not proof of a large change. It is possible that a revolution in military affairs has occurred, but it will require evidence gathered in a much larger conflict to become manifest. It is more likely that it would require the pressure of major great power competition in the arena of conventional armament to press modern armed forces to realize such changes to their fullest. At the moment, such competition does not exist, although in theory the rise of China in opposition to American dominance in the Pacific could provide the occasion for a real revolution to make itself known. One can, however, discern at least three broad features of the new technological era in warfare: the rise of quality over quantity, the speciation of military hardware, and the centrality of commercial military technology.

The rise of quality over quantity

Historians will describe the period extending from the French Revolution to at least the middle of the twentieth century as the era of mass warfare.[14] During this time, the dominant form of military power was the mass army, recruited (in wartime, at least) by conscription, and uniformly equipped with the products of heavy industry. Those countries that could mobilize men and military production most effectively could generate the most military power—and this was true of the largest powers (like the Soviet Union) and the smallest (like Israel). Broadly speaking, the bigger the force the better—a far cry from the days of the eighteenth century when military authorities believed that armies could not operate beyond a certain optimal size, and when the way of war and contemporary economics dictated the protection of civil society from widespread compulsory military service.

The age of the mass army is over.[15] The near-annihilation in 1991 of the Iraqi army, the world's fourth largest, marked the appearance of a world in which modestly obsolescent technology had become merely targets for more sophisticated weapons. Around the world, states abandoned compulsory military service and shrank the size of their armed forces, even in those countries (China and Turkey, for example) where they actually increased their defence expenditures substantially. Several converging developments produced these changes: the growing incompatibility between civil and military culture, the increased expense of military training and technology, and the vulnerabilities created by large forces. But nothing mattered more than the emerging importance of the technological edge in combat.

A simple *gedanken* experiment confirms this. Ask any group of field grade army officers which side they would prefer to command: an American armoured battalion task force of 54 M-1 tanks plus small numbers of infantry and other supporting arms, or an Iraqi Republican Guards division of over 300 moderate-quality T-72 tanks, with the full panoply of divisional artillery and support. They will choose, unanimously, the American armoured task force.[16] The combination of superior technology and better trained and led soldiers means that in certain kinds of combat, force ratios hitherto thought utterly unacceptable—1 to 3, or even worse—could nonetheless yield victory to the seemingly hopelessly outnumbered side. To be sure, this observation may not apply equally to all forms of combat, or might not hold true in particular situations, but the broad truth remains: to a degree far greater than, say, during the Second World War, quality now trumps quantity. That quality, moreover, lies in the combination of manpower and technology. Superbly trained troops in mediocre tanks and aircraft might do well against mediocre troops in correspondingly magnificent weapon systems, but in the real world such match-ups rarely occur. The old systems of estimating military power no longer apply, be they the crude tabular comparisons of forces that appear in the newspapers or weekly news-magazines, or the seemingly scientific calculations of attrition-driven Pentagon models. The emergence of quality as the dominant feature in military power has rendered obsolete, if not absurd, today's systems of calculating relative military power.

The speciation of weapons

In the nineteenth century, and for most of the twentieth, the armed forces of the world shared similar weaponry. There have always been minor differences: even an early twentieth-century Mauser differed from a Lee Enfield or Lebel rifle. More important differences began to emerge in the First World War when, for example, the Allied states invested heavily in tanks, where the Germans did not; and certainly by the Second World War, when the United States and Great Britain developed heavy bombers that were imitated by neither their enemies nor their chief ally, the Soviet Union. The British, moreover, concentrated on aircraft optimized for night bombing, with heavy payloads and sophisticated night navigation, but little defensive ability, where the Americans concentrated on daylight bombing of industrial targets. Still, during the Second World War, and even during much of the Cold War, basic weapon systems were similar. (See Box 10.2.) By the end of the twentieth century, however, weapons had evolved much like a sophisticated ecological system. This development had three parts: the evolution of the actual implements of destruction, the emergence of unique platforms, and the creation of larger systems of military technology.

An example of the first development is the British runway-attack munition JP-233. This system discharged 30 penetrating rockets and over 200 scattered mines from a low-flying

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BOX 10.2 SECOND WORLD WAR FIGHTER AIRCRAFT

	Spitfire	P-51	Bf-109	Zero
Date entered service	July 1938	April 1942	Sept. 1939	July 1940
Weight (fully loaded, lbs)	5,800	8,800	5,523	5,313
Range (miles)	395	950+	412	1,160
Speed (mph)	364	387	354	331
Armament	8 × 303 in. machine guns	4 × 20 mm cannon	2 × 7.92 mm machine guns 2 × 20 mm cannon	2 × 7.7 mm machine guns 2 × 20 mm cannon
Engine horsepower	1,030	1,150/1,590	1,100	940

Many aspects go into the performance of an aircraft: the statistics here are but a few of the key indicators of effectiveness—others include climb and turn rates, for example. But some anomalies here are suggestive. The Japanese extracted tremendous range out of the Zero, which they needed for operations in the Pacific region. They got that by good design—and by stripping out armour. The result was a highly manoeuvrable but vulnerable aircraft that when hit was often destroyed. The P-51 was a hulking brute of an airplane; once the powerful Merlin engine was installed—a power plant with 50 per cent more capacity than its competitors—the Allies had a long-range fighter that could escort bombers to the heart of Germany or deliver bombs as well as cannon fire. More subtle differences (for example, the American and British preference for standardized weapons, as opposed to the mix of armaments on the Bf-109 and Zero) speak to national styles of weapons design, to include a strong priority on aerial firepower.

Tornado fighter bomber. The Royal Air Force developed tactics and practised skills suited to its capabilities; when put to the test in the Gulf war, however, it proved nearly useless and indeed dangerous for pilots who had to fly low and straight over Iraqi runways. JP-233, an extremely expensive munition was, in truth, designed for a single scenario, i.e., conventional conflict in Europe. Its purpose was to slow down a surge of Soviet fighter planes early in an East–West war by temporarily disabling Warsaw Pact airbases, allowing outnumbered NATO forces to gain air superiority over time. In Iraq, however, the numerical (not to mention the qualitative) balance was on the other side; Iraqi airbases were far larger than their Warsaw Pact counterparts, meaning that RAF pilots had to make longer (and hence more dangerous) runs over defended perimeters. Iraqi bases also had numerous runways and taxiways (unlike their Warsaw Pact counterparts) and could still service fighter aircraft—which, however, being outnumbered and outclassed, had very little inclination to take off!

The day of the simple high-explosive bomb is, if not over, close to it. Antitank missiles may carry not one but several warheads specifically designed to detonate layers of reactive armour and then to penetrate the sophisticated composite armour of tanks. A guided bomb may have a sophisticated nose that will not merely penetrate several layers of concrete and dirt, but actually count the number of floors it has penetrated before detonating (presumably) at the right one.

Military technology has diversified in another way. Whereas in the past all powers of the first rank had similar kinds of weapons systems, that is no longer the case. Only one country, the United States, can afford a large, stealthy, long-range bomber like the B-2. Relatively few countries can afford large sophisticated surface warships. Most countries, by contrast, can afford surface-to-surface ballistic missiles. This does not guarantee success to one side or the other, but it means that to the extent they still occur, arms races are more likely to be asymmetric. Thus Syria, which once hoped to achieve conventional parity with Israel in the late 1970s and early 1980s, has stopped trying to match the Israeli Air Force in the air. It relies, instead, on sophisticated Russian-made air defences and thousands of surface-to-surface missiles and rockets of varying types and quality.

A third form of military evolution has to do with the development not of weapons systems per se, but of **meta-systems** of extraordinary complexity. Networked sensors and command and control, such as the air operations centres that managed Allied air forces in the Gulf and Yugoslav wars, are one example, but others will surely emerge. The US Navy's Cooperative Engagement Capability, which allows all the ships in a task force to share a common picture based on the sum of all data in the system, is a prototypical example. So too are the space command and control systems that allow military staffs to track most objects in close orbit, and to co-ordinate the movements of spacecraft. Increasingly, these systems reflect less a traditional system of military command and control—in which information flows up and decisions down—but a far less hierarchical sharing of information and with it a certain dilution of authority as traditionally understood.

Engineers use the term 'systems integration' to describe the art of putting together a complex of technologies to achieve a purpose. Not all countries excel at it: the United States and several European states have, as the triumph of their aerospace industries indicates. Japan has found it more difficult, while China and Russia have mixed records.[17] Conventional military power rests, increasingly, on the ability of states to put together combinations of sensors and weapons and to make them function together in a fluid environment. Other forms of military power (terror or low-intensity warfare at one level, weapons of mass destruction at the other) do not demand these qualities.

The rise of commercial technology

Some percentage of military technology has always derived from the civilian sector. The famous Higgins boat of the Second World War, for example, which landed hundreds of thousands of Allied soldiers on beaches around the world, was a modification of a small craft originally designed for work in the Everglades swamps of Florida.[18] More broadly, civilian technologies have, from time to time, had an enormous effect on the conduct of war. The telegraph and the railway were, of course, both civilian technologies. Following the Second World War, however, to an unprecedented degree the armed forces of the developed world created vast research establishments operating on the cutting edge of technology; military inventions tended to spill over into the civilian realm more than the other way around. The transistor and modern jet engines, to take two radically different-sized technologies, emerged from military research and development. This held true at the beginning of the information age as well. The Internet originated in the United States Department of Defense's ARPANET—a system developed by the Advanced Research Projects Agency to enable the transmission of messages in the event of nuclear war. Similarly, space-based sensing emerged out of Western and Soviet efforts to exploit space for military purposes.

The **information age** is fundamentally different in this respect. Civilian technology, particularly in the area of software, leads military applications. The shift from supercomputers (once a prerogative chiefly of security institutions such as the National Security Agency, responsible for breaking the ciphers of foreign nations) to massive parallel processing, which used the linked power of many smaller computers to take on tasks hitherto reserved for much larger machines, is one example of a broader trend. Even when civilian technology does not yet lead military technology (in space-based sensing, for example) it is not very far behind: civilian satellites today can achieve resolutions (one metre or less) barely imaginable for their military counterparts only a decade or two ago.[19] These trends will continue as vast sums of money for research and development—and with it talented scientists—turn to the civilian and away from the military sector. Information has no value without military technology to act on it, to be sure, but information, and the ability to process it, is the heart of modern conventional warfare.

These three trends—the rise of quality, the speciation of weapons, and the increased role of commercial technology—generally work to the benefit of developed open societies. They require a sophisticated industrial base for their manufacture, a skilled workforce for their maintenance, and, above all, flexible organizations for their intelligent use. These are qualities most likely to be found in democracies. As recently as a few decades ago, many thoughtful observers believed that democratic states stood at a near-ineradicable disadvantage *vis-à-vis* authoritarian or totalitarian counterparts, and indeed many of those weaknesses persist: the potential for indecision and volatility, indiscipline, and more recently, a pervasive sensitivity to casualties. Outweighing these and other weaknesses, however, are liberal democracies' strengths: their wealth (which makes

military hardware affordable), their citizens' relative comfort with technological change, and fluid, egalitarian social relationships that breed a willingness to share rather than hoard information. For the moment, at any rate, the rise of the information technologies seem to ensure the conventional dominance of liberal democracies.

One must immediately put forward a large caveat, however. First, some forms of warfare, and in particular **low-intensity conflict** (especially in a heavily urban setting) and contests involving weapons of mass destruction, persist in parallel to conventional warfare and in some measure nullify it. Israel's unsuccessful decade-long war (from 1991 to 2000, although preceded by skirmishes beforehand) with Hizbollah guerrillas in southern Lebanon is a dismaying example of how a vastly superior conventional force can find itself defeated by an adroit opponent who knows how to play on the sensitivity of a democracy to its own casualties, and on world concern for civilians caught in a crossfire. At the same time, missile forces equipped with **weapons of mass destruction** offer non-democratic states the possibility of counterbalancing some, if not all, of the conventional predominance of their richer and more sophisticated opponents.

It is not clear that prosperous liberal democracies can cope well with these threats. Democracy can wage conventional warfare and remain true to itself; it is far more difficult for it to battle terror and insurgency without resorting to strategies—to include extensive surveillance of its own citizens, population control, and even assassination—that are, in the long run, corrosive to its values. No society of this type, moreover, has yet had to absorb sudden, massive levels of casualties comparable to those suffered by the inhabitants of Tokyo, Dresden, or Hiroshima at the end of the Second World War. How resilient rich, free countries will be in the face of such suffering remains to be seen.

KEY POINTS

- On occasions in history several developments have come together to create a revolution in military affairs (RMA).
- Following the Gulf war in 1991, changes in accuracy, range, and intelligence led many to believe a new RMA was taking place.
- Recent conflicts between unequal adversaries make it difficult to discern if a real RMA has occurred.
- There are three main features of the new era in warfare; the importance of quality over quantity; the speciation of military hardware; and the increased role of the commercial technologies.

Challenges of the new technology

These threats to the dominance of the new military technologies may take some time to make themselves felt. In the meanwhile, it is difficult enough for modern militaries to cope with the challenges posed by the information revolution. One difficulty has to do

with personnel issues. Industrial Age militaries could compete fairly easily with private enterprise because, at some level, they resembled it. A caste system resting on soldiers, noncommissioned officers, and officers mirrored a civilian stratification of workers, foremen, and managers. Compensation and deference structures were similar, although room could be made in the military, as in the civilian world, for more highly paid technical experts.

In the Information Age, the similarities between military and civilian organizations have broken down. Military organizations remain more hierarchical than many of their civilian counterparts, but more importantly, they find it increasingly difficult to obtain the human resources they need. A software engineer in the civilian sector is a highly paid, fairly autonomous employee, working with relatively little supervision. It has become acutely difficult for armed forces to recruit (and more importantly, retain) skilled men and women in these fields. Similarly, talented and aggressive young officers are far more aware than ever before of the possibilities open to them outside the military. Retaining their services in an age of economic opportunity is difficult not merely because of compensation inequities—those have always existed—but because the civilian sector can often offer far more opportunity for change, autonomy, and unfettered responsibility.

The information technologies have other, perhaps more subtle effects on the conduct of war. As a general rule, the greater the flow of information, the more possibility for centralized control. During the Second World War, for example, the Royal Navy and then the United States centralized anti-submarine warfare in shore-based organizations that exploited reliable long-range radio communications and critically important advances in intelligence gathering. Such a development was very much the exception, however. Today, videoconferencing and the electronic transmission of data mean that generals in national capitals can exercise close supervision over their subordinates. This effect exists throughout the military hierarchy: the challenge for mid-level and senior leaders has become one of controlling the instinctive desire to take charge of a more junior officer's problems. That impulse has become all the greater the more politically visible military action has become: when the result of a botched operation shows up immediately on CNN and a hundred websites, the inclination of higher authority to exercise the control that technology makes possible becomes all the greater.

Warfare often now occurs under the watchful eyes of the video camera and satellite uplink. In the Somalia intervention of the early 1990s, for example, American naval commandos (SEALs) slipped ashore (on 8 December 1992) in advance of a larger force, only to find a reception party of journalists awaiting them, brilliant lights blinding the wary sailors. There are exceptions: the Russians excluded the press from much of the second Chechen war, and the Rwanda massacres occurred before journalists could cover them adequately. The Arab–Israeli conflict, however, which resumed in 2000 with a Palestinian insurrection, may prove to be more the norm: rock throwing and shooting watched by (indeed, often staged for) journalists. Propaganda, always an adjunct of war, became a central element in the Arab–Israeli struggle, and both sides found themselves structuring military action with reference not only to the traditional considerations of geography and tactics, but also to the consideration of publicity. Adults manœuvred Palestinian stone-throwing children into positions for optimal camera shots of 14-year-olds with rocks up against 19-year-olds with rifles. Meanwhile, after some abysmal

failures (helicopter gunships blowing up empty houses), the Israelis reverted to sniper work and nighttime kidnappings and assassinations precisely to avoid teams of journalists. Both sides created their own, and wrecked their opponents', websites as the conflict extended into cyberspace. The real and the virtual battlefields had become a complex and inextricable whole.

KEY POINTS

- The civilian sector poses a major challenge to maintaining military expertise.
- Information technology may lead to greater centralization of military control.
- Media coverage of conflicts pose challenges for military and political leaders.

The future of military technology

Military technology has contributed to a far more complicated environment for war than that of previous centuries. To the extent one can generalize about its effects, one would have to say that where the dominant forms of war in the past were few, today they are many. The challenges for armed forces are correspondingly immense.

Nor have the changes wrought by the new technologies come to an end. The increasingly easy access by countries to space, and their reliance on space for routine communications, navigation, and information gathering, seems almost certain to propel war into the heavens. For the moment, no country seems to have placed, or at least used, weapons in space that can disable or destroy either other satellites or targets on earth. Similarly, countries have experimented with, but not yet used, technologies on earth capable of affecting space-based systems. Technology, however, clearly permits this, in the form of lasers that can blind satellites, or mere lumps of metal that can hurtle from space to earth delivering enormous amounts of kinetic energy against their targets hundreds of miles below. The opening of space to full-fledged warfare would be as large a change as the opening of the air was during the First World War. New organizations, new operational conditions, new incentives to strike first, new ways of war, will blossom overnight.

Warfare also appears to be moving to cyberspace. Thus far, despite persistent stories about mischievous teenagers, clever criminals, or nefarious agents creating havoc with computer systems, there does not seem to be evidence of really large-scale damage done by cyberattack—no massive loss of life or even money attributable to cyberattack alone. It remains a theoretical possibility, however. As with the opening up of space, the realization of the potential for war in cyberspace would elicit an efflorescence of organizations, concepts, and patterns of conflict parallel to, but very different from, those of conventional warfare.

A third sort of change already under way consists of advances in manufacturing, particularly in what is known as the nanotechnologies, robotics, and artificial intelligence. While it is highly unlikely that human beings will ever leave the battlefield (if only

because the battlefield will surely come to them), more of the dangerous work may devolve upon small autonomous, intelligent machines that creep or fly, or merely sit and wait, classifying and attacking opponents. Animated, superintelligent minefields transposed on land might make movement or manœuvre by conventional forces extremely difficult. More importantly, the creation of such machines will mean that humans have gradually begun to cede much of their ability to make decisions to silicon chips. It is a process already well under way in some areas—modern aircraft, for example, are so intrinsically unstable that an automatic system, rather than a human being, must adjust their trim.

In all these cases, the most interesting and important consequences of technological change will probably flow from its effect on how human beings think about and conduct war: how they conceive of military action, how they assign responsibility, how they calculate military effects, how they attempt to harmonize means and ends. But a fourth set of changes, perhaps the most profound of all, looms larger yet. The biological sciences increasingly make it possible to change the nature of human beings themselves.[20] The intriguing theoretical possibility of Greek philosophers has become, in our age, the challenge of scientific researchers. One can scarcely doubt that an Adolf Hitler, or for that matter a Saddam Hussein, would have availed himself of the resources of biotechnology to breed new kinds of human beings—super-soldiers, for one thing, insensitive to fear and truly loyal to the death—who could serve his purposes. Our common understanding of war rests on some of its deeply human features, which have not changed since the days of Homer or Thucydides.[21] This is so, however, only because the same species, *homo sapiens*, has continued to wage it. If—when?—humans are replaced by a variety of creatures, some sub-human, and others, in some respects, super-human, war itself will have become an activity as different from traditional human conflict as are the murderous struggles between competing anthills or the stalking of herds of deer by packs of wolves.

QUESTIONS

1. Take a representative military technology such as the tank. Using several examples, how would you characterize the national style embedded in the design of these armoured vehicles?

2. What is stealth technology? Does the concept of interaction apply to it?

3. In what cases does military technology require high levels of technical expertise and education, and in what cases does it actually reduce or even eliminate such a requirement?

4. What are some of the military technologies that only the United States has available to it? Other great powers? Smaller states? Non-state actors?

5. What are some examples of 'the technological edge'? How fragile are such leads by one state or another?

6. Is cyberwarfare really 'warfare'? Are there other metaphors that might explain it better?

7. What implications are there if warfare extends to space—will it impact more on commercial or military technology?

8. Are democracies better placed than authoritarian/totalitarian regimes to adapt to the changing nature and problems of technological warfare?

REFERENCES AND GUIDE TO FURTHER READING

J. F. C. Fuller, *Armament and History; A Study of the Influence of Armament on History from the Dawn of Classical Warfare to the Second World War* (New York: Charles Scribner's Sons, 1945) remains an excellent short treatment of the relationship between technology, tactics, organization, and strategy.

A considerably more up-to-date work is Martin van Creveld, *Technology and War from 2000 B.C. to the present* (New York: Free Press, 1989). Winston Churchill brilliantly described some of these challenges from the point of view of a decision maker in *The World Crisis, 1911–1914* (New York: Charles Scribner's Sons, 1926), ch. 6, 'The Romance of Design', pp. 125–49.

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A considerably more thoughtful treatment of the role of technology in warfare appears in Wayne Hughes, *Fleet Tactics: Theory and Practice* (Annapolis, Md.: Naval Institute Press, 1986).

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On the same theme, John D. Bergen, *Military Communications: A Test for Technology* (Washington, D.C.: Center of Military History, 1986), chs. 16–17, pp. 367–408, describes an interesting competition in communication technology and electronic warfare between an extremely sophisticated state (the United States) and a considerably more backward one (North Vietnam) in which the more developed society did not necessarily do well.

On technology in general, consult some of the wonderful books by Henry Petroski, including, in particular, *The Evolution of Useful Things* (New York: Vintage Books, 1992), as well as his earlier book, *To Engineer is Human: The Role of Failure in Successful Design* (New York: Random House, 1982).

Finally, for a whimsical but wise warning on the dangers of becoming too sophisticated, see a science fiction story, Arthur C. Clarke, 'Superiority', in *Expedition to Earth* (New York: Harcourt, Brace & World, 1970), pp. 92–104.

ENDNOTES

1. See J. F. C. Fuller, *Armament and History; A Study of the Influence of Armament on History from the Dawn of Classical Warfare to the Second World War* (New York: Charles Scribner's Sons, 1945); *The Dragon's Teeth; A Study of War and Peace* (London: Constable, 1932); *The Foundations of the Science of War* (London: Hutchinson, 1926); *Machine Warfare; An Enquiry into the Influences of Mechanics on the Art of War* (London: Hutchinson, 1942).

2. Donald MacKenzie, *Inventing Accuracy: An Historical Sociology of Nuclear Missile Guidance* (Cambridge, Mass.: MIT University Press, 1990).

3. Henry Petroski, *To Engineer is Human: The Role of Failure in Successful Design* (New York: Random House, 1982).

4. All to be found in Martin van Creveld, *Technology and War from 2000 B.C. to the Present* (New York: Free Press, 1989).

5. The JSF is a single-seat fighter with a theoretical radius of 600 nautical miles unrefuelled—its real range is almost surely likely to be less, given the difference between normal combat flying (e.g. flying at varying altitudes, sudden acceleration, and the like) and the more fuel-efficient peacetime variety. For some preliminary data see http://www.jast.mil/html/aboutjsf.htm.

6. See R. H. S. Stolfi, 'Equipment for victory in France in 1940', *History*, Vol. 55 (1970).

7. C. S. Forester, *The Ship* (Boston: Little Brown, 1943), pp. 22–3.

8. Fuller, *Armament and History*, p. 18.

9. G-5 range: source: http://www-cgsc.army.mil/a302/A302a/Archive/Equipment/155mmG5.htm. Paladin 155 mm range: source: http://www.army-technology.com/projects/paladin/specs.html.

10. Norman Friedman, *Seapower and Space: From the Dawn of the Missile Age to Net-Centric Warfare* (Annapolis, Md.: Naval Institute Press, 2000).

11. A. J. Bacevich, *The Pentomic Era : the US Army between Korea and Vietnam* (Washington, D.C.: National Defense University Press, 1986).

12. For a short design history of the C-130 see http://www.afrc.af.mil/UNITS/911aw/public/c130.htm.

13. See William C. Owens with Edward Offley, *Lifting the Fog of War* (New York: Farrar, Straus, and Giroux, 2000).

14. Some already have, of course. See Michael Howard, *War in European History* (Oxford: Oxford University Press, 1975), pp. 75ff.

15. See Charles C. Moskos, John Allen Williams, and David R. Segal (eds.), *The Postmodern Military: Armed Forces after the Cold War* (New York: Oxford University Press, 2000).

16. The author has conducted this experiment with groups of officers perhaps twenty times, always with the same result.

17. On this topic see Thomas P. Hughes, *Rescuing Prometheus* (New York: Pantheon Books, 1998).

18. For more on this story see http://www.higginsboat.org.

19. 'Private Eyes in the Sky', *The Economist*, (6 May 2000), web edition, http://www.economist.com/PrinterFriendly.cfm?Story_ID=333111.

20. See Francis Fukuyama, 'Second Thoughts', *The National Interest*, 56, Vol. (Summer 1999), pp. 16–33.

21. See, for example, Jonathan Shay's fascinating *Achilles in Vietnam: Combat Trauma and the Undoing of Character* (New York: Simon & Schuster, 1994).

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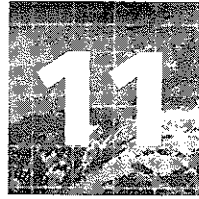
Weapons of Mass Destruction

Malcolm R. Davis and Colin S. Gray

READER'S GUIDE

This chapter examines weapons of mass destruction (WMD) from a strategic perspective. The world is witnessing a second nuclear age in which the overwhelming threat of a Soviet nuclear arsenal has been supplanted by middle- and low-level challenges posed by emergent nuclear arsenals and relatively uncontrolled chemical and biological weapons proliferation to states and non-state actors. A potential third nuclear age, in which another great power arms itself with a substantial WMD capability, has yet to emerge. WMD remain important in an increasingly challenging second nuclear age, and can ensure against a future third nuclear age that might be even more daunting to Western security interests. Yet at the same time, the collapse of the bipolar struggle of the Cold War has made the strategic validity of deterrence questionable. Under what circumstances would the United States now be willing to use its nuclear capabilities when the direct survival of the state is no longer threatened? In spite of the end of the Cold War, both the United States and Russia continue to maintain nuclear forces capable of inflicting overwhelming death and destruction. Yet new threats from emergent WMD powers, combined with differences in US and Russian strategic objectives and the sheer cost of maintaining nuclear capabilities, demand a move away from maintenance of the status quo. The issue of what is an appropriate response to emerging chemical and biological weapons threats and the role of missile defence muddy the strategic vision for the future. Non-state actors equipped with devastating WMD capabilities also pose an increasing danger.

Introduction

In the twenty-first century, weapons of mass destruction (WMD) remain the preferred weapons of the weak. It is a paradox of contemporary strategy that the most lethal weapons have little utility for offensive purposes. Of course, they may have indirect value; 'deterring the deterrent' of a country under assault by conventional military forces. In this chapter we explain why countries and other 'players' acquire (or would like to acquire) and keep WMD; we explore what can and cannot be done with WMD of different kinds; we explain the operational issues that owners of WMD have to address; and we consider the future of these awesome instruments of death.

Clausewitz's insistence that 'war is an act of policy, indeed that it is a continuation of political activity by other means' (1976, p. 87) shines the brightest of lights upon our discussion. The technical story of WMD is important, but that importance derives from its evolving political and strategic effect on world politics. As a general rule, states have developed, tested, and pursued WMD for serious reasons, by dint of major policy decisions and sometimes quite extraordinary efforts. No country has stumbled into nuclear status. Incrementalism, normal innovation if you like, cannot explain WMD arsenals. Even with regard to the biological and chemical weapons, which share technologies with commercial activities, countries do not acquire WMD in a fit of distraction.

This chapter explains the strategic motivations behind a decision to develop a WMD arsenal, and the impact this decision has on world politics and global security. We pose the most classical of strategic questions: 'why?' and 'so what?' Why do nuclear weapon states (NWS) continue to be the leading players in world politics? So what if additional regional actors join the WMD, if not necessarily nuclear, club? To Western eyes, at least, that 'club' no longer carries the prestigious stamp of ultra-modernity on its membership card. To emphasize WMD in national security policy today is tantamount to an admission of strategic backwardness. **Information-led weapons** for precise conventional bombardment, the kind of sharp military tools that inflict surgical, not mass destruction, express the cutting edge of strategic prowess today. At least that is the tale that many in Western defence communities hope is true (Ullman and Wade, 1996; O'Hanlon, 2000; Owens, 2000).

Although they can inflict massive amounts of pain, damage, and destruction, WMD do not stand above and beyond the calculations of strategy. The first small wave of theory about the strategic meaning of the atom bomb advanced an uncompromising claim captured by the title of its most sophisticated work, *The Absolute Weapon* (Brodie, 1946). The atomic 'revolution', another concept popular in the mid-1940s (Borden, 1946) registered a similarly expansive judgement. Nearly sixty years later, the benefit of hindsight from strategic history allows us to conclude that the supposedly 'absolute weapon' has been all but absolutely operationally unusable, while the atomic nuclear 'revolution' has proved compatible with the continuing conduct of wars and warfare, albeit not between nuclear-armed states.

The changing strategic context

Some commentators have sought to downplay the strategic significance of nuclear weapons (Mueller, 1989).[1] They dismiss the notion that these weapons kept the Cold War cold. We do not endorse that view. We acknowledge that several factors other than fear of nuclear war help explain the absence of war directly between the superpowers from 1945 until the Berlin Wall came down in November 1989, and that conclusive proof that nuclear weapons prevented major war is not available. In our view, nuclear weapons produced a revolution in military affairs (RMA) well worthy of the name (Jervis 1989). (See Chapter 10.) Nuclear deterrence, to the uncertain degree to which it functioned or was needed, also reinforced other pressures that forestalled the outbreak of a Third World War, between the United States and the Soviet Union.

It is too soon for persuasive histories of the Cold War to be written. But today, six decades after the first detonation of an atomic bomb, and even a decade beyond the closing of the file on the USSR, some historical perspective is possible (Friedman, 2000). Nuclear weapons have all but disappeared from sight in Western strategic debates. It is thus tempting to endorse one or both of these propositions: first, that for several decades we exaggerated the importance of nuclear weapons; and second, that even if we were correct to emphasize nuclear peril, that era has now passed. These propositions, however, are as fashionable as they are dangerously misleading. The radical change in political-strategic relations brought by the end of the Cold War has confused people about the nature of the evolving global military-technical environment. If nuclear weapons are 'yesterday's weapons' for the West, it is more because there is no contemporary great power competition, than because those weapons have been rendered obsolete by new technologies. Should China, possibly in alliance with a strategically dependent Russia, continue its political ascent in world politics (Friedburg, 2000), then many of the theorists currently sceptical of the strategic utility of nuclear weapons will have to eat their words.

No one to date has succeeded in challenging the idea that nuclear weapons have produced an RMA, or that nuclear weapons are the most destructive of all WMD. The massive use of nuclear weapons holds out the potential for global annihilation. The collective phrase 'weapons of mass destruction' often is questioned because only nuclear weapons actually can produce physical mass destruction (though some chemical and biological weapons certainly can wreak horrendous physiological damage). Box 11.1 presents some definition of nuclear weapons.

The label 'WMD' should be applied to any weaponized device that causes death and possibly destruction on a massive scale, quickly enough to be strategically useful for its employer. Undeniably, some WMD-scale effects can be, and historically have been, achieved by means other than nuclear, biological, radiological, toxin, and chemical weapons. Key to the consensual usage of the WMD concept is the quality of (near-) simultaneity of effects. If that quality is removed from the definition of WMD, then literally any weapon can function as a WMD. Limbs trained in the martial arts, bayonets, and bows and arrows, if applied with sufficient determination, frequency, skill, and energy, can kill people on cumulatively any scale of massiveness allowed by a favourable

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BOX 11.1 TYPES OF NUCLEAR WEAPONS—DEFINITIONS AND DIFFERENCES

- *'Atomic' weapons*—A broad term referring to nuclear weapons in general, but also referring more correctly to weapons which use the process of *nuclear fission* to achieve their destructive effect. Nuclear fission involves the breaking up of uranium or plutonium nuclei through bombardment by neutrons. This process of splitting the atomic nuclei creates a **chain reaction** that releases the massive explosive energy of a nuclear detonation. The nuclear weapons dropped on Hiroshima and Nagasaki at the end of the Second World War were fission weapons and had explosive yields of 15 Kilotons (15,000 tons TNT equivalent) and 20 Kilotons (20,000 tons TNT equivalent). Nuclear fission weapons are limited by physical size constraints, safety problems, and the relative inefficiency of the nuclear fission process in comparison with nuclear fusion.
- Thermonuclear weapons—These weapons use the *nuclear fusion* of two lighter elements, generally, deuterium and tritium (isotopes of hydrogen)—to form helium. A thermonuclear weapon has a fission trigger to compress the deuterium and tritium together sufficiently for them to fuse. Thermonuclear weapons are commonly referred to as 'Hydrogen Bombs'. Thermonuclear weapons generally produce explosive yields ranging from hundreds of kilotons to tens of megatons (millions of tons of TNT equivalent), although theoretically if size constraints are not an issue, there is no limit to the potential explosive yield. The largest thermonuclear weapon ever tested was a Soviet bomb with a yield of 50.7 megatons (50,700,000 tons of TNT equivalent) over Novaya Zemlya in 1961.

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imbalance of military power. Distinctly pre-nuclear military machines managed to kill, or indirectly cause the deaths of, more than fifty million people world wide between 1937 and 1945 (Dupuy and Dupuy, 1993, p. 1309). Also impressive is the ability of militarily enforced economic (especially food and fertilizer) blockades to inflict massive casualties and suffering upon a target population. The economic blockade as a non-technological variant of WMD was pioneered by Britain in 1914–18 (Bell, 1937).

Although scholars can score historical debating points against the accuracy of the WMD concept, they have yet to undermine it. If the concept has a major weakness, it lies in its failure to differentiate between kinds of weapons when their differences are tactically, operationally, strategically, and probably politically, significant. In military-technical terms, nuclear weapons today remain in a class of their own, the same way they were regarded by the war-hardened strategic theorists of 1945–6. By 1944–5, RAF Bomber Command and the USAAF could impose mass destruction in 24–72 hours on any concentrated urban area. But they could not do it with one plane and one bomb while enjoying effective immunity from enemy opposition. Today, biological and toxin weapons in principle could kill people by the millions, and possibly the tens of million (Shubik, 1997; Betts, 1998). But they could not do so reliably. The unique frisson of fear that the possibility of biological weapon use creates is more than balanced by the certainty of awful prompt effects uniquely characteristic of nuclear weapons.

It was a historical accident that nuclear weapons became so closely identified with the East–West Cold War of 1945–89. The first atomic explosion (at Alamogordo, New Mexico, on 16 July 1945) was a 'noise off stage' to the Potsdam Conference (Rhodes, 1988, pp. 689–90). The Cold War, in a sense, was a long nuclear peace (Gaddis, 1987), and the

end of the USSR coincided with the emergence of a computer-driven RMA. For forty-five years, the nuclear questions that drove several generations of theorists and practitioners alike tended to focus on deterrence of a nuclear Third World War (Friedman, 1989). (See Chapter 7.) Occasionally, some Western scholars and policymakers would note in passing that not all nuclear issues were produced by the East–West struggle. Those wider thoughts, however, were not permitted to intrude into the mainstream preoccupation with avoiding the Armageddon promised by a full-scale US–Soviet nuclear exchange. Such tunnel vision was understandable and even sensible. After all, when compared with the damage that the Cold War protagonists could inflict upon the world, all other nuclear issues receded in significance. The contrast with the strategic context of today could hardly be starker. (See Box 11.2 for a summary of the key developments in the history of nuclear weapons.)

So sharply has the strategic context shifted since the 1980s that several commentators have advanced the thesis that we are now in a **second nuclear age** (Payne, 1996; Gray, 1999a). Whereas in the decades of Cold War there was a single threat providing policy, and strategic, tactical, and technical inspiration for nuclear arsenals, today the 'threat' is a diffuse set of possibilities better characterized as risks. Superpower nuclear arsenals (Schwartz 1998) eventually grew to monstrous size. The awesome scale of those stockpiles induced a strategically paralysing anxiety, which discouraged adventure, even much boldness, in policy.

The superpowers were not motivated to compete for territory (neither the United States nor the USSR coveted any part of the other's patrimony), they had no history of great antagonism, and they learned together how to coexist with shared nuclear danger. The nuclear arsenals of the five permanent members of the United Nations Security Council, nuclear weapons states all, and the nuclear lore which governs them, remain wholly the product of the great Cold War. There is at least one sense in which the US nuclear arsenal unquestionably comprises 'yesterday's weapons': the entire nuclear posture was designed and deployed in the years of the Cold War. The United States has no nuclear weapons modernization programmes today. The US nuclear force posture, its scientific and industrial nuclear infrastructure, and its community of civilian and military nuclear experts, is literally an ageing, wasting asset. Whether or not this matters very much is a question we address later.

The 'second nuclear age' of the early twenty-first century bears only a small resemblance to the strategic context of the Cold War. The United States and Russia continued the Strategic Arms Reductions Treaty (START) process. START I, signed in 1991, halved treaty-accountable nuclear weapons from approximately 12,000 to 6,000. START II (ratified in 2000) mandates a drop from 6,000 to the zone 3,000–3,500; while negotiations on a START III projected levels falling to 2,500, or 1,500, or even lower. (See Box 11.3.)

It is not self-evident that the START process makes strategic sense today. If the United States and Russia are not enemies and do not anticipate returning to be such, their nuclear forces are politically, and hence strategically, disconnected from each other. There may be excellent reasons for one or both countries to lower their levels of long-range nuclear-armed forces (Feiverson, 2000), but those reasons have little to do with their bilateral relationship. It is possible that far from contributing to strategic stability,

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BOX 11.2 KEY DEVELOPMENTS IN DELIVERY SYSTEMS AND WEAPONS

Weapon system/military technology Date of testing or deployment

	USA	USSR	UK	France	China	Israel	India	Pakistan
Atomic bomb	1945	1949	1952	1960	1964	1970s	1974	1998
Long-range bomber[a]	1948	1955	1957	1960s	1960s	—	—	—
All jet bomber[b]	1951	1954	1957	1960s	1960s	—	—	—
Hydrogen bomb[c]	1952	1955	1953	1957	1968	1967	1980s	—
Intercontinental Ballistic Missile (ICBM)	1958	1957	—	—	1980	—	—	—
Intermediate-Range Ballistic Missile (IRBM)	1950s	1950s	—	1970s	1970s	1980s	2000	1999
Submarine Launched Ballistic Missile (SLBM)	1960	1964	1970s	1970s	1982	—	—	—
Anti-Ballistic Missile (ABM)[d]	1974	1966	—	—	—	—	—	—
Multiple Independently Targetable Re-entry Vehicle (MIRV)	1971	1974	1970s	1970s	1990s	—	—	—
Tactical nuclear weapons[e]	1950s	1950s	1950s	1960s	1960s	1980s	1998	1998
Enhanced Radiation Weapons ('Neutron bomb')[f]	1980s	1980s	—	1980s	1990s	—	—	—
Air-Launched Cruise Missile (ALCM)[g]	1960s	1980s	—	—	—	—	—	—

Notes:

[a] The USA introduced the world's first true intercontinental bomber with the B-36 Peacemaker, a ten-engine combined propeller/jet aircraft originally designed to bomb Nazi Germany from the continental United States if Great Britain fell to a German invasion. It remains the world's largest bomber and served from 1946 to 1955.

[b] Many states have multirole combat aircraft that can 'bomb' targets, but are not true bombers. The B-47 Stratojet was the world's first all jet bomber, but was considered a medium range aircraft. The Boeing B-52 Stratofortress was introduced in 1955 and was a true all jet intercontinental bomber. The Soviet Union never introduced a comparable all jet aircraft.

[c] The Soviet test of a 'thermonuclear weapon' in 1953 was in fact a boosted nuclear weapon, rather than a full 'hydrogen bomb'.

[d] This term refers to nuclear-tipped ABMs deployed in the 1970s. The Anti-Ballistic Missile (ABM) is designed to shoot down ICBMs. Under the 1972 ABM Treaty both the USA and the USSR were allowed one ABM site with 100 interceptors to defend either ICBMs or the capital. The USA deployed an ABM system based on Sprint and Spartan interceptor missiles as part of Project Safeguard, but deactivated it soon after deployment. However the main targeting radar—the Perimeter Acquisition Raid Characterisation System (PARCS) remained active as part of the US early warning system. The Soviet Union deployed SH-03 and SH-08 ABMs around Moscow, and the system is still operational today. Furthermore, more modern Russian surface to air missiles (SAMs) are rumoured to have a limited ABM capability. A new generation of 'ABM' is under development as part of the US National Missile Defense (NMD) system due for initial deployment between 2003 and 2005.

[e] Tactical nuclear weapons include short-range battlefield missiles and rockets, nuclear artillery shells (artillery-fired atomic projectiles or AFAP), and nuclear land mines (atomic demolition munitions [ADMs], as well as naval nuclear weapons such as nuclear depth charges, nuclear warheads for torpedoes, and stand-off anti-submarine weapons. Finally some surface-to-air and air-to-air missiles can carry nuclear warheads.

[f] The 'neutron bomb' uses a minimal yield explosion but generates enhanced 'prompt' radiation. This causes minimal damage to structures, but kills humans. Ideally employed to kill crews inside tanks and other armoured vehicles.

[g] Cruise missiles have been in existence since the German employment of V-1 'buzz bombs' from 1944 to 1945. The USA employed large air-launched cruise missiles in the 1960s in the form of the 'Hound Dog' but these had limited range and poor accuracy in comparison with the ALCM, which emerged in the 1970s. By the 1990s, the air-launched cruise missile had become accurate enough to use conventional warheads (the Conventional Air-Launched Cruise Missile—CALCM) and was employed extensively in the 1991 Persian Gulf war and the 1999 Kosovo conflict.

Source: Dates and information drawn from Schwartz, Stephen I. (ed.), *Atomic Audit—The Costs and Consequences of US Nuclear Weapons since 1940* (Washington D.C.: Brookings Institution, 1998).

BOX 11.3 START II USA-RUSSIA NUCLEAR BALANCE (BY 2003)

Nuclear delivery vehicles	Launcher total	Warhead total	Notes
US strategic forces (active)			
LGM-130G Minuteman III ICBM	500	500	W-76 warheads being replaced by W-87 Peacekeeper warheads
Ohio class SSBN/UGM-133 Trident II D-5 SLBM	336	1,680	Being upgraded with new 'hard target' warhead
Boeing B-52H Stratofortress	66	934	No longer on Operational Alert
Rockwell B-1B Lancer	95	0	No longer configured for nuclear operations but can be reconfigured
Northrop B-2A Spirit	21	336	Not designed to carry cruise missiles
Total	**1,986**	**3,500**	
US non-strategic forces			
BGM-109A Tomahawk TLAM-N SLCM	350	350	No longer deployed operationally but can be carried by SSNs
B-61 Tactical bombs	600	600	Deployed in NATO and US weapons storage igloos
Total	**950**	**950**	
'Hedge' stockpile (reserve if START II collapses)			
W-78 ICBM warheads		900	For upload on to Minuteman III
W-76 SLBM warheads		800	For Trident II D5 upload from 5 to 8 warheads
B53, B61 and B83 free fall bombs		800	For upload on to B-1B Lancer and B-52H Stratofortress
Total		**2,500**	
Inactive reserve stockpile			
Various warhead types		2,500	Mainly B61 bombs, W62 ICBM and W76 SLBM warheads, W80 ALCM and W84 GLCM warheads—in storage with fissile material removed
Total		**2,500**	
Grand total		**9,450**	
Russian strategic forces (active)			
SS-19 Stilleto (RS-19) ICBM	105	105	Silo based
SS-25 Sickle/RS-12 Topol M	705	705	Road mobile ICBM
SS-N-18 Stingray SLBM	176	528	16 missiles each with 3 warheads carried on 11 Delta III SSBNs
SS-N-23 Skiff SLBM	112	448	16 missiles each with 4 warheads carried on 7 Delta IV SSBNs
SS-N-20 Sturgeon SLBM	120	720	20 missiles each with 6 warheads carried on 6 Typhoon SSBNs
Tupelov Tu-95 H6/H16 Bear	60	640	Assumes 28 Bear H16s with 16 AS-15 KENT ALCMs or AS-16 Kickback SRAMs
Tupelov Tu-160 Blackjack	25	300	Carries 12 AS-15 Kent ALCMs or AS-16 Kickback SRAMs
Total	**1,303**	**3,446**	
Russian non-strategic forces	**approx. 2,750**		
Russia maintains a large stockpile of tactical and theatre nuclear forces. Indications suggest that Russia is moving towards re-deployment of theatre-tactical nuclear weapons into operational status. The theatre-tactical stockpile numbers around 2,750 warheads.			
Russian hedge/reserve stockpile	unknown	5,000	
Grand total	**?**	**11,196**	

Source: Information is drawn from nuclear weapons databases at www.cdi.org/issues/nuke&l/database, and www.bullatomsci.org

START actually may be an irrelevance at best, and a mischievous agent at worst. On the one hand, the United States is the global superpower with principal responsibility for support of international order. On the other hand, Russia is struggling even to remain a regional power. It follows that Russian and American foreign policies must place very different burdens on their strategic nuclear forces, in which case seeking a rough parity in nuclear armament becomes inappropriate. It is ironic that a START process, that many people hoped would be the leading vehicle for nuclear disarmament, actually may help sustain nuclear forces at relatively high levels. In the absence of START, with its implied requirement for parity, Russian nuclear forces might go into numerical free-fall. Without START complications, portions of the US nuclear forces could stand down from the active list because, with no legal impediments to reconstitution of the force, policymakers would be confident that the operational arsenal could be quickly augmented if necessary. The **SALT and START processes**, now more than thirty years old, remain geared to an age of USA–Soviet antagonism that has passed. Americans today cannot sign on for the true deep-reductions START III regime that Russians want and need, because they alone continue to extend deterrence to protect distant friends. The US government cannot place itself in a situation where its ability to augment its strategic nuclear forces would be hostage to (improbable) Russian acquiescence (a condition with START). For the Russians, the very existence of the START process obliges them to strive to maintain an extraordinarily expensive strategic parity with the United States, despite the fact that they no longer have a plausible security rationale for keeping their strategic forces at even START III levels.

This second age in the nuclear era thus is defined by changes in the political context for strategy, not by changes in technology. The end of the Cold War has removed for now the most serious WMD threat, global nuclear war. Catastrophe, however, can come in different sizes. There is a significant difference between a war wherein handfuls, tens, or a few hundred nuclear weapons are used, and a war between nuclear powers involving an exchange of 20,000 nuclear warheads. The former would be a survivable disaster for the human race. The latter would not.

Unfortunately, the good news that a catastrophic nuclear war is highly improbable is balanced by the less good news that the world is not well prepared for today's WMD problems. There was simplicity to a bipolar nuclear-supported strategic stand-off, which facilitated, though could not guarantee, deterrence success. Unreliable though we know deterrence to be, it is probable that a succession of superpower leaders did not need much deterring. Few of the elements that worked for deterrence during the Cold War, however, are now active.

Instead of one principal adversarial relationship, now there are many potential flashpoints. Instead of high political stakes that enhanced the credibility of declared nuclear threat, now the sole superpower has few vital interests at risk far from home. The United States could threaten nuclear war credibly in the struggle with the Soviet Union, because these threats appeared to be in proportion to the political stakes. That is no longer the case for US deterrence today. Even though US interests abroad are much reduced from what they were during the Cold War, the new adversaries are likely to prove far more difficult to deter. The United States cares less about developments in Europe and Asia than it once did because events no longer have great political-strategic meaning given the

absence of a competing superpower antagonist that appeared ready to exploit any opportunity. US power is unlikely to be relevant when some recalcitrant state or sub-state actor cares a great deal more about a local or regional issue than do Americans. This, after all, is the core explanation of why the United States lost in Vietnam. US foes may be relatively puny when weighed on some military balance against the super-power, but military success is a matter of how much force, and of what kinds, one is willing, as well as able, to apply. In the mid-1990s, for example, US military and economic power could not defeat, deter, or bribe Somali clansmen into co-operating with peacekeepers.

As WMD and their delivery vehicles proliferate,[2] the forces that limit US military effectiveness might assume greater significance. A superpower or coalition of great powers may enjoy a 50:1 advantage in nuclear weapons over some regional polity, but if—as would be probable—that regional polity was judged much more likely to use its small nuclear arsenal than was its giant foe, what is the value of quantitative superiority?

KEY POINTS

- The international security environment has radically changed with the end of the Cold War. The world has moved from the 'first nuclear age' dominated by a bipolar competition to a 'second nuclear age' in which a nuclear-armed United States faces WMD-armed opponents ranging from non-state actors and 'rogue' states to a potential peer competitor (e.g. the People's Republic of China).

- Western strategic debate is no longer dominated by nuclear matters. Many observers now seem to believe that basing national security policy on WMD is a sign of weakness rather than strength, and that nuclear weapons are being supplanted by information-led conventional capabilities as the 'cutting edge' of strategic prowess. This perception, however, ignores the new challenges faced by policymakers in dealing with WMD.

- At least until the election of President George W. Bush, both US and Russian thinking on nuclear weapons remained focused on the SALT/START arms control process and traditional perceptions of nuclear deterrence. As a result, both states have failed to deal with the WMD challenges that characterize the second nuclear age.

- Deterrence may no longer remain an effective strategy. Declining levels of interest in foreign developments reduce the credibility of deterrent threats.

Weapons of mass destruction for national security?

Five questions illuminate most of the policy and strategy terrain for WMD. Why do states acquire nuclear weapons? Why do existing NWS retain nuclear weapons? Are all kinds of WMD created politically and strategically equal? What use are WMD? Is there a taboo against WMD use?

Why do states acquire nuclear weapons?

Although states acquire nuclear weapons for specific reasons, their motivations often fall into several categories: (1) to enhance their security, meaning to hold more safely what they (and possibly their friends and allies) hold already; (2) to enhance their security at the expense of other states; (3) to satisfy the ambitions and feed the interests of domestic constituencies; and (4) to gain prestige or honour (Sagan, 1996/97; Gray, 1999a, ch. 3). These categories are not mutually exclusive. The relative weighting among these four types of motivation influence the likelihood that a policy for nuclear acquisition might be changed by external influence. Paradoxically, the most potent motive for proliferation, a perceived need to enhance defensive security, also is in principle the most amenable to change. If a state's leaders desire nuclear weapons for self-protection, then they should be open to persuasion either that their threat calculus is faulty, or—more likely—that there are alternative ways to augment their security.

If, however, a state's leaders seek nuclear weapons as strategic cover for aggression, to buy off troublesome domestic interests, or to cut a bigger figure on the world stage, there will be little that outside elements can offer to deflect policy. Although our motive categories (1), (3), and (4) will always be present when a state goes nuclear, thus far at least motive (1) has been dominant. Great comfort should not be drawn from this fact. World politics in the future is likely to encounter an adventurous, possibly desperate, leader who will try to wield nuclear threats as a coercive strategy. Imagine Adolf Hitler with nuclear weapons! It was precisely such a prospect that triggered the Manhattan Project of the Second World War.

Why do existing nuclear weapons states retain their nuclear weapons?

The Nuclear Non-Proliferation Treaty, legally effective in 1970 and renewed indefinitely in 1995, obliges the five (as of 1967) signatory nuclear weapons states to commit to nuclear disarmament. Notwithstanding ritualistic endorsement of complete nuclear disarmament as an eventual goal, no declared NWS believes such disarmament to be practicable, prudent, or desirable. The reason why this is so has been stated by Sir Michael Quinlan, a former Permanent Undersecretary in the British Ministry of Defence: 'A nuclear state is a state that no-one can afford to make desperate' (Quinlan, 1997). There are few political contexts wherein nuclear weapons are likely to be much use. As with personal life and accident insurance, however, those few happen to be important. The possession of nuclear weapons is uniquely reassuring, because they are entirely in a class of their own (even among WMD). They are a technically reliable threat of last resort to discourage a foe from pressing too hard or threatening national survival. Nuclear deterrence may or may not work, but any state known or strongly suspected to be nuclear armed is certain to be treated with respect. Any state with an active foreign policy likely to bring it into conflict with a nuclear-armed adversary has to devise a way to neutralize strategically that opposing nuclear armament. Cunning plans, devious stratagems, state-of-the-art conventional forces, and legal and moral proscriptions, can all be helpful. Nevertheless, the most prudent strategic counter to nuclear menace is a countervailing nuclear threat of one's own.

Nuclear weapons, because of the dispersion of nuclear knowledge, cannot be un-invented: they are here to stay. Any supposedly nuclear-free environment would be hostage to the first cheater to hide nuclear weapons or to achieve overt or covert nuclear rearmament. Thus, a country like Britain does not retain its NWS status today because it can identify specific threats requiring nuclear deterrence, but because there is no guarantee that extreme threats will not emerge in the future. The twentieth century brought three deadly perils to British national security (two German, one Soviet). Who knows what danger this new century will bring? Sunk costs in new equipment (Vanguard class SSBNs and Trident D-5 SLBMs) and the potent claims of national prestige also make nuclear weapons appealing to many British officials.

Are all weapons of mass destruction strategically equal?

No one yet knows if all types of weapons of mass destruction are equal in terms of their ability to produce strategic effects. If biological and toxin weapons can wreak mass destruction, thus becoming the 'poor man's nuclear arsenal', are they politically and morally nuclear equivalents? If countries that abide by the relevant international conventions are struck by biological, toxin, or chemical (BTC) weapons, are they entitled to implement a nuclear response (right of reprisal and/or right of self-defence)? Notwithstanding the huge technical, tactical, operational, and logistical distinctions among the principal kinds of WMD, it is in the interest of convention-compliant polities (such as the members of the North Atlantic Treaty Organization) to assert a strategic equivalency among all such weapons. The alternative is to have no licensed military response to a chemical or biological attack other than conventional weapons, because most states have agreed to eliminate chemical and biological weapons from their arsenals. Conventional deterrence has an undistinguished record of success (Rhodes, 2000). One may be reluctant to endorse a strategic equivalency among all kinds of WMD, because to do so is to issue contingent licence to use nuclear weapons against non-nuclear states. Polities which believe that use of their non-nuclear WMD would be very likely to trigger a nuclear response would be motivated to acquire nuclear weapons of their own. Many such polities will not be able to turn that motivation into a nuclear arsenal, but some certainly could do so. Nuclear weapon states without offensive BTC capabilities may not always find it necessary to respond with nuclear force to BTC assault. Non-nuclear WMD strikes sometimes need meet only with a conventional reply. After all, BTC weapons are difficult to employ and under most circumstances produce only marginal battlefield or strategic effects. Nonetheless, given the potential of non-nuclear WMD to wreak societal terror, military horror, and general slaughter, it is prudent for nuclear-armed states to reserve the right to launch a nuclear response to a chemical or biological assault. This is one of those many policy issues in world politics where all the feasible choices are unattractive.

What use are weapons of mass destruction?

Most of the contemporary literature and debate about WMD focuses on the unending struggle to achieve the international control of these weapons. The tenor of public discussion of WMD is deeply and pervasively pejorative. The fact is that polities choose to

acquire, maintain, and technically improve WMD for reasons that appear sound to many policymakers, and to most members of their domestic constituencies. It also would be wrong to presume that the elected politicians and military guardians of WMD arsenals typically are either stupid or evil. Polities seek WMD for good-seeming reasons of (defensive) security, to satisfy domestic interests, and to boost national honour. The decisions may not always be reasonable, but according to local criteria generally they are rational. The rationale of military and strategic utility varies among types of WMD and among polities. A general answer about the value of WMD can be provided by responding to a specific question: 'What use does the United States have for nuclear weapons?' The empirical, not normative, answer is that US nuclear weapons: (1) can deter, punish, and if necessary defeat regional enemies who threaten or use WMD against the US homeland; (2) extend **deterrent** and perhaps **compellent** effect on behalf of friends and allies menaced by WMD, thereby reducing the incentives for WMD proliferation; (3) compensate for the possible military failure of US or allied conventional forces; (4) thwart peer competitors in peace, crisis, or war; (5) execute niche war-fighting missions against extremely hard, well-dispersed, and unusually elusive targets; and (6) represent the 'final argument' of the global superpower, and thereby help provide a 'general deterrence' (Gray, 1999a, ch. 5; Morgan, 1977, ch. 2). (Figure 11.1 presents a graphic representation of the effects of nuclear weapons of various sizes.)

What is the strategic use of BTC, as contrasted with nuclear weapons? Since the Germans at Ypres first introduced them on the modern battlefield in 1915, chemical weapons have attracted a large body of official military writings. By 1918 the barrage firing of gas shells delivering choking and blistering agents had become completely routine (Zabecki 1994). Notwithstanding the 1925 Geneva Protocol (US Arms Control and Disarmament Agency, 1990, pp. 10–19), which prohibited their employment, coping with ever more lethal chemical weapons has been a part of military planning until the present day. Legal norms aside, gas bombing was expected in the Second World War. It also was feared in 1991 that Saddam Hussein's Iraqi army would fire nerve gas shells from its artillery and equip its inaccurate Scud missiles with chemical warheads.

By contrast to the tactical and operational focus of chemical warfare, biological agents generally are understood to be inherently 'strategic'. Biological agents are living organisms that have incubation periods in human hosts ranging from hours to days. They are better suited to the decimation and enfeeblement of vulnerable civilians than to destroying promptly an enemy's military units. Biological weapons—and **persistent chemical agents**—cumulatively, however, could inflict great damage on both military and civilian infrastructure in any conflict that lasted longer than a few days. Although in principle target populations can be protected against non-nuclear WMD, in practice the variety of possible threats and the sheer scale of the defence mission would pose great difficulties. While most biological weapons have little military value, they offer enormous strategic potential for any group or state that wishes to threaten or kill a lot of people. As weapons for the political purposes of coercion by terror, or of mass slaughter in revenge for real or imagined wrongs, BT agents offer benefits that have not passed unnoticed (Cole, 1997; Laqueur, 1999; Stern, 1999).

A 1-megaton (1 million tons of TNT) nuclear bomb exploded at 6,500 ft over New York City.
Source: United Presbyterian Church (1981).
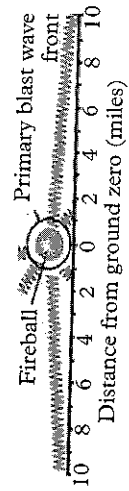
1.8 seconds after detonation. Extremely hot, luminous fireball emits intense thermal (light and heat) radiation at the speed of light. Destructive blast wave moves out at supersonic speed. Gamma rays and neutrons radiate outward.

4.6 seconds after detonation. At 4.6 seconds and about 1.3 miles from ground zero under the explosion, the primary and reflected blast wave fronts join near the ground. 'Overpressure' (air pressure over atmospheric pressure) is 16 pounds per square inch.

11 seconds after detonation. At 11 seconds and 3.2 miles from ground zero, the overpressure is 6 pounds per square inch. Wind velocity is about 180 miles per hour. Thermal and nuclear radiation are strong.
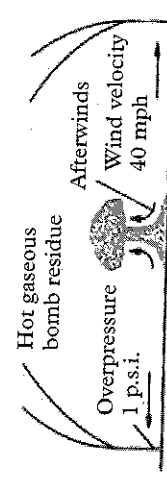
37 seconds after detonation. At 37 seconds and 9.5 miles from ground zero, overpressure is 1 pound and winds 40 miles per hour. The fireball is no longer luminous but is still very hot; it rises rapidly, drawing 'afterwinds' inward and upward, raising dirt and debris in the mushroom cloud stem.

110 seconds after detonation. By 110 seconds, as the rising fireball expands and cools, radioactive particles condense into a cloud at a 7 mile height. After 10 minutes the cloud rises to about 14 miles. Wind later disperses the cloud, although precipitation may cause early (local) radioactive fallout. The American way of life is blown away in a flash.

Figure 11.1 Nuclear weapons effects

Is there a taboo against the use of weapons of mass destruction?

Many scholars believe that there is a taboo against using WMD. Today it is commonplace to find reference to the chemical taboo (Price, 1997) and the nuclear taboo (Paul, 1995). If taboo means a social-cultural proscription sometimes backed by the force of law, then there is nothing resembling a reliable taboo against WMD. It is true that gas warfare was singled out for prohibition in 1925, and that poison gas, as chemical weapons came to be called, was not employed in the Second World War (except by Japan and China) or since (except by Iraq against its Kurdish minority and in the Iran–Iraq war in the 1980s). Furthermore, it is true that nuclear weapons immediately were proclaimed as revolutionary in character, and that a distinction between nuclear and conventional weapons has persisted for more than fifty years. The measure of conventionality that nuclear weapons achieved in the 1950s was turned around in the 1960s, a process capped by the Nuclear Non-Proliferation Treaty (NPT) in 1968. The NPT and its regime have helped stigmatize nuclear weapons, reduce the prestige of nuclear status, and generally de-legitimize all things nuclear. So much is really not controversial. However, the quintessential strategic question remains: so what? It is improbable that the social, cultural, legal, and political stigmatization of WMD can offset perceived national security reasons for the acquisition, threat, or use of these weapons. The chemical and nuclear taboos, though real, do not overrule perceived strategic necessity. This is not to claim that such taboos are entirely without value. Recognition of their existence may count in some countries' defence policy debates, where opinion is balanced between WMD acquisition, threat, or use, and abiding by nonproliferation norms. Moreover, WMD taboo(s) generate general disapproval of these weapons, which can hinder proliferation in a myriad of small, but perhaps cumulatively significant, ways. Overall, however, WMD taboos tend to work upon the easier cases. Defence communities which discern no need for WMD can make a virtue of that judgement. But when regional protagonists, such as India and Pakistan, confront what they deem to be truly lethal challenges to national security, history records that military necessity knows no taboo.

KEY POINTS

- States seek to acquire nuclear weapons to enhance their security, possibly at the expense of other states; to satisfy the ambitions and feed the interests of domestic constituencies; and to gain prestige or honour.
- Although lip-service is paid to the goal of nuclear disarmament by nuclear weapon states, in fact such a goal is highly idealistic, impractical, or undesirable. The safest strategic counter to a nuclear threat is a countervailing nuclear threat.
- Nuclear weapons cannot be uninvented, and the knowledge behind nuclear weapons is universally accessible.
- There is broad strategic equivalency among all forms of WMD—failure to assert this equivalency limits the response to non-nuclear WMD threats to conventional weapons.
- Nuclear weapons can deter, punish, and if necessary, defeat an adversary; extend deterrence and compulsion on behalf of allies; compensate for military failure;

thwart peer competitors; execute war-fighting missions that conventional weapons cannot undertake; and are seen as the weapons of last resort to reinforce general deterrence against aggression.

The operational role of weapons of mass destruction

Current thinking about the future of war suggests that large-scale interstate conflict is far less likely than low-level 'ragged' war fought at the 'intra-state' level, perhaps between non-state actors. The emergence of **information-led warfare** after the 1991 Persian Gulf war highlighted the role for advanced conventional weapons capabilities—eclipsing the perceived role and utility of nuclear weapons. Popular perceptions suggest that with the end of the Cold War, the most modern, even post-industrial societies, no longer rely on weapons of mass destruction which are seen as close to an anachronism, an unfortunate remnant of an earlier age.

Yet from the perspective of potential adversary states and 'superterrorist groups', the utility of WMD is clear. Nuclear, biological, and chemical weapons delivered by ballistic missile, cruise missile, manned aircraft, and terrorists offer a way to respond *asymmetrically* to Western technological dominance. An asymmetric response, for instance, would seek to deny the United States and its allies the luxury of fighting a war on their terms by undermining key 'enabling' capabilities of an information-led military force.

All war is asymmetric in the sense that states engaged in conflict seek to fight each other on terms least conducive to their opponent's success. There is thus little new about asymmetric warfare except for the implications it has for the role of WMD in an era of 'post-modern conflict'. Nuclear, biological, chemical, and radiological weapons are seen as 'great equalizers', ideally suited for an asymmetric response to Western military powers equipped with superior conventional capabilities. There also is an increasing potential for non-state actors to employ such weapons. The future shape of 'superterrorism' may see WMD attacks come apparently from nowhere, with little or no warning, cause massive casualties, and leave nation states with no opportunity to retaliate. 'Suitcase nukes', biological and chemical weapons released in heavily populated urban centres, could be effective counters to Western technological dominance, including ballistic missile defence systems. Future adversaries may see a different 'military revolution' that promises a cheap but devastating response to undermine Western—and in particular US—military advantages.

Nuclear weapons and the United States

US government officials, and some senior military officers, hint that the role of nuclear weapons in US security policy has been de-emphasized since the Cold War. The 1995 Nuclear Posture Review suggests that nuclear weapons are now playing a smaller role in US security than at any other time in the nuclear age. Tactical and theatre-tactical

weapons are no longer deployed. Bomber forces are kept on reduced alert and are no longer loaded with nuclear weapons. There have been substantial reductions in the number of operationally deployed warheads, and nuclear forces have been 'de-targeted': if an accidental launch occurs, nuclear weapons would splash down or detonate over little-travelled areas of the world's oceans. The US airborne nuclear command post no longer maintains a constant airborne alert.

Today a debate has emerged in the United States about how low the number of nuclear weapons can go. Should Russia and the United States move towards 'virtual nuclear arsenals' by removing warheads from delivery systems, thereby ending their reliance on prompt nuclear deterrence? Do nuclear weapons remain an acceptable and credible deterrent to the use of chemical and biological weapons by 'rogue states'? A key underlying theme to this debate is a challenge to the primacy of deterrence. The nuclear 'abolitionists' argue that use of nuclear weapons is unnecessary, unethical, and illegal under any circumstances; that no nuclear threat is likely to emerge that justifies continued reliance on nuclear deterrence; and that credible WMD threats can be met with a conventional response given improvements in weapon accuracy. According to General Charles Horner, a leading nuclear abolitionist:

The thing that occurred to me was the lack of military utility of nuclear weapons. In the Gulf War, we took inordinate measures to preclude unnecessary casualties. Nuclear weapons are such a gross instrument of power that they really have no utility. They work against you, in that they are best used to destroy cities, and kill women and children. Now, first, that's morally wrong; second, it doesn't make sense, and then of course, there is the real threat of nuclear weapons in the hands of irresponsible or desperate powers (Schell, 1998, p. 38).

Advocates of missile defence also argue that a continued reliance on nuclear deterrence is unacceptable, given the potential cost if deterrence fails. Now that the most likely threat to the United States is a few weapons launched by rogue states, it is possible to defend against this threat by using interceptor missiles. Former US Secretary of Defense William Cohen outlined a policy to deal with this new ballistic missile threat during the 2000 Munich Conference on Security Policy:

The solution is clear: America needs both theater missile defense systems and a limited national missile defense system. Would a national missile defense system mean the United States is abandoning deterrence? Absolutely not. Missile defenses are a logical adjunct to our traditional policy. Defenses enhance deterrence by reducing the political and military value of rogue missiles. They can prevent damage if a rogue leader miscalculates.

A Minimalist school of thought suggests that while nuclear weapons still have a role to play in maintaining a 'minimum deterrent', this policy requires a few hundred warheads. Some go further, arguing that 'existential deterrence' and 'virtual nuclear arsenals' are desirable, with warheads removed from delivery systems, and nuclear forces stood down so that it would take hours, days, or even weeks to launch a missile strike (Blair, 1995). Analysts who champion these views suggest that nuclear weapons should play a smaller role in security policies, thereby strengthening the 'nuclear taboo'.

Despite this debate about the future role and utility of nuclear weapons, US nuclear doctrine is intended to deter a large-scale nuclear strike against the continental United

States, its key allies, and its armed forces deployed abroad. Under the latest nuclear war plan—Single Integrated Operational Plan (SIOP-98)—US nuclear forces continue to 'hold at risk' the 'stable nucleus' of Russia's nuclear capability—its silo-based and mobile intercontinental ballistic missiles (ICBMs), nuclear missile-armed submarines (SSBNs), and its surviving strategic bomber aircraft, command and control infrastructure, and political leadership (Arkin and Kristensen, 1998). Through a process of 'adaptive planning', targets in Russia and elsewhere are continuously added or removed. Even though the number of nuclear weapons deployed has been reduced since the Cold War, the ability of US nuclear forces to destroy 'hard targets' in the Russian Federation and elsewhere has recently increased. Improvements in accuracy, operational flexibility, and command and control have bolstered the ability of US forces to hold the Russian nuclear arsenal at risk.

US nuclear forces also have come to be seen as a deterrent to chemical and biological weapons use against US and allied military forces, key allies, or the United States. Proponents of using nuclear weapons in 'belligerent reprisal' note that chemical and biological weapons are WMD and that their use crosses a political rubicon that demands a severe response. A conventional response to chemical or biological use will not deter the adversary from further chemical or biological attacks, and may encourage other enemies to employ chemical and biological weapons. A legacy of the Gulf war has been the public and governmental identification of a role for nuclear weapons in deterring, and responding to the use of chemical and biological weapons. The debate over this issue continues to focus on whether a nuclear response is justifiable, what level of chemical or biological attack should trigger a nuclear response, and what targets should be attacked by what types of weapons (Gompert, 1998: Bunn, 1996).

Nuclear weapons and the Russian Federation

The Russian military doctrine, released in April 2000, makes it clear that nuclear weapons will remain the ultimate guarantor of Russian security and may not be reserved as a 'last resort'. Russian officials have stated that nuclear weapons would be used to respond to a major conventional assault if it became clear that Russia's weakened conventional forces were likely to be defeated. The April 2000 doctrine gives nuclear weapons a broad role in preserving Russian security:

The Russian Federation reserves the right to use nuclear weapons in response to the use of nuclear and other types of weapons of mass destruction against it or its allies as well as in response to large-scale aggression using conventional weapons in situations critical to the national security of the Russian Federation (Main, 2000, p. 2).

Two key issues emerge from the new doctrine. First, Russia may use nuclear weapons in response not just to nuclear, but also to chemical or biological attacks against itself or its allies. Second, Russia reserves the right to use nuclear weapons in response to conventional attacks that either directly or indirectly threaten Russian national security. Thus Russia has installed a policy of comprehensive extended nuclear deterrence and has renounced the 'no first use' principle.

The April 2000 military doctrine also identifies three main types of future conflict: local

wars (e.g. the conflict in Chechnya), which have a potential to escalate into 'regional war' (e.g. the 1991 Persian Gulf war or the 1999 Kosovo conflict), which could escalate into 'large-scale war', involving a significant number of states from different regions of the world. A large-scale war, using only conventional weapons, is perceived by the Russians as having by a high probability of escalating into a nuclear war (Main, 2000, p. 3).

Russian policymakers thus believe that even a regional conflict has the potential for creating a critical situation for Russian national security, thus raising the prospect of nuclear first use against adversaries. The April 2000 doctrine states:

The Russian Federation will not use nuclear weapons against states party to the Non-Proliferation Treaty that do not possess nuclear weapons, except in the event of an attack on the Russian Federation, the Russian Federation armed forces or other troops, its allies or a state to which it has security commitments that are carried out, or supported by, a state without nuclear weapons jointly or in the context of allied commitments with a state with nuclear weapons.

In effect, Russia reserves the right to use nuclear weapons if a regional or local war threatens Russia itself, its armed forces, its key allies, or states with which it has security commitments.

Russia faces a number of challenges in putting such a policy into practice. A key problem is lack of money to sustain a high level of deployed warheads. Russia's nuclear forces may shrink to 1,500 deployed warheads by 2010 if funding is not increased. The correlation of nuclear forces between the Russian Federation and the United States increasingly will swing in favour of the United States, raising the danger of a Russian perception of an emergent US 'first strike' capability.

Another key problem is the decline of Russia's command and control system and early warning capabilities. A lack of maintenance, as well as the loss of key warning sites that were once located in the Soviet Union but are now beyond Russia's borders, have left significant gaps in Russia's early warning coverage of the United States. US ICBM fields and submarine-launched ballistic missile (SLBM) launch areas are no longer under observation by early warning satellites or radars during part of each day (Blair, 1993, pp. 212–13). Electric power cuts to command and control facilities, personnel shortages, and poor morale have contributed to a general decline in Russia's ability to maintain control over its forces, to give sufficient early warning of a nuclear attack, or to discriminate between a 'false alarm' and a real attack.

As a result of Russia's declining force levels and reduced early warning capability, some Western analysts are concerned that Russia's nuclear forces are locked into a 'launch on warning' posture. They believe that the consequences of Russian misperceptions or an unstable correlation of nuclear forces becomes even more critical if the United States proceeds with deployment of a robust national missile defence (NMD) system. (See Chapter 10.) The deterrent capability of an ageing Russian nuclear force would be diminished in the face of a modernized US strategic nuclear capability, supported by an NMD system that potentially could destroy a substantial number of Russian ballistic missiles. Deteriorating Russian command and control networks and early warning systems combined with US NMD could cause Russian leaders to feel dangerous escalatory pressures during a crisis.

Nuclear weapons and the People's Republic of China

China's nuclear forces will emerge as a primary source of concern for US strategic forces in the twenty-first century. China has been modernizing its nuclear capabilities over the last two decades of the twentieth century, and its efforts are beginning to produce results. Two new ICBMs—the Dong Feng 31 and the Dong Feng 41—are in development. Both are solid-fuelled, road-mobile missiles capable of carrying multiple independently targetable reentry vehicles—MIRVs. A new class of SSBN, the Type 93, along with a new SLBM, the Ju Lang 2, is under development, with the new missile capable of carrying multiple warheads (Caldwell and Lennon, 1995). The development of new mobile ICBMs capable of carrying accurate MIRVs, and new MIRVed SLBMs on a more capable SSBN reinforces the ability of Chinese nuclear forces to survive a first strike, penetrate missile defence, and strike the United States.

Nuclear force modernization raises the question of whether China is moving away from a minimum deterrent posture against the United States based on 'countervalue' targeting of cities, towards some form of war-fighting posture geared to 'counterforce' targeting of US strategic nuclear forces. Alternatively, China may pursue a 'differentiated' strategy. China might continue to maintain a 'minimum deterrent' directed against the United States, while sub-strategic nuclear forces are employed in a coercive role against regional competitors such as Japan and India.

Any move towards a counterforce posture directed against the United States, Japan, or India would require China to reconsider its 'no first use' pledge. The pledge highlights the defensive posture of China's nuclear forces, according to Lt. Gen. Li Jijun:

China's nuclear strategy is purely defensive in nature. The decision to develop nuclear weapons was a choice China had to make in the face of real nuclear threats. A small arsenal is retained only for the purpose of self-defence. China has unilaterally committed itself to responsibilities not yet taken by other nations, including the declaration of a no-first-use policy, the commitment not to use or threaten to use nuclear weapons against non-nuclear states and in nuclear-free zones . . . In short, China's strategy is completely defensive, focused only on deterring the possibility of nuclear blackmail being used against China by other nuclear powers (Manning, Montaperto, and Roberts, 2000).

It is uncertain if China's pledge not to use nuclear weapons against non-nuclear states applies to Taiwan, because China's leaders view Taiwan as a rogue province. Thus, in a future conflict with Taiwan, China might employ nuclear weapons against the island to destroy Taiwanese military capability or in 'electromagnetic pulse' (EMP) attacks to neutralize command and control capabilities without causing substantial damage or casualties.

The deployment of an NMD system by the United States is a source of concern for Chinese strategic planners. Even a very limited NMD system or a regional theatre missile defence (TMD) system might reduce the effectiveness of the current Chinese nuclear arsenal. NMD deployment would require China to increase the number of nuclear warheads it aims at the United States to maintain a minimum deterrent posture.

Emergent nuclear weapons states

Any build-up in numbers of nuclear warheads and delivery systems by China will have a direct impact on **India**'s nuclear weapons capabilities. India acquired nuclear weapons partly in response to Chinese military threats to disputed territories along the two states' common borders. The 1998 nuclear tests saw India officially 'go nuclear' as a response to growing Chinese capability, and for reasons of national prestige and domestic politics. A Chinese nuclear build-up would lead India to maintain the current strategic balance of forces, potentially sparking an arms race between the two Asian giants. Estimates in late 1999 put India's nuclear potential at around 400 warheads, based on a triad of solid-fuelled mobile ballistic missiles, SLBMs, and long-range strike aircraft. **Pakistan**, another nuclear power in the region, would respond to any Indian strategic build-up—possibly with Chinese or perhaps North Korean assistance—by increasing its nuclear capability. In other words, a nuclear arms race in Asia could quickly become three-sided. Unlike the US-Soviet nuclear balance of the Cold War, the geo-political dynamics of a Pakistan-India-China nuclear balance are more unpredictable. The continuing confrontation between India and Pakistan over Kashmir adds to the potential for tension, conflict, and an early use of nuclear weapons.

US attention also is focused on Iran, Iraq, and North Korea, which are seeking to acquire nuclear weapons. US officials fear that these states also might pass on expertise and weapons technologies to non-state actors. **North Korea** has a minimal nuclear capability, which was contained but not removed by the **1994 Agreed Framework** signed by North Korea and the United States. Pyongyang continues to develop long-range ballistic missiles such as the Tapeo Dong 1 intermediate-range ballistic missile (IRBM) and the Tapeo Dong 2 ICBM. The latter would be capable of delivering a nuclear warhead to anywhere in the United States by 2005 (Lavoy, Sagan, and Wirtz, 2000, pp. 6–7). **Iran** is seeking to acquire nuclear weapons by 2003 and may already have a nuclear capability, thanks to Russian and Chinese 'unofficial' assistance with reactor technology. Iran also is receiving assistance from North Korea, Pakistan, and China to develop long-range ballistic missiles capable of delivering nuclear, biological, and chemical warheads throughout the Middle East and beyond. **Iraq** had an active nuclear weapons programme under way before the 1991 Persian Gulf war, and was within months of achieving an operational capability when the war broke out. With the collapse of the United Nations Special Commission (UNSCOM) inspections in December 1998, and only a limited International Atomic Energy Agency (IAEA) inspection in January 2000, Iraq has had considerable time to reconstitute its WMD research projects, including its nuclear weapons programme.

Any Iranian or Iraqi nuclear capability would be a direct threat to **Israel**, which maintains a nuclear arsenal of approximately 200 warheads based on Jericho I and II IRBMs and tactical aircraft such as the F-15E and F-4 Phantom. Israel has threatened to launch 'preventative' strikes against Iranian nuclear facilities before Iran can achieve an operational nuclear capability. This Israeli threat should not be taken lightly. In 1981, Israel bombed Iraq's Osirak nuclear reactor, delaying the Iraqi acquisition of nuclear weapons by around ten years. (See Box 11.4 for a summary of the WMD capabilities of various nations.)

BOX 11.4   PROLIFERATION OF WMD CAPABILITIES

	Nuclear capability?	Chemical weapons (CW) capability?	Biological weapons (BW) capability?
Russia	Large-scale strategic and theatre-tactical—decreasing nuclear capability as a result of budget constraints	Full offensive and defensive chemical weapons capability	Soviet-era BW programme largest in world, suspicions remain of large-scale active BW programme, including advanced genetic-engineered weapons capability
China	Minimal strategic nuclear deterrent, emergent counterforce capability, substantial theatre-tactical capabilities	Full offensive and defensive CW capability	Active BW programme
Iran	No known nuclear capability but major weapons development programme with Russian, Chinese and North Korean, and West European assistance	A large-scale CW capability including blood, blister, and choking agents	An active BW programme begun during Iran–Iraq war, assistance from Russia and Western Europe
Iraq	No known nuclear capability, but lack of on-going IAEA inspections and the collapse of UNSCOM in December 1998 have given Iraq over two years to rebuild its pre-Gulf war WMD programme	See Nuclear	See Nuclear
North Korea	North Korea estimated to have 1 or 2 nuclear weapons, though some defectors claim fissile material is available for more	Large-scale CW capability including blood, blister, choking, and nerve agents	North Korea maintains an active BW research programme
Libya	No nuclear weapons capability, though Russian assistance may allow Libya to resume weapons development	Libya remains heavily dependent on foreign support for its CW capability. Support is primarily coming from Western Europe	No known BW capability
Syria	No nuclear weapons programme	Known to have Sarin and is seeking to develop more lethal and persistent agents	No known BW programme

BOX 11.4 continued

	Nuclear capability?	Chemical weapons (CW) capability?	Biological weapons (BW) capability?
Sudan	No nuclear weapons programme	Sudan has a minimal CW capability as a result of help from Iraq	Potential BW capability
India	Significant nuclear weapons capability—multiple nuclear tests in 1998, weaponization of nuclear capability and development of Agni and Prithvi ballistic missiles under way	No known CW capability	Possible BW programme at Ahmadabad and Mukteswar with Russian assistance
Pakistan	Significant nuclear weapons capability—multiple nuclear tests in 1998 in response to Indian nuclear tests. Development of Ghauri and Hatf ballistic missiles. Significant Chinese assistance	No known CW capability	No known BW capability
Egypt	No nuclear weapons programme	CW capability	No known BW capability
Cuba	No nuclear weapons programme	Probable CW capability	BW programme with Soviet assistance known to exist up to 1990

Source: Information drawn from CDISS Missile Threats and Responses, http://www.cdiss.org/; CDI Nuclear Database, http://www.cdi.org/; Federation of American Scientists, http://www.fas.org.

KEY POINTS

- Far from being an obsolete 'Cold War' capability of little value, WMD are viewed by a range of state and non-state actors as 'the great equalizer' to Western (and specifically US) technological and military superiority.

- The decision whether or not chemical and biological weapons are strategically equivalent to nuclear weapons will affect not only the manner in which states with nuclear weapons respond to chemical or biological attack, but also their deterrent posture.

- Although both the United States and Russia have reduced their nuclear arsenals, both maintain their remaining forces to deter each other, and both states see nuclear weapons as crucial elements of their military capabilities.

- China is modernizing and expanding its nuclear arsenal, which will allow it to move away from minimum deterrence and towards either a counterforce posture, or a differentiated deterrent posture.

The future of weapons of mass destruction

If the threat of global thermonuclear war was the defining danger facing the international community from 1945 to 1991, then the threat of deadly biological attacks waged with genetically engineered super-viruses may be the nightmare peril in the years ahead. The threat posed by Saddam Hussein's chemical and biological weapons during the 1991 Persian Gulf war, and the 1995 nerve gas attack on the Tokyo subway by the Japanese religious group Aum Shinrikyo, has focused public perceptions on new dangers. In particular, biological weapons (BW) are seen as a 'poor man's atom bomb'. They can produce horrific casualties at little cost. Chemical and biological warfare also appear suited to employment by 'superterrorist' groups that seek to cause mass casualties. (See Chapter 9.)

A chemical or biological attack is likely to occur with little or no warning, cause mass death very rapidly, and leave no clear clue as to who or what group instigated the attack. This raises the problem of how to deter and defend against such attacks, given that a retaliatory response requires an address for delivery. Biological weapons could be employed covertly, so that an attack might only be apparent days after the release of biological agents, by which time the perpetrators would have disappeared. It is the spectre of an unseen enemy equipped with biological weapons that has motivated many analysts to identify biological weapons as the dominant concern for security planners in this new century.

Biological weapons include bacteria, toxins, viruses, and rickettsiae highly lethal to human beings. The most commonly known are bacteria such as anthrax, plague, and tularemia, and toxins such as botulinum toxin. Viruses that might be made into weapons include Ebola, Marburg, and smallpox. Delivery systems can range from ballistic and cruise missiles to battlefield rocket and artillery shells, to spray tanks mounted on aircraft, and ultimately terrorist delivery within a confined space, or across a city.

These agents are naturally occurring and are deadly to humans even without being **weaponized**. Genetic engineering, however, can produce battle strains that may be more resistant to vaccines and antibiotics, have a higher **epidemicity** or **infectivity**, can survive in a harsher environment, and are more difficult to detect and identify. Through genetic engineering, a virus can be tailored to attack a particular target based on a genetic identity (e.g. to be lethal to people only with a dark skin) thus raising the horrific prospect of 'racial weapons' (Barnaby, 1997). In addition, biowarfare specialists can employ 'gene splicing' and 'recombinant DNA' techniques to combine agents to produce new weapons—so-called chimera agents. A non-fatal virus such as influenza or the common cold could be combined with the genetic structure of a lethal toxin such as rattlesnake venom and spread by a human cough or sneeze. There is substantial evidence from senior Russian biowarfare officials that the Soviet Union's biological weapons programme experimented with a combination of Ebola and smallpox, as well as with weaponization of the Marburg virus (Alibek and Handelman, 1999; Mangold and Goldberg, 1999). The Ebola-smallpox chimera agent would have an incubation period of 16 days before the first symptoms appeared, a very high infectivity from the moment of exposure, and high lethality (between 50 per cent and 90 per cent) with no cure or vaccine available. Given aerobic transmission and high epidemicity provided by the smallpox element of the chimera, such a weapon could inflict casualties in the hundreds of millions within a space of a few days to weeks if disseminated effectively—perhaps via terrorist delivery into national transportation networks or by long-range ballistic missile.

Chemical weapons (CW) remain a real source of concern for military forces on the battlefield. Unlike biological weapons which kill by infecting the human body with a lethal disease or toxin, chemical weapons can attack: the nervous system directly (nerve agents such as Sarin, Soman, and VX); the ability of blood to process oxygen (blood agents such as hydrogen cyanide); the epidermis, mucous membranes, and tissues (blister agents such as mustard gas, and Lewisite); and the respiratory system (pulmonary agents such as phosgene). In all cases, only a minute amount of chemical agent is necessary to cause death within a matter of minutes. Nerve agents such as VX are so toxic that a lethal dose is the size of the full stop at the end of this sentence. Yet in comparison to biological agents, chemical weapons require far more agent per person to ensure a lethal dose. Pound for pound, gram for gram, biological weapons are far more lethal killers and are thus the greater threat. Box 11.5 summarizes the effects of chemical and biological weapons.

From a **nonproliferation** perspective, biological and chemical weapons are difficult to control. They can be produced at relatively low cost in comparison with nuclear weapons. Because production of chemical and biological agents can be masked inside legitimate chemical industries, biological research centres, or even national health care facilities, monitoring and verification of arms control measures to limit the spread and development of chemical and biological weapons are difficult, if not impossible. Many of the components of chemical and biological weapons are **'dual use' technologies**. For example, chemical components of a particular nerve agent also may be used to produce non-military chemical substances, or the fermentation of anthrax bacteria can easily be accomplished using the same equipment designed to grow yeast or ferment beer.

BOX 11.5 EFFECTS OF WEAPONS OF MASS DESTRUCTION

Chemical	Biological (non-engineered)
Nerve agents—(persistent): Convulsions, cessation of breathing, vomiting, paralysis, death within minutes if not treated. A minute amount is lethal.	**Bacterial**—Usually in the form of dry powder or spores. Far more lethal per pound per agent than CW due to smaller lethal doses, infectivity, and epidemicity.
• Novichok (Russian agent recently developed)	• Anthrax: Cutaneous or inhalational, incubation period 1–7 days, death from inhalational form within 24 hours, fatality rate 90% if untreated, low epidemicity. Symptoms include fever, shock, and formation of malignant pustules on skin, difficulty in breathing, tachycardia, cyanosis, and death.
• VX	• Plague (Bubonic or Pneumonic Plague/'The black death') Incubation period is 1–6 days, death within 1–2 days, fatality rate is 70% for pneumonic plague and 40% for bubonic plague. Symptoms include high fever, headache, glandular swelling, haemorrhages in skin and mucous membranes, extreme lymph node pain, haemorrhagic pneumonia.
• Tabun (GA)	
• Sarin (GB)	• Tularaemia: Incubation period is 2 to 10 days, highly infectious. Lethality rate varies according to particular strain. Symptoms include sudden onset of chills, fever, headache, muscle aches, fatigue, loss of body fluids. Skin infections characterized by deep ulcers on skin.
• Soman (GD)	

BOX 11.5 continued

Chemical	Biological (non-engineered)
Blister agents (semi-persistent): Hours after exposure symptoms include eye irritation, burning of the skin, difficulty in breathing. Lewisite and CX produce severe pain, which does not decrease but increases. Skin damage leading to large blisters, damage to eyes, airways, and internal organs. • Distilled Mustard (HD) • Nitrogen Mustard (HN) • Sulfur Mustard (H) • Phosgene Oxime (CX) • Lewisite (L) **Choking agents** (semi-persistent): Shortness of breath growing worse, coughing becoming severe hacking cough with large amounts of clear frothy sputum. Rapid fluid loss. • Diphosgene (DP) • Phosgene (CG) • Chlorine (CL) • Chloropicrin (PS) **Blood agents** (semi-persistent): Dizziness, weakness, anxiety, loss of consciousness, convulsions, cessation of breathing, paralysis, and death within minutes of a large dose. • Hydrogen Cyanide (AC) • Cyanogen Chloride (CK)	**Viral**—Usually powder or liquid—ideal for genetic engineering. • Ebola Virus—transmissible by touch or possibly inhalational. Incubation period of 2–21 days. Fatality rate of 90%. No cure or vaccine. Sudden onset of fever, weakness, muscle pain, followed by vomiting, diarrhoea, rash, limited kidney and liver functions, both internal and external bleeding five days after symptoms begin. Finally convulsions and 'bleed out' through spontaneous tears in the skin, spreading infected blood throughout the immediate area. The body liquefies, sloughing off the skin, the brain divides as the virus consumes the body. • Smallpox—High infectivity and epidemicity as well as suitability for 'chimera virus' engineering (i.e. smallpox-Ebola chimera). Incubation period averages 12 days. Lethality averages 30%. Symptoms include high fever, malaise, rigors, vomiting, aches, and delirium. Skin rash covers the body, which becomes pustules. **Rickettsiae**—Mainly incapacitating agents, usually not lethal. • Rickettsia Prowsecki—Endemic Typhus—incubation period of 6–14 days. Symptoms include headache, high fever, general aches and pains, chills, and rash. • Coxiella Burnetti (Q Fever)—2–3-week incubation period. Sudden onset of fever, headache, chills, weakness, perspiration, upper respiratory problems, coughing. **Toxins**—Usually liquid, mainly lethal. • Botulism—Incubation period is 1–12 hours, lethality is 60% if untreated. Death from muscle paralysis and asphyxia. • Ricin—Incubation is 1–12 hours, death within 36–48 hours from failure of respiratory and circulatory system

Source: Information taken from Sidell, F., and Patrick, W., *Jane's Chem-Bio Handbook* (Alexandria: Jane's Information Group, 1998).

Restrictions on the sale and transfer of such **'precursor'** substances for chemical and biological weapons are difficult to justify because they commonly are used in legitimate industrial or pharmaceutical production. Furthermore, it is relatively easy to produce large-scale biological capabilities, as many of the bacteria, toxins, and viruses are easily available in nature, and can be 'weaponized' without a high level of military technology.

How would such weapons be used? Chemical and biological weapons could allow an adversary either to deny access to enemy forces by attacking 'points of entry'—ports and airbases—with persistent agents (the effects of which linger for long periods). The threat of chemical or biological attack also could be used to coerce regional states to refuse political support for US and allied military intervention. In an age of **'post-heroic' warfare**, minimizing casualties and collateral damage is a primary concern of the United States and its allies. The mere threat of heavy casualties caused by chemical and biological attacks may suffice to induce 'strategic paralysis', especially if domestic support for an intervention is uncertain, or the intervention is not seen as vital to the national interest (Haass, 1999).

KEY POINTS

- The emergence of modern chemical and biological weapons heralds a new age in the evolution of WMD. Chemical and biological weapons are cheap, effective, difficult to control or detect, and virtually impossible to deter if used in a covert manner.

- Genetic engineering can be used to modify biological weapons, to be more lethal, more survivable, less easy to detect, and more selective in whom they kill. Combinations of biological agents can be produced to create entirely new agents of far greater lethality than diseases existing in nature. They are best suited for attacking urban areas and large military facilities.

- Chemical weapons can be highly effective on the battlefield against expeditionary forces.

Conclusion

Security communities shift with advances in science and technology. Research in the natural sciences inexorably shows up in the development of weapons and supporting systems. The past century and a half has witnessed huge advances in chemistry, physics, and now biology. The WMD of today and tomorrow are the products of the growing scientific knowledge of our civilization.

The nuclear era thus far records two distinctive 'nuclear ages,' that of the Cold War, and that of the years since. Once the weapons of the strong, WMD have become the weapons of the weak. US conventional military prowess places a high premium on WMD as tools of so-called asymmetrical strategies (Freedman, 1998, ch. 3). WMD have huge appeal as an equalizer to the sharp US conventional sword.

Speculation about expressively post-modern 'catastrophe terrorism' has been rife in recent years. Happily, historical experience to date of actual use of all kinds of WMD has been small. Theorists note accurately how new biotechnologies could enable small groups of fanatics to make a political point entailing the death of millions (Shubik 1997). It is not difficult to imagine catastrophic perils from WMD to which there are no practical reliable solutions. Notwithstanding such grim possibilities, however, dangers can be reduced by prudent strategic thought and behaviour.

QUESTIONS

1. Is it feasible or desirable to abolish nuclear weapons?

2. Compare the probable benefits and costs to a state of acquiring nuclear weapons.

3. Are biological, toxin, and chemical weapons the strategic equivalent of nuclear weapons?

4. Has the Nuclear Non-Proliferation Treaty been a success?

5. Can emergent WMD states be deterred through means other than the threat of use or actual use of nuclear weapons?

6. To what extent is the operational utility of nuclear weapons shaped by their non-use through deterrence?

7. Should NWS consider pre-emptive or preventive use of nuclear weapons to counter known and imminent WMD threats if conventional weapons prove insufficient to eliminate such a threat—or does a 'nuclear taboo' demand that the adversary be allowed the first blow?

8. Why is the threat of an 'asymmetric response' by non-state actors so significant for the powerful NWS?

ENDNOTES

1. Paul, Harknett, and Wirtz (1998) and Baylis and O'Neill (2000) are useful collection of essays which cover most major camps of contemporary opinion on nuclear weapons.

2. On the proliferation of ballistic missiles see Commission (1998).

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www.fas.org/nuke/ Home page of the Federation of American Scientists Nuclear Resources site.

www.cdi.org/ Home page of the Center for Defence Information—large number of nuclear links—though CDI tends to suggest a minimal or abolitionist approach to nuclear weapons.

www.nautilus.org/nukepolicy/index.html The Nautilus Institute Nuclear Policy Page—an excellent site giving an up-to-date perspective on nuclear issues, as well as an excellent mailing list service.

www.bullatomsci.org/ The Bulletin of the Atomic Scientists, including access to the Natural Resources Defense Council Nuclear Notebook.

www.ransac.org/new-web-site/index.html The Russian-American Nuclear Security Advisory Council—excellent up-to-date site covering all things nuclear between Russia and the United States. A very good mailing list service.

www.cdiss.org An excellent site covering proliferation issues, focusing on missile proliferation in particular.

www.nbc-med.org/ie40/Default.html Web site covering nuclear, biological, and chemical weapons (NBC) with emphasis on biological and chemical weapons.

www.cbaci.org/ The Chemical and Biological Arms Institute web site.

Humanitarian Intervention and Peace Operations

Theo Farrell

READER'S GUIDE

The international community recently has found the will and resources to do something about murderous and failed states. Where humanitarian intervention was previously rare and considered illegitimate, the United Nations began sponsoring and organizing numerous large-scale peace operations once the Cold War ended. This chapter begins by considering the transition from traditional peacekeeping to more ambitious post-Cold War peace operations. It focuses on the balance between maintaining consent for peace operations while also being prepared to use force to neutralize those seeking to wreck peace agreements and oppose humanitarian missions. The chapter draws a distinction between intervention optimists and intervention pessimists. A real policy dilemma divides these views—the desire to do much and the risks of mission failure—which is examined in the context of Somalia and Rwanda. In examining the politics of humanitarian intervention, the chapter looks at the impact of public opinion and the role of Security Council politics. It explores the military character of peace operations by first considering the applicability of the main principles of war, and then looking at how, in practice, peace operations are shaped by political imperatives. The prospects for peace operations look hopeful with a return to intervention optimism in the international community, but significant problems remain especially with regard to under-funding of the United Nations.

Introduction

Humanitarian intervention is directed toward providing emergency assistance and protecting fundamental human rights. Humanitarian intervention often comes through non-military means: emergency aid in the form of money, medicine, food, and expertise, and human rights promotion through diplomacy and sanctions. When reporters and policymakers speak of humanitarian intervention, however, they usually mean 'forcible military intervention in humanitarian crises'. Such intervention is necessary in failed states when ongoing conflict threatens aid operations, and against murderous states to stop massive human rights abuses. To these ends, the intervening forces may undertake a variety of peace operations aimed at creating security and suppressing conflict.

Humanitarian intervention is a post-Cold War activity. During the Cold War, it was rare for three reasons.[1] First, the Soviet–American stand-off dominated international politics. The great powers focused their military efforts on the bilateral struggle, building up massive deterrent forces for this purpose. The great powers did intervene in Third World conflicts, but this was for the purpose of supporting loyal, or undermining opposing, client states. Such military intervention served to fuel these proxy wars rather than stop them. The great powers also funded and armed client states engaged in massive human rights atrocities. Second, there was insufficient public pressure for the great powers to do anything to ameliorate Third World conflicts. Eastern and Western publics were indoctrinated into viewing these conflicts and client states as elements of a larger Cold War battle, in which human rights could be sacrificed in the interests of national security. Third, Cold War politics prevented international collaboration in suppressing Third World conflicts or punishing murderous states, chiefly by paralysing the UN Security Council (UNSC). To be legal, forcible military intervention in humanitarian crises must be authorized by a resolution of the Security Council. UNSC resolutions, however, can be vetoed by any one of the permanent five members (P5). With the P5 split along the Cold War divide—Britain, France, the United States versus the Soviet Union and later communist China—each side traded vetoes (279 in all during the Cold War).

The last decade of the twentieth century saw an unprecedented increase in the number and scale of military interventions by United Nations forces: this has been called the **new interventionism**. Between 1988 and 1993 alone, 20 new peacekeeping missions were established. At the same time, the size of the annual UN peacekeeping budget shot up from US$230 million in 1988, to between US$800 million and US$1.6 billion throughout the 1990s. Spurring this increased activity was the end of the Cold War, which created the demand, opportunities, and incentives for UN-sponsored humanitarian intervention. A series of regional peace agreements in Afghanistan, Angola, Namibia, Central America, and Cambodia accompanied the winding down of bipolar tensions, and these demanded peacekeeping forces to supervise ceasefires, military demobilization, and elections. The opportunities to respond to this demand materialized with increased great power cooperation in the UNSC beginning in 1985, and with the freeing up of military capability for peacekeeping duties. Incentives for humanitarian intervention have come from public pressure on Western governments to do something about large-scale civilian suffering in failed and murderous states.

As humanitarian interventions have grown in size and frequency, they also have increased in importance to strategic studies. Traditionally, strategic studies has devoted little attention to such low-intensity conflict, focusing instead on war between major regional powers and the nuclear-armed superpowers. However, given **the new interventionism**, students and scholars must follow soldiers and statesmen in trying to understand the dynamics of humanitarian intervention. This chapter begins by discussing the transition from traditional peacekeeping to post-Cold War peace operations. The second section describes the tension between intervention pessimism and intervention optimism in the context of the two great failures in post-Cold War UN humanitarian intervention: Somalia and Rwanda. The third section explores how domestic public opinion and UN Security Council politics shape international responses to humanitarian crises. The fourth section examines the military character of peace operations, in particular how they contradict the principles of war and are adversely affected by domestic political imperatives. The concluding section considers the problems and prospects for humanitarian intervention and peace operations.

From peacekeeping to peace operations

The UNSC authorized a few military deployments of limited size and scope during the Cold War to undertake traditional peacekeeping. Commonly referred to as **'Chapter VI and a half'** activity, traditional peacekeeping is seen to lie somewhere between Chapter VI of the UN Charter on 'Pacific Settlement of Disputes' and Chapter VII, which provides for use of force by the United Nations to uphold international peace and security. Traditional peacekeeping missions were deployed only when a conflict had ceased and with the consent of the belligerents. They typically served to monitor ceasefires and supervise truces; occasionally, peacekeeping missions were deployed to keep belligerents apart as in Cyprus in 1964. These missions relied on their impartiality and the goodwill of the parties concerned to fulfil their mandate. Accordingly, they were small in size and lightly armed, typically comprising contingents from neutral and non-aligned states. Between 1948 and 1978, 13 such missions were established, with none for the decade thereafter. Only once during the Cold War did the United Nations authorize a US-led peace enforcement mission under Chapter VII; in 1950 against North Korea.[2] On another occasion, the UNSC permitted the peacekeeping mission in the Congo (1960–4) to turn into a peace enforcement operation to restore public order and protect the government.

In contrast, the UN humanitarian interventions of the post-Cold War era have been much larger, more complex affairs than previous missions. These new interventions have involved a much wider range of tasks, including protecting territory, people, and aid operations, disarming belligerents, policing demilitarized sites and monitoring demobilization, monitoring and running elections, and helping to reconstruct governments, police forces, and armies. The British Army initially called these operations **'Wider Peacekeeping'**. This term not only reflected the wider range of operational tasks involved, but also recognized that such peacekeeping operations occupied a grey area between

traditional peacekeeping and peace enforcement. Not all aspects of these multitask missions had the full consent of all the involved parties. Whereas consent was central to traditional peacekeeping, it was not to the new breed of wider peacekeeping. Peacekeepers had to be able to threaten and to use force to achieve their mandate; if necessary, they needed to be able to force aid through to the starving, to repulse attacks on civilians, to forcibly disarm troublemakers, and to arrest war criminals.

In fact, the British Army's interim doctrine on *Wider Peacekeeping* (1995) was designed to caution policymakers and the public about the costs of using force in peacekeeping (unusually for military doctrine, a glossy version was on sale at bookshops). Critical here is the relationship between consent, force, and impartiality. *Wider Peacekeeping* distinguished between the tactical and operational level of consent for peacekeeping missions. It argued that should consent be withdrawn at the tactical level, where one or more belligerent groups obstruct peacekeepers in the field, small amounts of force could be used to keep the mission on track. It warned, however, that excessive use of force could result in a collapse of consent for the mission as a whole. Under such circumstances, the mission would have crossed the **'consent divide'**, undermining its credibility as an impartial peacekeeping force and prejudicing mission legitimacy in the eyes of the belligerents. Uncontrolled escalation in violence (including attacks on peacekeepers) was bound to follow.

Wider Peacekeeping deliberately painted a bleak picture of what happens when a modest force is given an ambitious mandate. It came at a time when the British Army was being asked to do much in Bosnia with few resources on the ground. This doctrine also reflected the UN operation in Somalia, which took on one of the warring factions and lost. It certainly resonated with the first British commander of the UN force in Bosnia, General Sir Michael Rose, who referred to the consent divide as the 'Mogadishu Line'. General Rose later articulated that lesson: 'In Somalia, it has been well demonstrated that it was the move by the UN Force from peacekeeping to war-fighting which so terminally damaged the prospects of the Mission'. This attitude, reflected in *Wider Peacekeeping*, was unhelpful, however, when peacekeeping missions had no choice but to cross the consent divide into peace enforcement. *Wider Peacekeeping* rightly warned that this must be a deliberate act of policy, but gave little advice as to what should happen next. This was because the chief author of *Wider Peacekeeping*, Colonel Charles Dobbie (like General Rose), considered peace enforcement to be synonymous with war, and thus not the business of peacekeepers. In effect, Dobbie saw peacekeepers and peace enforcers as totally different creatures (see Box 12.1).

Dobbie's approach is too passive because it leaves peacekeepers dependent on the co-operation of the warring parties. Under such circumstances, peacekeeping missions can fall prey to **'spoilers'**—leaders and parties who believe that peace emerging from negotiations threatens their power, worldview, and interests, and use violence to undermine attempts to achieve it (Stedman, 1997, p. 5). Where spoilers are identified, peacekeepers must be able to engage in robust and aggressive action to bring them to heel. This option was discouraged by the sharp distinction between peacekeeping and peace enforcement drawn in *Wider Peacekeeping*. In contrast, the US Army grouped peacekeeping and peace enforcement under the category of **'peace operations'**. In its doctrine, *Peace Operations* (1994), many of the tasks originally viewed as wider peacekeeping by the British are

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BOX 12.1 PEACEKEEPER AND PEACE ENFORCERS AS PIGS AND PARROTS

[P]eacekeeping and peace-enforcement cannot be guided by a set of *common* principles. The peacekeeper to peace-enforcer is as referee to football player. The objectives of each are different. One is there to win, the other to ensure fair play . . . Like pigs and parrots, the differences between peacekeepers and peace-enforcers outweigh their similarities . . . Peacekeeping is depicted as a scaled-down version of peace-enforcement [in US military thinking]. The pig, in effect, is being regarded as small species of parrot. . . . [This] can lead to peacekeeping being subject to a set of common principles that impose combatant, adversary-orientated attitudes on the impartial third-party activities that constitute peacekeeping. Pigs are, as it were, being encouraged to fly.

Col. Charles Dobbie, 1994, pp. 121–48

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conceived as peace enforcement by the Americans. These tasks invariably involve coercing belligerents to comply with UNSC resolutions: in short, to use force to induce consent for peace operations. *Peace Operations* advises US commanders on how combat power can be used to **induce consent**. The British Army has since moved closer to this position. It now accepts that it must prepare to use force in peace operations, and that impartiality ought to be defined in relation not to the warring parties but to the mission mandate, that is, force will be used equally against all who threaten the mission.

The importance of being prepared to neutralize peace spoilers and thereby induce consent is well illustrated in the UN intervention in **Bosnia** (see Box 12.2). From 1992 to 1995, 7,000 military personnel deployed in Bosnia as part of the United Nations Operations in Former Yugoslavia (UNPROFOR) attempted to alleviate the suffering of civilians trapped in the midst of a war waged by Serbia and Croatia (in collusion with their Serb and Croat allies in Bosnia) against the new-born multi-ethnic and democratic Bosnian state. Under General Rose and with the support of the UN Secretariat in New York, UNPROFOR defined its principal mission as helping to deliver aid. Later, it was mandated by the UNSC to watch over six designated 'safe areas' in Bosnia. These were enclaves of Muslim civilians surrounded by the Bosnian Serb military. Under Rose, UNPROFOR was not prepared to use force to push aid through road blockades or to protect civilians (including those in so-called safe areas). During this time, UN policy amounted to a policy of **endless appeasement**; it relied on the goodwill of Bosnian Serb extremists to let aid through, protect defenceless Muslim civilians, and negotiate a peace. Yet these same Bosnian Serbs were bent on destroying multiethnic Bosnian democracy through a campaign of murder and terror against the Muslim population. Certainly, there was a dilemma facing UNPROFOR: calling in air strikes to punish Serb transgression would push it across the consent divide, yet it lacked the land power to defend aid convoys and safe areas against Serb retaliation. UNPROFOR's military weakness was exacerbated by a weakness in UN thinking which ruled out a military solution to the Bosnian crisis. Even when UNPROFOR was reinforced by an Anglo-French Rapid Reaction Force of helicopter gunships and artillery, the UN Secretariat was reluctant to get tough with Bosnian Serbs. Although it was militarily equipped to deal with Serb spoilers, UNPROFOR was conceptually ill equipped to do so. The final straw was the overrunning of two safe areas,

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BOX 12.2 THE UN's FAILURE TO STOP SERB SPOILERS IN BOSNIA

With the benefit of hindsight, one can see that many of the errors the United Nations made [in Bosnia] flowed from a single and no doubt well-intentioned effort: we tried to keep the peace and apply the rules of peacekeeping when there was no peace to keep. Knowing that any other course of action would jeopardize the lives of the troops, we tried to create—or imagine—an environment in which the tenets of peacekeeping—agreement between the parties, deployment by consent, and impartiality—could be upheld . . . None of the conditions for the deployment of peacekeepers had been met: there was no peace agreement—not even a functioning ceasefire—there was no clear will to peace and there was no clear consent by the belligerents . . . Nor was the provision of humanitarian aid a sufficient response to 'ethnic cleansing' and to an attempted genocide . . . The Bosnia Muslim civilian population thus became the principal victim of brutally aggressive military and paramilitary Serb operations to depopulate coveted territories in order to allow them to be repopulated by Serbs . . . In the end, these Bosnian Serb war aims were ultimately repulsed on the battlefield, and not at the negotiating table. Yet the [UN] Secretariat had convinced itself early on that broader use of force by the international community was beyond our mandate and anyway undesirable. In a report to the Security Council, the Secretary-General [Boutros Boutros-Ghali] spoke against a 'culture of death', arguing that peace should be pursued only through non-military methods. When, in June 1995, the international community provided UNPROFOR with a heavily armed rapid reaction force, we argued against using it robustly to implement our mandate. When decisive action was finally taken by UNPROFOR in August and September 1995, it helped to bring the war to a conclusion.

Kofi Annan, 1999

Srebrenica and Zepa, and slaughtering of the male civilian inhabitants by Bosnian Serb forces. Rose's replacement, British General Rupert Smith, decided that it was time to 'escalate to success'. In retaliation for Serbian shelling of Sarajevo (another 'safe area') in August 1995, he called in NATO air strikes. This military pressure in combination with military advances by Bosnian government and Bosnian Croat forces in Eastern Bosnia persuaded the Bosnian Serbs to sue for peace.

KEY POINTS

- Limited traditional peacekeeping operations have given way in the post-Cold War era to larger, more complex, and more ambitious wider peacekeeping operations.

- Critical to wider peacekeeping is the relationship between consent, force, and impartiality. If a peace operation uses too much force it risks losing its impartiality and crossing the consent divide into open conflict. At the same time, peacekeepers must be prepared to use sufficient force to counter peace spoilers and induce consent for the operation to succeed.

- The war dragged on in Bosnia because the United Nations pursued a policy of endless appeasement when it should have used force against Serb spoilers.

Intervention failures

The 'consent divide–induce consent' debate may be recast in more general terms as a clash of two perspectives: intervention pessimism versus intervention optimism. Intervention pessimism is the belief that little can be done about humanitarian disasters without the consent and co-operation of the major parties concerned; all is lost if the peacekeeping force crosses the consent divide. Intervention optimism is the belief that the international community can forcibly rebuild failed states and reform murderous ones; operational success depends on the ability to induce consent if required. The tension between these opposing perspectives was played out in the cases of the two greatest failures in post-Cold War humanitarian intervention: Somalia and Rwanda. Intervention optimism led the United Nations to launch a recklessly ambitious operation aimed at disarming Somalia and reconstructing the government. Intervention pessimism led the United Nations to do nothing to stop genocide in Rwanda. As we shall see, the UN should have done less in Somalia, and could have done much more in Rwanda.

Somalia (1992–1995)

The crisis in Somalia was generated by a combination of civil war and famine. The country descended into civil war in mid-1991, which was directly responsible for the deaths of tens of thousands of civilians. Much worse was the deadly famine that gripped Somalia in 1992. War and general lawlessness was making it dangerous and difficult for Western aid agencies to operate in Somalia. The deployment of a force of 550 Pakistani peacekeepers in mid-1992, designated United Nations Operations in Somalia (UNOSOM I), did little to improve things. UNOSOM I operated with the consent of the main Somalian warlords Since aid was power, however, the warlords were unprepared to let it flow freely.

Under intense pressure from UN Secretary-General Boutros Boutros-Ghali, and US-based aid agencies, the United States led a 37,000-strong United Task Force (UNITAF), including 28,000 US troops, into Somalia in early December 1992. Under UNSC Resolution 794, UNITAF was mandated to 'use all necessary means to establish as soon as possible a secure environment for humanitarian relief operations in Somalia'. UNITAF achieved this mission by setting itself the modest goal of creating demilitarized zones around aid operations (as opposed to the more ambitious goal of disarming the warring factions). It then used overwhelming military superiority to scare off armed groups from its area of operations. By its own measure, UNITAF was a success; aid reached the starving, and the famine receded.

UNITAF handed over its Somalia operations to a new 28,000-strong UN force, UNOSOM II, in mid-1993. UNOSOM II had a much more ambitious mandate: nothing less than the forcible disarmament of the warring factions and assistance in the reconstruction of the Somalian state (UNSC Res. 814). Boutros-Ghali had wanted to see a general disarmament that would produce lasting security in Somalia. The Clinton administration, which came into office in January 1993 full of optimism about multinational peacekeeping, was receptive to broadening the UN's role in Somalia. It soon became clear, however, that the new mandate put the United Nations on a collision course with the

Somali warlords. In June 1993, one Somali faction ambushed a UN patrol, killing 24 Pakistani soldiers. The UN responded by effectively declaring war on General Aideed, the warlord responsible for the attack; UNOSOM II was directed to 'take all necessary measures against all those responsible for the attacks' (UNSC Res. 837). It was a war the UN would lose. UNOSOM II spent the summer engaging in pitched battles with Somali gunmen, while an elite US Quick Reaction Force (QRF) buzzed around the Somalian capital of Mogadishu in helicopters, hunting for Aideed. Any goodwill on the part of the Somali populace towards the UN melted away as US helicopter gunships blew up buildings in their fruitless search. The mission ended in disaster when the QRF was ambushed on 3 October during a mission intended to capture top Aideed officials. US helicopters were shot out of the sky, and in the intense firefight that followed 18 US soldiers were killed, 78 were injured, and one was captured. That effectively ended the American involvement in Somalia; within months, US forces had pulled out. UNOSOM II dragged on until 1995, but without much UN heart or US backing, it achieved little.

Somalia is the 'Vietnam' of peacekeeping. Despite pouring money (US$1.6 billion), *matériel*, and personnel into the devastated country, the UN failed to restore long-term order and to rebuild the Somalian state. UNOSOM II tried to do too much with too little. It lacked the command capabilities and combat power of UNITAF, yet it was charged with doing something UNITAF had deliberately avoided: disarming the warlords. In the wake of the dramatic collapse of UNOSOM II, the modest achievements of UNITAF were forgotten.

Rwanda (1993–1994)

Over about 100 days, between April and July 1994, 800,000 people were massacred in Rwanda. This humanitarian crisis was caused by a power struggle in the early 1990s between ethnic Hutu extremists and Hutu and ethnic Tutsi moderates, which broke out when the Hutu-dominated regime of President Juvenal Habyarimana bowed to domestic and international pressure for the introduction of multiparty democracy. The regime sought to increase its base of support by bringing Hutu opposition parties into a transitional government. This occurred at a time when the government was under destabilizing military and economic pressure. The Tutsi army of the Rwandese Patriotic Front (RPF) had launched an invasion into Rwanda across the border of neighbouring Uganda, while a dramatic fall in export revenues combined with severe drought wrought havoc on the economy. Once in government, Hutu extremists who bitterly opposed any power sharing with those outside their group used their monopoly of the mass media to incite attacks against Tutsis and moderate Hutus, and to organize militias to carry out small-scale massacres. In reprisal, the RPF army launched an attack on the capital Kigali in 1993 that was only repulsed with French military support. After such a close call, Habyarimana was forced to sign a peace deal with the RPF that led to Tutsi inclusion in the government and the exclusion of Hutu radicals. This was the trigger for genocide in Rwanda. To retain power and avoid judicial accountability for complicity in attacks on Tutsi civilians, anti-democracy Hutu militants got rid of the President (by shooting down his plane on 6 April 1994) and began a systematic campaign of mass slaughter designed to eliminate all opponents and incriminate the entire Hutu population in the process.

A UN peacekeeping force, the 2,500-strong United Nations Assistance Mission for Rwanda (UNAMIR), was on the ground when the genocide started in early April. UNAMIR had been deployed with a very limited mandate (UNSC Res. 872) to monitor the ceasefire between the government and the RPF, and to assist in relief operations. Under-staffed, under-resourced, and unauthorized to use force to prevent war crimes, UNAMIR was overwhelmed by the horror that unfolded around it. Amidst the massacres, French, Belgian, and Italian troops arrived in force to evacuate Europeans but did not stay to save Rwandese. To make matters worse, the Belgian and Bangladeshi contingents of UNAMIR were withdrawn by their national governments (in Belgium's case, after 10 Belgian sol-diers were brutally murdered by a Hutu gang). The RPF retaliated by resuming its offen-sive against the Hutu authorities. The United Nations responded on 21 April by reducing UNAMIR to 270 personnel and focusing its efforts on re-establishing the ceasefire. It was not until 17 May that the UNSC adopted Resolution 918, expanding UNAMIR to 5,500 and authorizing it to protect the populace. UN member states were not forthcoming with these forces, however, and one month later UNAMIR was still only 500 strong. Eventu-ally, the genocide ran out of steam. The RPF managed to save some civilians by sweeping westwards across the country and pushing back the rampaging Hutus. On 9 July, the French deployed a force of 2,300 troops ostensibly to create a Humanitarian Protection Zone in the western corner of Rwanda, but in reality they created a barrier that protected their retreating Hutu allies who eventually fled across the border to (what was then) Zaire.

UN Secretary-General Kofi Annan (elected in 1997 and to a second term in 2001) acknowledged the UN's failure in Rwanda. Many suggest that the United Nations could have stopped the genocide in its tracks by rapidly deploying a small force of even 5,000 troops. This argument has recently been disputed by Alan Juperman in the leading US journal, *Foreign Affairs*. Juperman's counterargument focuses on the option of a US mili-tary intervention. He maintains that the earliest time that President Clinton could have been aware of the scale of the massacres was 20 April, two weeks after the genocide had started, by which time 250,000 people had already been slaughtered. The smallest con-ceivable US military deployment, a 2,500-strong Air Assault Brigade, would not have arrived before fourteen days; as Human Rights Watch acknowledged, 'the worst mas-sacres had finished by the end of April' (Juperman, 2000, pp. 94–118). Juperman, how-ever, downplays the option of beefing-up UNAMIR *prior* to the genocide. He disputes the argument that the UN had three-months' advance notice of genocide. Here he is refer-ring to a cable from the UNAMIR Force Commander, Major-General Roméo Dallaire, which reported high-level intelligence predicting the genocide as it actually unfolded. Juperman notes that Dallaire had doubts about the reliability of his informant (who happened to be Prime Minister Designate) and that '[r]aising further doubt, the cable was the first *and last* from Dallaire containing such accusations' (Juperman, 2000, p. 113 [emphasis added]). Juperman fails to note that Dallaire's political advisor reported to Kofi Annan, then Under-Secretary-General for Peacekeeping, his 'total, repeat total, con-fidence in the veracity and true ambitions of the informant'. Furthermore, Dallaire's command warned on 2, 15, and 23 February of the worsening security situation. The United Nations could have done a lot more to halt the genocide. That is the finding of the independent inquiry set up by Secretary-General Annan to investigate the UN response to the Rwanda crisis. In its report submitted to Annan in 1999, the inquiry found 'an

overriding failure [by the United Nations] to create a force with the capacity, resources and mandate to deal with the growing violence and eventual genocide in Rwanda'. Its conclusion is inescapable: 'The Security Council bears a responsibility for its lack of political will to do more to stop the killing'.

The shadow of Somalia

The debacle in Somalia is partly to blame for the failure of the UN to intervene in Rwanda. It explains why Secretary-General Boutros-Ghali and President Clinton started out inter-vention optimists but ended up intervention pessimists. The Secretary-General's first *Agenda for Peace*, published in 1992, was decidedly upbeat about the prospects for wider peacekeeping: it called on member states to provide more resources for such operations. Significantly, it defined peacekeeping as 'the deployment of a United Nations presence in the field, *hitherto* with the consent of all the parties concerned', implying that consent might not be required in future. President Clinton entered office in 1993 also seeking to expand America's commitment to multilateral peace operations. This was reflected in drafts of Presidential Decision Directive 25 (PDD-25), *The Clinton Administration's Policy on Reforming Multilateral Peace Operations*. Following the disaster in Somalia, Boutros-Ghali and Clinton both changed their tune. Boutros-Ghali's 1995 *Supplement to an Agenda for Peace* reasserts the crucial importance of consent, impartiality, and non-use of force to operational success. Equally, the final version of PDD-25 released in May 1994 stated that 'it is not US policy to seek to expand either the number of UN peace operations or US involvement in such operations'. The lack of political will, identified by the Independent Inquiry on the UN Response to Rwanda, was all too evident in Boutros-Ghali's failure to push the case for intervention, matched by US (and UK) obstruction in the Security Council of a rapid UN response.

KEY POINTS

- The debate between those who warn against crossing the consent divide and those who call for use of force to induce consent is essentially a debate between intervention pessimists and intervention optimists.

- The tension between intervention pessimists and intervention optimists was played out in the UN's two greatest intervention failures: Somalia and Rwanda. The UN failed in Somalia by trying to do too much; it failed in Rwanda by not doing nearly enough.

- UN Secretary-General Boutros-Ghali and US President Clinton started out as intervention optimists but turned into intervention pessimists following failure in Somalia. This resulting lack of political will prevented effective UN intervention in Rwanda.

The politics of humanitarian intervention

Politics gives identity to humanitarian crises, determining those that warrant international response. It selectively focuses international attention on human suffering and human rights abuses in certain places at particular times. Serbia's brutal repression of Kosovo triggered Western humanitarian intervention; Russia's brutal repression of Chechnya did not. Iraqi attacks on Kurds in 1991 resulted in the creation of a Kurdish 'safe haven' in Iraq guarded by thousands of troops and Allied air power, while even more murderous Iraqi attacks on Kurds several years earlier met with no international response. Politics operates at the level of domestic public opinion, and at the level of Security Council relations, to define crises and shape responses. Politics also shapes the speed and scale of humanitarian intervention.

Public opinion

It is commonly believed by policymakers and commentators alike that Western public opinion can make and break humanitarian interventions. Public opinion can prompt military intervention when the public responds to media images of massive suffering. Thus, 'extensive media coverage of emaciated Somalis ensured a suitable international outcry (the "Do Something" response)' (von Hippel, 2000, p. 59) and later in Bosnia, according to the US Special Envoy Richard Holbrooke, 'the reason the West finally belatedly intervened was heavily related to media coverage'. This is called **'the CNN effect'**, coined after the Cable News Network's blanket televised coverage of the Gulf war. At the same time, public support for humanitarian interventions is assumed to be conditional on minimal peacekeeper casualties. This is **'the bodybags effect'**, a reference to the impact that returning American war dead had on US public support for the Vietnam war. We may expect the public to be particularly sensitive to casualties in humanitarian interventions because these military actions are freely entered into by their government; in this sense, they are 'wars of choice', as opposed to 'wars of necessity' that must be fought to preserve national security. It also is widely believed that the bodybags effect is heightened in the television age, and that extensive media coverage of dead peacekeepers will lead to a collapse of public support for a mission. The CNN effect is thus perceived to be a 'double-edged sword'; the oft-cited example is Somalia, where US support collapsed following the deaths of 18 American soldiers (see Box 12.3).

As a concept, **'the CNN effect'** is quite misleading. It underestimates the extent to which governments can frame the media debate, and thereby choose the place and moment of intervention. Generally, governments will be least able to do this when they are uncertain as to the best policy to pursue (whether to intervene or not, and how), and when those lobbying for intervention are able to mobilize opposition politicians behind their cause. Disunity within the political establishment, be it within the executive or across the executive-legislative divide, not only reduces the executive's ability to influence the media debate, it also makes the public more responsive to media calls for intervention. In the case of Somalia, the CNN effect did operate because the Bush administration was uncertain what to do, and there was a powerful pro-intervention

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BOX 12.3 THE CNN EFFECT AS A DOUBLE-EDGED SWORD

The fact that the US pulled the plug on its Somali intervention after the loss of eighteen US Rangers in a fire-fight in October 1993 indicates how capricious public opinion is. Televised images of starving and dying Somalis had persuaded the out-going Bush administration to launch a humanitarian rescue mission, but once the US public saw the consequences of this in terms of dead Americans being dragged through the streets of Mogadishu, the Clinton administration was forced to announce a timetable for the withdrawal of all US forces from Somalia. What this case demonstrates is that the 'CNN factor' is a double-edged sword: it can pressurize governments into humanitarian intervention, yet with equal rapidity, pictures of casualties arriving home can lead to public dillusionment and calls for withdrawal.

Wheeler, 1997, pp. 400–1

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coalition comprised of US aid agencies and sympathetic members of Congress. In the case of Kosovo in 1999, the Clinton administration was able to resist media pressure for a US-led ground-force intervention to stop Serbian atrocities against ethnic Albanians. The administration was certain that it did not want to adopt such a policy, and opposition politicians in Congress also were against a ground intervention.

'**The bodybags effect**' is similarly misleading. Evidence from opinion polling suggests that peacekeeper casualties do not necessarily result in public calls for an immediate withdrawal. In the case of Somalia, most Americans favoured *increased* US military involvement following the killing of US soldiers. The polls also show that American public support depended primarily on evidence of Somali public support for US involvement in the UN mission, and much less on the number of US casualties. If ordinary Somalis wanted US troops to go home, then ordinary Americans saw little reason for their soldiers to stick around. But if Somalis appreciated what US forces were doing on their behalf, then most Americans were prepared to support the intervention even if there were US fatalities. America pulled out of UNOSOM II following the deaths of its soldiers because of an *anticipated* (rather than actual) collapse of US public support. US policymakers expected that their public would demand an immediate US withdrawal and acted to head off this public reaction. What the Somali case does reveal is the importance of domestic political unity in sustaining public support for interventions. Doubts were expressed in Congress about US involvement in Somalia in summer 1993 when UNOSOM II drifted into war against Aideed, and this resulted in a drop in public support for the mission; public support actually rallied in the short term following US casualties.

Rather than focusing on public sensitivity to casualties, it might be more useful to think in terms of **political sensitivity to casualties**. Governments will be sensitive to casualties when there is policy uncertainty and political disunity, which, in turn, will have already eroded public support for peacekeeping missions. There also is reason to believe that political sensitivity to the costs of military intervention may vary greatly from country to country. Just as the loss of 18 US soldiers ended America's involvement in Somalia, so the deaths of 10 Belgian troops caused Belgium to pull out of Rwanda. Pakistan, however, did not withdraw its contingent from UNOSOM II when it lost 24 soldiers, nor was Britain's commitment to its intervention in Sierra Leone in 2000 shaken by casualties.

This may have something to do with the political structure of individual countries, with some more likely to encourage and enable political disunity (e.g. sharing of powers and executive-legislative divide in the United States) than others (e.g. executive dominance of Parliament in Britain).

Security Council politics

The 15 members of the Security Council have the responsibility for authorizing humanitarian interventions. A majority of nine UNSC members is needed to take such a decision. However, real power resides with the P5, and their individual right of veto. Bipolar conflict among the P5 during the Cold War made the UNSC moribund as an instrument for managing international security. With the Cold War over, co-operation between the P5 has improved. Several political problems, however, still dog UNSC sponsorship of humanitarian interventions.

The P5 remain states with great power interests and aspirations. Where a particular humanitarian crisis is associated with a certain P5 member (or members), others may withhold their support or even threaten to veto a resolution for action unless they are given a quid pro quo that will further their interests elsewhere in the world. This is the 'log-rolling' problem. Thus, Russia, and later China, obstructed UNSC resolutions on peace operations in Haiti. Russia wanted UN endorsement of its own intervention in Georgia in 1994, while China was seeking a public apology from Haiti for inviting Taiwan's vice-president to the inauguration of Haiti's new president in 1996. Sometimes, great power differences can produce a **veto problem** when one P5 member refuses to contemplate a UN intervention that it considers threatening to its interests or aspirations. This was evident in Russia's approach to Kosovo in the late 1990s: Russia refused to recognize the humanitarian dimensions of the evolving crisis and was prepared to veto a UN intervention. This veto problem was solved through independent action by NATO, which argued that force was justified (even in the absence of any UNSC resolution) on the grounds of 'overwhelming humanitarian necessity'.

Even when the P5 agree to authorize the deployment of a UN peace operations force, two problems can still hinder effective UN intervention. The first is the P5 tendency to 'talk the talk' but not 'walk the walk'. The great powers acting through the UNSC often pass grand-sounding resolutions which they fail to back up with force. This is the *'posturing' problem*. The creation of 'safe areas' in Bosnia is a classic example; these areas were not at all safe, because the UNSC was not prepared to deploy additional military forces actually to protect them (see Box 12.2). In this case, several UNSC members as well as the UN Secretariat warned at the time that 'without the provision of any credible military threat' these safe areas were meaningless. But the great powers went ahead regardless and set up defenceless 'safe areas'.

Second, even when some of the P5 are prepared to 'walk the walk', they may disagree completely on which direction to take. Great powers may dispute the nature of the humanitarian crisis as well as the most effective response. This is the **co-ordination problem**, which again was evident in Bosnia. The United States and its European allies had different perceptions of the Bosnian conflict, which prevented them reaching any agreement on the appropriate response. On the one hand, the European powers saw an ethnic

conflict, the solution to which was some form of partition. The United States, on the other hand, saw it as a war started by Serbia and consequently were unprepared to support partition because this would reward Serbian aggression. It was only when this co-ordination problem was resolved in 1995, by the United States accepting that partition was a necessary evil, that the international community was able to take effective action to end the Bosnian war. Militarily speaking, all these political problems have adverse operational implications.

KEY POINTS

- Humanitarian intervention is shaped by politics at the domestic level and in the Security Council, which operates to define crises and international responses.
- The 'CNN effect', the notion that televised images of humanitarian suffering can produce a public demand for intervention, underestimates the extent to which political elites can frame the media debate to affect the place and timing of intervention.
- The 'bodybags effect', the assumption that casualties can lead to a collapse in public support for intervention, underestimates the public's stomach for casualties. Returning bodybags, however, can induce political elites to withdraw their support for a peace operation.
- UN Security Council co-operation on humanitarian intervention can be hindered by one or more of the P5 seeking to advance their own national interests, either through log-rolling or even vetoing behaviour.
- Even when the P5 agree to act, effective intervention may be hampered by UNSC posturing (where tough talk is not matched by action) and lack of co-ordination (where states disagree on the best course of action).

The military character of peace operations

To stop conflict, peace forces must be prepared to engage in combat (not least to deal with peace spoilers). Such military forces have been designed, equipped, and trained according to fundamental principles of war. However, these principles rarely apply in practice when it comes to peace operations. In addition, there are a number of specific operational pathologies created by political imperatives to manage public support for peace operations.

Principles and practicalities

If we look at the four main principles of war—**objective, unity, mass,** and **surprise**—we can see that all are problematic when it comes to peace operations. First and foremost is the principle that military operations should be conducted towards clearly defined,

decisive, and attainable **objectives**. This is possible in war, with objectives that include seizure of territory or destruction of enemy forces. However, in peace operations, object- ives are often ambiguous, if not unattainable. Objectives for peace operations are usually established by UNSC mandate; for non-UN interventions, mission mandates are set by the contributing national governments. Security Council politics often prevent the con- struction of a clear mission mandate. Mandates may be deliberately vague in order to overcome the co-ordination problem. Imprecise mandates also may emerge as a con- sequence of the posturing problem: as we saw with the safe areas in Bosnia, UNSC mem- bers may want to talk tough without actually committing themselves to tough action.

Peace operations are, in themselves, decisive only in the sense of short-term effects: for example, securing aid routes or stopping a massacre. Truly decisive objectives are the long-term provision of societal security, political surety, and economic stability, for which non-military instruments are essential. Unattainable objectives also flow from the posturing problem in the UNSC, which results in grand-sounding mandates being given to under-resourced missions; again the safe areas mandate given to UNPROFOR is a stark example of such posturing. To be sure, military commanders will attempt to translate the mandates they are given into clear and attainable mission objectives. Thus, UNITAF sought to create a secure environment for aid operations by keeping armed bandits at bay rather than disarming them. Equally, UNPROFOR protected humanitarian aid by escort- ing aid convoys rather than securing aid routes; the latter would have involved using force to clear Serb and Croatian roadblocks, while the former did not. In effect, objectives are rendered clear and attainable by minimizing the mission. Ironically, this makes objectives less decisive: the secure environment in Somalia did not outlive UNITAF, and aid flows in Bosnia depended on the goodwill of the belligerent parties and not on UNPROFOR's power.

Unity of effort, the second principle, is achieved in war through unity of command; that is, having all forces under one commander. Thus, the coalition forces that liberated France in 1944 were led by a single commander (General Dwight Eisenhower) as were those that liberated Kuwait in 1991 (General Norman Schwartzkopf). **Unity of com- mand** is less assured in peace operations for two reasons. First, peace forces are often drawn from a wider variety of troop-contributing states than in normal coalition warfare. Differences in military culture, lack of prior joint operational experience, and potential political rivalries between contributing states all inhibit the creation and operation of an effective command structure in peace operations. Sometimes these differences can be so great as to render the chain of command inoperative, as occurred in late 2000 during the bitter dispute between the Indian commander and Nigerian and Zambian contingents in the UN force in Sierra Leone. Second, the governments of troop-contributing countries are reluctant to let the UN do as it will with their troops. Thus, national governments frequently bypass the mission command structure and issue instructions directly to their forces in the field. Western powers also have on occasion provided combat forces to support UN missions without actually placing those forces under UN command; the Anglo-French Rapid Reaction Force in Bosnia, the US QRF in Somalia, and British military forces in Sierra Leone all remained under national political and military command. To make matters worse, unity of command is not sufficient in peace operations. Com- manders must co-ordinate their actions with civilian agencies—UN, non-government,

and local aid agencies—to achieve unity of effort in peace operations. Here differences in military and civilian organizational cultures are even more pronounced and can raise a formidable barrier to co-ordination. In Somalia, civil-military co-operation under UNITAF broke down when the military way of doing things—controlling movement and information—infuriated aid agencies that were used to operating independently of such restrictions.

The third principle of effective military action is for commanders to **mass force**. This may be achieved through concentration of force at points in space and time that will have greatest impact on the enemy. It also may be achieved through massing the effects of combat power, that is, synchronized use of all the elements of combat power to create decisive effect. When it comes to peace operations, however, forces are more commonly dispersed rather than concentrated, to maintain high visibility and provide security on the ground. In areas of Somalia, US Marines were parcelled out to villages in the smallest of units, rifle squads. Force dispersal at this level also limits possibilities for massing effects. The smaller the unit, the fewer elements of combat power that will be available to the commander. The problems of under-resourcing and disunity of command that are endemic in peace operations also greatly reduce possibilities for massing force. As Somalia showed, massing force may prove difficult even for the purposes of providing emergency fire support to a unit in trouble; UNOSOM II had trouble pulling together the force of Malaysian and Pakistani tanks and armoured cars that eventually bailed out the US QRF from Aideed's ambush.

Finally, commanders employ the principle of surprise to strike the enemy when and where they least expect it. The critical ingredients for surprise are speed, secrecy, and deception. Speed refers to observing and shaping developments in the area of operations. The unity of command problem in peace operations reduces the ability of peace forces to do this in a timely manner. Equally, secrecy is often compromised by the imperative for unity of effort, which requires peace forces to share operational information with civilian agencies (many of which hire local staff). Thus, Aideed had excellent intelligence about UNOSOM II operations because some locally hired aid workers were his spies. Deception is problematic in urban environments, and particularly so in peace operations because the local populace also may act as eyes and ears for belligerent parties.

Public opinion and operational pathologies

In place of traditional principles of war, peace operations are shaped by the political imperative to manage public opinion. As we have seen, this imperative is generated by political sensitivity to casualties, particularly in what are essentially wars of choice. At the level of national policy, this results in a focus on winning the media battle (see Box 12.4). This was clearly illustrated in Kosovo. NATO launched an elaborate public relations cam- paign directed at countering Serbia's attempt to portray itself as the victim of NATO aggression.

Political concerns with public opinion produce **four pathologies** in peace operations. First is the **strategic compression of the battlefield**. In conventional war, strategic out- comes are shaped by military action at the campaign level: for example, the British cam- paign to drive the Argentine military off the Falklands and the allied campaign in 1990–1

BOX 12.4   WINNING THE MEDIA BATTLE

In the propaganda war, the deadlines are set by television schedules and first editions as much as [by] enemy movements and diplomatic engagements. Surprise attack means preemption by an enemy press release, reinforced by visits to bomb sites or captured territory by reporters allowed to stay in the enemy capital precisely for this purpose. A poor defence means getting caught by unexplained discrepancies and self-contradictions. The credibility of the commander is determined in the television studio as much as on the battlefield. It is no good being able to motivate servicemen and women to accept the hazards of combat if you cannot motivate an otherwise non-participating public to back them in opinion polls.

Freedman, 2000, p. 340

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to push the Iraqi army out of Kuwait. By contrast, tactical military actions can have strategic consequences in peace operations.[3] The loss of 18 US soldiers in a single firefight caused the Somalia mission to collapse. Similarly, the allied bombing of the Chinese embassy shook NATO's strategy in Kosovo. As a consequence, not only must military commanders become effective media managers, they also must anticipate and avoid those military actions likely to result in negative political fallout.

Second is an operational focus on **full-force protection**, that is, ensuring the peace forces are not vulnerable to attack. This is a peculiarly American obsession that flows from an acute political sensitivity to casualties. Full-force protection, as an operational imperative, can hinder effective peace operations in a number of ways. It can result in the concentration of force when security for aid operations would be best promoted through the dispersal of peace forces to provide military presence over a larger area. It can require military commanders to order their forces to wear body armour, visibly demonstrating distrust and insecurity (as US forces did in Somalia), when a more relaxed force posture would make it easier to build relations with the local communities (as British forces did in Sierra Leone). American military opinion appears divided on this issue. On the one hand, senior officers with memories of Vietnam share the casualty aversion of political leaders. More junior officers with recent experience of peace operations, on the other hand, realize that full-force protection can be a serious impediment to mission success.

Third is an over-reliance on **air power** (see Box 12.5). As the 1990–1 Gulf war demonstrated, air power is most effective when employed in synergy with land power: the allied air campaign destroyed the Iraqi military infrastructure and softened up Iraqi land defences, while the land campaign (with air support) smashed the Iraqi army in Kuwait. However, given the aversion to casualties in wars of choice, the Western powers are deeply reluctant to commit ground forces to combat in support of peace operations. In other words, they believe that the best way to achieve full-force protection is to ensure that the only forces deployed are in high-flying fast jets. Sometimes Western air power can be combined with local land power to achieve mission success. Thus, the NATO bombing of Bosnian Serb bases in 1995 combined with Croatia's successful land offensive against Serb territory in eastern Bosnia forced the Bosnian Serbs to sue for peace. Four years later, NATO again relied on air power to force Serbs to stop committing atrocities, this time in Kosovo. The Clinton administration went so far as to rule out publicly a

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BOX 12.5   FATAL ATTRACTION: AMERICA AND AIR POWER

Use of air power can help sustain domestic support or coalition unity [by reducing the risks of own casualties and collateral damage], but it cannot eliminate underlying political constraints. In Eliot Cohen's words, 'Air power is an unusually seductive form of military strength, in part because, like modern courtship, it appears to offer gratification without commitment.' This view poses a challenge for air power. Because policymakers often see air power strikes as a low-risk, low-commitment measure, air power will be called on when US public or allied commitment is weak—a situation that will make successful coercion far harder when casualties do occur or when air strikes fail to break adversary resistance. Air power, like other military instruments, cannot overcome a complete lack of political will.

Byman and Waxman, 2000, p. 38

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ground intervention in Kosovo (so as to quell Congressional fears of US casualties). This gave Serb forces a free hand to terrorize the Albanian populace and drive them out of the province. Unlike the Croatian Army in Bosnia, the Kosovo Liberation Army (KLA) was unable to generate sufficient combat power to act as an effective surrogate ground force for NATO. Accordingly, the Serbs were able to weather NATO bombing for 78 days before finally capitulating. Significantly, Serbian surrender came after NATO finally made a credible threat of a land invasion. Equally significantly, by this stage Kosovo had been emptied of Albanians.

Fourth is the focus on **exit strategies**. Before sending in a peace force, political leaders want to know when and how it will be pulled out. In one sense this is quite reasonable. Leaders need to be reassured that they are not sinking forces into an open-ended commitment: they want some idea of how much the operation will cost and how long it will last. However, the danger of exit strategies is that they may be defined in such a way as to jeopardize the mission. An exit strategy may specify that the peace force will be withdrawn if it takes casualties, thus inviting attacks by peace spoilers (this was the lesson Aideed drew from his war against the UN in Somalia). Equally, an exit strategy may involve the imposition of an explicit time frame (usually short) on an operation, thus encouraging peace spoilers to lie low until the peace force has departed. The peace Implementation Force (IFOR) sent into Bosnia to police the Dayton peace agreement was initially hampered in this fashion by America's unwillingness to commit to IFOR beyond one year.

KEY POINTS

- In practice, peace operations often breach four of the main principles of war—objective, unity, mass, and surprise.

- The political imperative to manage public support for peace operations creates a number of operational pathologies, specifically, command complications caused by the strategic compression of the battlefield, sacrificing mission success to full-force protection, an over-reliance on air power, and counterproductive exit strategies.

Conclusion: Problems and prospects

This chapter has described the problems that confront humanitarian intervention and peace operations. Peace forces must avoid over-use of force so as to maintain consent for their operations while at the same time they must be prepared to take robust action against peace spoilers. Such careful balancing has dramatically failed in past interventions because the UN tried to do too much (Somalia) or too little (Rwanda). Moreover, contrary to popular belief, Western policymakers can resist public pressure to intervene and are much more sensitive than public opinion to casualties in their own force. Finally, peace operations breach many of the principles of war and instead are shaped by adverse political imperatives.

Notwithstanding these problems, the UN is still very much in the peace operations business. In mid-2001 it had 15 peace operations in progress around the world, including complex, large-scale missions in East Timor, Kosovo, and Sierra Leone, and one about to deploy in Congo. It also is contemplating a beefed-up peace force for Lebanon. Indeed, there are signs of a return to intervention optimism. The current Secretary-General believes that the UN must 'reconsider some of the most basic [peacekeeping] assumptions about neutrality, the good faith of the parties, and the non-use of force'. Annan declared in May 2000 that UN peace forces had to be capable of 'countering and isolating those who go against agreed peace processes or commit violations'; in other words, UN forces must be capable of dealing with peace spoilers. Here Sierra Leone has gone some way towards dispelling the intervention pessimism induced by Somalia. Collapse of the UN operation in Sierra Leone was prevented by robust British military intervention; coercion worked where consent had failed.

Supporting this new optimism about peacemaking are more permissive norms of humanitarian intervention. Previously, the sovereignty norm codified in the UN Charter has operated to prevent intervention in the internal affairs of sovereign states. At the same time, Chapter VII of the UN Charter permits the UN to use force to uphold 'international peace and security'. Traditionally, Chapter VII was applied exclusively to inter-state war. Over the past decade, however, the UNSC has recognized that internal conflicts of the kind witnessed in Somalia, Bosnia, and Rwanda can threaten international peace and security by spilling (refugees and combatants) over into neighbouring states, thereby providing grounds for intervention. In 2000, the UNSC also passed Resolution 1296, establishing that 'the targeting of civilians in armed conflict and the denial of humanitarian access to civilian populations affected by war may themselves constitute threats to international peace and security and thus be triggers for Security Council action'. NATO's intervention in Kosovo suggests that states may practise these new norms of humanitarian intervention even when doing so contradicts legal procedure. NATO's war against Serbia was not authorized by the UNSC as required under the UN Charter, although NATO member states argued that they were acting to uphold humanitarian law. Also relevant here is the development of individual criminal responsibility for war crimes. The International Criminal Court, following on from the Criminal Tribunals for the former Yugoslavia and Rwanda, will hold state leaders and officials accountable for breaches of humanitarian law. Sovereignty no longer will be a licence for states to brutalize their

own populations. This will further erode the sovereignty norm in favour of norms of humanitarian intervention.

All the same, this renewed will to act is still not matched by UN capacity. The United Nations remains woefully under-resourced for peace operations. The United States still owes the UN a billion dollars, mostly in peacekeeping arrears which it is unlikely to pay in the near future (especially with the election of Republican George W. Bush to the White House). The UN Department of Peacekeeping Operations (DPKO), in particular, is under-resourced and understaffed. As of August 2000, it had 15 political desk officers running 14 missions, and 32 military officers providing operational support to 27,000 troops in the field. These DPKO staff are so overwhelmed by routine headquarters-related tasks in New York that they are unable to provide adequate support to missions in the field. UN missions also are complicated by the need to co-ordinate the operations of several departments (including the DPKO, the Department of Political Affairs, and the Department of Disarmament Affairs) and agencies (the Office for the Coordination of Humanitarian Affairs, the Office of the United Nations High Commissioner for Refugees, and the United Nations Development Program). The UN's bureaucratic procedures make matters worse by making it excessively laborious to equip field missions.

These limitations in the UN's capacity have resulted in some regionalization of peace operations. Thus, NATO deployed massive peace forces in Bosnia and Kosovo on behalf of the United Nations. The United States has encouraged African states, in particular, to develop a regional capacity for peace operations. This is an area where there is a high demand for peace forces, which (after Somalia) the United States is not at all keen to fill. Regional coalitions are supposed to enjoy several advantages over UN operations, namely, greater force cohesion, better local knowledge, greater commitment to the mission, and more suitable force structure. However, these advantages were not evident in the case of ECOMOG (Economic Community of West African States Cease-fire Monitoring Group) which attempted to restore order to the failed Liberian state from 1990 to 1996. ECOMOG was divided by subregional rivalries between Francophone and Anglophone West African contributing states, its leaders exhibited poor understanding and judgement of the political scene in Liberia, mission commitment was only maintained through the use of local surrogate forces (who had an interest in continuing the conflict), and it lacked the equipment, training, and logistical support for counter-insurgency operations. In short, regionalization of peace operations is not going to solve the UN's problems.

Fortunately, the United Nations has in Kofi Annan a Secretary-General committed to recognizing the mistakes of the past and learning from them. He has been frank in reporting the UN's failures in Bosnia and Rwanda. He also is promoting a wide range of reforms to UN peace operations. Annan has declared that 'Of all my aims as Secretary-General, there is none to which I feel more deeply committed than that of enabling the United Nations never again to fail in protecting a civilian population from genocide or mass slaughter'. Let us hope he succeeds.

QUESTIONS

1. Why was humanitarian intervention rare during the Cold War?

2. How does 'wider peacekeeping' differ from traditional peacekeeping?

3. What is the 'consent divide' and when should it be crossed?

4. What are the lessons of Bosnia for dealing with peace spoilers?

5. Why is Somalia the 'Vietnam' of peacekeeping?

6. Could the UN have done more to stop genocide in Rwanda?

7. How well do the principles of war apply to peace operations?

8. What operational pathologies are created by the imperative to manage public support for peace operations?

9. What are the signs of a return to intervention optimism?

10. Is some regionalization of peace operations to be welcomed?

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WEB SITES OF INTEREST

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www.usip.org/library/topics/peacekeeping.html This is the comprehensive 'Peacekeeping Web Links' page of the United States Institute of Peace Library.

ENDNOTES

1. The three main humanitarian operations that did occur during the Cold War were unilateral military actions by one Third World state against another: India's 1971 intervention in East Pakistan, Tanzania's 1978 intervention in Uganda, and Vietnam's 1979 intervention in Cambodia. In all cases, intervention was justified on grounds of self-defence, but the effect was to remove murderous regimes from power. Despite this humanitarian outcome, these actions were condemned as illegal by the great powers.

2. This resolution was not vetoed by the Soviet Union because the Soviet Union was boycotting the UNSC at the time.

3. The same may be said of battlefield nuclear, chemical, and biological weapons. The political consequences of using such weapons may far outweigh their military effect.

13 A New Agenda for Security and Strategy?

James J. Wirtz

READER'S GUIDE

This chapter explores a series of issues that have not been traditionally included on national security agendas or considered to be within the purview of strategy. Unlike most assessments of non-traditional security issues, it does not define a specific problem as a threat to national security simply because it creates the possibility of creating casualties, damage to personnel property, or economic prosperity. Rather, it develops a utilitarian assessment of environmental, resource, population, and planetary defence to discover if strategy, military force, or existing strategic literature can address these issues and problems in a useful way. If strategy, strategists, or military force can address a specific problem, or if it can be determined that they are a cause of a particular problem, or if they can be forced to change in response to some transnational trend, then the issue should be a subject for strategy and strategists.

Introduction

During the Cold War, **high politics** dominated national security agendas. Issues of war and peace, nuclear deterrence and crisis management, summit diplomacy, arms control, and alliance politics preoccupied those people with a professional or personal interest in world politics or military strategy. By contrast, **low politics**—the environment, the management of scarce resources, or efforts to constrain population growth—were often perceived as a source of trouble, but rarely as a threat to national security. Occasionally, issues of low politics managed to reach national security agendas. Fallout from nuclear testing in the atmosphere prompted a growing awareness of the environmental consequences of the nuclear arms race, leading to the Partial Test Ban Treaty (1963). The oil shocks of the 1970s made Americans aware of their dependence on foreign oil and the important role conservation could play in preserving US economic prosperity and diplomatic leverage. But for the most part, high and low politics were treated as separate issues by policymakers and scholars alike.

Starting in the late 1980s, the distinction between high and low politics began to disintegrate. Many observers now believe that nontraditional issues should be placed at the top of national security agendas. Several theories of international relations can explain the rise to prominence, so to speak, of low politics. Realists, for example, might suggest that as the overarching preoccupation with the Cold War evaporated, issues once considered 'lesser included threats' could be expected to appear more important. They also would note that with the collapse of the Cold War divide, management of these global issues might become increasingly possible, especially if the United States, the lone superpower, used its diplomatic, economic, and military leverage to good effect. Neo-institutionalists would probably add that new forms of transnational management are increasingly important in world affairs. They might point to the prominent role played by international governmental organizations (IGOs, e.g. the United Nations), international non-governmental organizations (INGOs, e.g. the Carnegie Endowment for International Peace or Greenpeace), or even a plethora of grassroots movements in tackling tough issues that transcend international boundaries. These local organizations and movements not only push global issues—women's rights, ozone depletion, the AIDs epidemic—on to national agendas, they also help initiate and co-ordinate international responses to transnational problems. Scholars who focus on the way the communications revolution is changing human interaction often highlight the fact that groups of people scattered across the globe can now orchestrate political or informational campaigns using the Internet. Individuals, educated and empowered by new communication technologies, are increasingly aware of the suffering of others in distant lands. There is a growing awareness, especially among people in the developed world, that international boundaries are a weak barrier to the problems that afflict the poorest parts of the planet.

The need for a conceptual framework

To say that low politics are perceived as more important in the aftermath of the Cold War is beyond dispute. Major research projects already have been undertaken in the 1990s by Thomas Homer-Dixon and his colleagues at the University of Toronto and by the International Peace Research Institute, Oslo (PRIO) to demonstrate a link between resource scarcity and the outbreak of war or other forms of violence. Other researchers have noted that damage to the environment should be considered as a threat to national security because it can cause casualties or even kill. Marc Levy, for instance, has suggested that damage to the earth's ozone layer should be considered to be a security threat because it causes cancer, blindness, and even death.[1] But to say that environmental damage or resource scarcity should now be considered as national security issues raises a host of problems, especially for those who are concerned with the development of military strategy. It is not exactly clear, for instance, how military forces can help reduce the build-up of greenhouse gases in the atmosphere to prevent global warming. Similarly, it is not clear how military action can help stop the Acquired Immuno-Deficiency Syndrome (AIDS) epidemic that is sweeping Africa and other parts of the world. Nontraditional threats to national security clearly exist, but it is difficult to discern how military formations, strategy, or strategists can respond constructively to these issues.

Those who suggest that environmental or global issues are a national security threat often resort to Malthusian scenarios to justify their judgements.[2] Resource scarcity or the disorder produced by overpopulation or rapid depopulation, for instance, are identified as causes of war. But these **Malthusian scenarios** (see Box 13.1) are not entirely plausible. They seem to suggest that the military should prepare to contain the symptoms of nagging transnational problems before they burst into some sort of cataclysmic fury. One might also hope that educational, technical, or social action could be taken before environmental, resource, or population pressures produce wars that literally involve battles for human survival. No one would disagree that these environmental or global issues are important, it just seems unlikely that negative trends will continue indefinitely into the future and produce raging resource wars. Already, there are positive signs on the horizon. Population growth rates, which reached a peak of 2 per cent per year in the 1960s, are declining and will continue to do so just as long as people grow healthier, wealthier, and better educated.

Defining some transnational issue as a national security threat also can create a new set of problems. Often military forces are the only units available that possess the logistical capabilities or the able-bodied and disciplined work force needed to cope with the aftermath of natural or political disasters. Regardless of circumstances or initial intentions, however, the introduction of military forces risks making things worse by turning a public health crisis or police problem into an armed conflict. The UN intervention in Somalia, for instance, quickly deteriorated from an effort to prevent mass starvation into a particularly nasty form of warfare, urban combat. (See Chapter 9.) Launching a *war* on drugs inevitably leads to casualties among innocent bystanders, disruption of peasant life, increased rural poverty, and armed resistance. Soldiers also complain that humanitarian operations, peacekeeping duties, or conducting border patrols divert resources and

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BOX 13.1 THOMAS ROBERT MALTHUS

Malthus was born on 13 February 1766 at Dorking, England. He graduated from Jesus College, Cambridge in 1788, worked for a time as a minister and returned to Cambridge as a fellow in 1793, the year Louis XVI was guillotined by revolutionaries.

Malthus took a dim view of utopian philosophies advanced by William Godwin and M. Condorcet. In response, in 1798 he published *An Essay on the Principle of Population as It Affects the Future Improvement of Society*.

Using data supplied by none other than Benjamin Franklin on the population growth rates of American villages, Malthus offered a startling observation: populations grow in a geometric fashion while food supplies only increase by an arithmetic ratio. In other words, if current trends continued, the human race would inevitably outpace the food supply, leading to cataclysmic social collapse. Two factors might hold off this day of reckoning: efforts to reduce birth rates, which Malthus termed 'preventive measures'; and war, disease, and starvation, developments described by the misnomer 'positive measures'.

Luckily, Malthus's predictions proved incorrect.

He failed to account for the fact that trends rarely continue indefinitely into the future. In fact, the amount of raw materials used per unit of economic output has actually been decreasing over the last century, while available resources have been increasing. Once adjusted for inflation, *The Economist*'s index of prices of industrial raw materials has dropped 80 per cent since 1845.

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training away from their primary responsibility: preparing to engage in conventional combat and win the nation's wars. They also complain that continuous operations in far away lands wears out equipment faster than it can be replaced and places overwhelming burdens on their personnel, leading to deteriorating morale and an exodus of volunteers from the military. Simply defining environmental, resource, or population problems as security issues is not without costs or risks.

Instead of becoming mired in the debate about the gravity of today's environmental problems or what constitutes an appropriate mission for military units, it would be better to assess this new security agenda to determine if and how strategy can respond to these issues. This **utilitarian assessment** would unfold along three dimensions. First, if military units can take some action that addresses a particular problem or issue in a useful way, then that subject is of importance to strategy and strategists. But if the threat of force, the use of force, or even the logistical or technical assistance that can be supplied by military units does little to respond to a given problem, it probably is best not to treat the specific issue as a security threat. Second, if military action somehow produces environmental, resource, or demographic consequences, then these issues are of interest to strategists. The time has arrived to measure the cost of conflict by using more than just the immediate losses of blood and treasure. A global perspective requires strategists to consider the long-term environmental consequences of war and preparations for war. Third, low politics are of strategic interest when they create effects that are likely to shape the way force is used in the future. In other words, will low politics create changes in the international security environment that will force a significant transformation of strategy, military force structure, or doctrine? This utilitarian assessment stands in contrast to

typical discussions of environmental or resource issues because it defines security threats in terms of what constitutes an appropriate response (i.e. use of force), rather than the potential of an issue to threaten a nation's or an individual's well-being (i.e. scarcity of potable water).

Is there a new agenda for security and strategy? The answer might in fact be yes: especially if strategy, strategists, or military force can address a specific problem, can be the cause of a specific problem, or can be forced to change in response to some transnational trend. What follows is a brief survey of the relationship of strategy to several transnational issues that are said to make up a new agenda for security and strategy.

KEY POINTS

- Scholars debate whether to include non-traditional issues—pollution, threats to biodiversity, disease—on national security agendas.

- Malthusian scenarios remain popular as a justification for treating environmental issues as security problems.

- Defining social or environmental issues as a national security problem is not without costs and risks.

- A utilitarian assessment may be useful to determine if there is a new agenda for security and strategy.

Population: The demographics of global politics

Nearly every problem identified in this chapter is rooted in the population explosion that occurred in the twentieth century. Since the middle of the century, the number of people living on the planet grew by 3.5 billion; over six billion people were alive at the start of the twenty-first century. With luck, the total population should stabilize somewhere between seven and eight billion and even begin to decrease by the time most of the people reading this book have retired. If people in the developing world do not begin to share in the fruits (wealth, health, and education) promised by globalization, however, the global population could reach nearly 11 billion by 2050.

Although the news about the world's population problem is not all bad, three caveats are often raised about these positive trends that paint a somewhat darker picture of both our immediate and our medium-term future. First, most of the population growth in the years ahead will occur in the poorest countries that already are strained to the limit when it comes to feeding, housing, and educating their existing populations. By contrast, in the developed world, population growth rates in many cases have dipped below 'replacement levels', creating a different sort of crisis. Too few people of working age will be available to contribute to 'pay-as-you-go' pension systems, creating the possibility of a systemic social crisis. Second, most of the population growth is taking place in urban areas. By 2015, the

world will have 26 **megacities** with populations exceeding ten million and at least 20 of them will be located in the developing world. Urban planners, government officials, and military officers are concerned that megacities will tax social and basic services well beyond their limits, leaving millions of people to live in urban squalor and chaos. Megacities also can erupt into spontaneous violence following some local insult or even a sporting event. Even cities in the developed world can burst into violence: thousands of armed gang members can plunge sections of Los Angeles into chaos and looting for days before police and national guard units are able to restore order. Third, most of this additional population will be very young, leading observers to note that in parts of the developing world, it will be some time before population growth rates peak.

Although strategists find little to dispute in the observation that overpopulation creates enormous social, resource, and environmental strains, they are most interested in exploring the divergent **demographic trends** at the heart of the population problem. In other words, what are the strategic implications of an ageing and shrinking Western population on the one hand, and an explosion in the number of young people in the developing world on the other? For the developing world, the concern is that the inability to provide basic services to this surging population will produce poverty, chaos and hopelessness. Some observers believe that young people, concentrated by the millions in megacities, will fall under the sway of a virulent nationalism, messianic leaders, or millenarian movements, leading to waves of local violence or international terrorism. Young men with little prospect of a traditional home, family, or occupation might find an outlet for their ambitions in war. By contrast, the slow or even negative population growth in the West will make it increasingly difficult to fill the ranks of the armed forces, forcing militaries to rely on technology to compensate for an absence of volunteers. The demands for health care and the high pension costs created by an ageing population also will make it difficult for industrialized nations to afford large defence budgets.

These population demographics constitute a strategic issue because they will force changes in defence policies and strategy in the years ahead. Differences in population growth create fundamental trends that influence military strategy and defence policy. But exactly how will demographics transform this strategic setting? Martin van Creveld and Stephen Cimbala offer a pessimistic view of these trends. They believe that nation states are losing their monopoly on the use of force as urban mobs and transnational movements take matters into their own hands. Violence is becoming less politically organized; the world is descending into chaos and warlordism. (See Chapter 9.) By contrast, some observers would predict that these population demographics already are producing different attitudes towards the death and destruction of war. In the West, a rising aversion to casualties already is shaping national strategies, limiting the use of force to situations that pose little risk to friendly forces. In the developing world, **warrior cultures** glorify war, swelling the ranks of millenarian, fundamentalist, or anarchist movements with thousands of untrained and lightly armed volunteers. It probably is wrong, however, to suggest that warrior culture offers a superior approach to the conventional battlefield than the combined arms attack that can be unleashed by military professionals. No amount of élan will save units caught in the open by a well-timed artillery barrage or an air strike using fuel-air explosives. On a more positive note, some observers have suggested that as birth rates decline, people everywhere will be less willing

to see what may be their only child sacrificed in some dubious military adventure. And if democracy continues to spread, they would have the means to make these feelings known to their elected officials.

KEY POINTS

- Although population growth rates are slowing, the total world population will continue to increase for the next thirty years.
- Future population increases will be centred in the developing world, leading to a concentration of young people in megacities.
- Because they influence the context of diplomatic and military policy, divergent demographic trends will shape strategy and strategic thinking.

Commons issues

Issues that transcend international boundaries often are referred to as commons problems (see Box 13.2). Although some countries can contribute more or less to a specific commons problem, efforts to stop the **tragedy of the commons,** to borrow Garrett Hardin's famous phrase, require some form of collective action on the part of most members of the international community. Most low politics problems could be classified as commons issues, but environmental and resource issues generally come to mind when policymakers and scholars think about transnational issues.

Air pollution, especially the release of carbon dioxide from automobiles and coal-fired electric plants, destruction of the ozone layer through the release of chlorofluorocarbons, and global warming produced by greenhouse gases are all quintessential commons problems. In other words, it would be impossible for a single state or a group of states to slow the destruction of the ozone layer, for example, by banning the manufacture of chlorofluorocarbons if other states continued to release these substances into the atmosphere. Water pollution, depletion of underground aquifers, and the protection of migratory species (e.g. fish) are often depicted as commons problems, although their effects often are confined to specific regions. Michael Klare, for instance, sees water scarcity as a source of conflict among countries that share major water systems. Klare identifies the Nile River (shared by Egypt, Ethiopia, and the Sudan), the Jordan River (shared by Israel, Jordan, Lebanon, and Syria), the Tigris and Euphrates rivers (shared by Turkey, Syria, Iraq, and Iran), and the Indus River (shared by Afghanistan, India, and Pakistan) as likely conflict points.[3] Sometimes, depletion of aquifers and fish stocks can create local economic catastrophes when farmers lose the water needed to irrigate their crops and fishers are forced to abandon traditional means of earning a living.

Threats to biodiversity, especially deforestation of tropical rainforests, occur on specific national territories, but they are slowly destroying the 'common heritage of humankind'.

BOX 13.2 THE TRAGEDY OF THE COMMONS

Imagine you lived near the West Coast of the United States and every spring you had the opportunity to go salmon fishing. The fish were plentiful and it was easy for you to catch a couple of dozen fish in a single morning. This makes you very happy because you have many friends and relatives who like salmon. In any event, there are plenty of fish in the sea, and no matter how full you loaded up your boat you could never make much of a dent in the salmon population. There would always be fish willing to take your bait. Now imagine if thousands of your neighbours up and down the coast went fishing too and proceeded to fill their boats with fish. Even though no one wanted it to happen and no one individual would be responsible, it would not be long before salmon became mighty scarce, producing a tragedy of the commons.

The tragedy of the commons is an example of the tyranny of small decisions, a situation in which unintended and negative consequences are produced by individuals following their reasonable, albeit narrow, self-interest. Each fisher, rationally acting to fulfil their self-interests, gains the extra benefit of their large catch, while the entire community bears the cost of depleting the fishery. Even if individuals refrain from filling their boats, it would only make it safe for others to 'free-ride' on their self-restraint. In other words, collective action is needed to capture the externalities involved in exploiting the fishery (i.e. getting fishers to pay the full cost of their catch) and to prevent free-riding. When a commons problem occurs within national boundaries, it is easy for the state to capture these externalities and to corral free-riders. When fisheries are open, for example, the State of California limits salmon catches to two fish per day by *licensed* fishers. Fish have to be longer than 24 inches and it is illegal to take protected salmon species (e.g. Coho salmon). But when the commons crosses international borders, capturing externalities and corralling free-riders requires international collaboration.

Deforestation destroys habitats needed by the planet's non-human inhabitants: tropical rainforests are home to half of the world's known species. Deforestation also can have regional climatic effects because trees are a key link in the evapotranspiration cycle between soil and the atmosphere. Trees also help to protect delicate topsoil by providing erosion control against landslides and flooding. Forests also help to slow global warming because trees act as a major sink of carbon dioxide in the atmosphere. Global or regional environmental problems sometimes can have acute local consequences.

By contrast, local environmental damage can produce global environmental consequences. Sometimes commons problems are created when the effects of localized insults to the environment have a global impact and sometimes they are created when millions of small and relatively innocuous events have a cumulative effect that produces global consequences or local disasters. The distinguishing characteristic of all of these issues, however, is the fact that either their causes or their effects are beyond the reach of any one state.

Although commons issues pose an existential threat to all humanity, at times they do spark real conflict. In recent times, concerns about access to oil supplies (one natural resource that remains key to modern industrial economies) was a clear motivation behind the formation of a US-led international coalition to oust Iraq from Kuwait in the early 1990s. Shots also have been exchanged in fishing disputes as boats and crews are seized for poaching in waters claimed by a specific state. Water wars are likely in the future, especially as rivers and aquifers are drained to make deserts in one state bloom at the expense of fields in neighbouring countries. So as a proximate cause of war, commons issues should be a concern to strategists; but, so far at least, with the exception of the Gulf war, shots have been exchanged only in a limited way, a few times, over limited issues.

By contrast, most commons problems are probably beyond the reach of strategy. It is difficult to imagine how military action might resolve many transnational problems. For instance, the existence of strategists, strategy, and military infrastructure did little to deplete aquifers; it is difficult to see how they can help conserve or replenish these underground water supplies. Moreover, because war is a state activity undertaken to achieve political objectives, there is little political motivation to undertake military action in response to commons issues. In other words, few would suggest that wars should be launched to stop individuals in other states from killing tigers, from practising slash and burn agriculture, or from constructing electric power plants that use coal as an energy source. But even if it were possible to use military force to solve a commons problem, it would be highly unlikely that any single state would launch this type of military endeavour in the first place. By definition, the benefits gained from using military force to resolve commons problems are outweighed by the costs of action. Everyone would benefit, but the state taking action would bear all of the costs. This is the very dilemma that lies at the heart of the tragedy of the commons. Collective action is needed to capture the externalities (the unpaid costs that are inevitably involved in all human activity) that lie at the heart of most commons problems. Strategists might contribute to the effort to devise a collective response to commons issues, but it probably would be better if this response is based on enlightened self-interest, not point-of-the-gun environmentalism. Although commons issues might some day force military action or shape military strategies (e.g. military action to protect oil supplies), it probably is best not to treat commons issues as military problems.

KEY POINTS

- The tragedy of the commons is generally produced by an international failure to undertake collective protection of the environment or to conserve resources.
- The resolution of commons issues probably lies beyond the realm of strategy.

Direct environmental damage

Military action or the manufacturing of military weapons can result in significant environmental damage, although these insults to the environment probably fall short of constituting a commons problem. Sometimes the impact of military activity is limited or unknown. For example, military aircraft often jettison fuel in an emergency, but it is

unclear if much environmental damage occurs in peacetime from this practice. As the Member of Parliament Archie Hamilton noted in the 1990s:

RN [Royal Navy] and RAF [Royal Air Force] pilots are instructed to jettison fuel under carefully controlled conditions which ensure that the great majority of fuel evaporates before it reaches the ground. There is, therefore minimal environmental impact at ground or sea level. The evaporated fuel is widely dispersed. Most of it is biodegradable and that which remains has no known effects on the atmosphere. There are no products in military aviation jet fuel known to cause greenhouse effects, damage to the ozone layer or air pollution in the lower atmosphere.[4]

Hamilton is probably correct that dumping jet fuel in the atmosphere does not pose much of a problem in peacetime: British flyers were only forced to jettison fuel on average about twice a month in the 1980s. But in wartime, mission requirements might cause enormous amounts of fuel to be jettisoned. If this happened over a relatively small area would it have an environmental impact?

An issue that often bedevils assessments of the environmental impact of military activity is the effort to use 'green' arguments to derail programmes for political purposes. A case in point is the alleged negative environmental and long-term health consequences produced by the use of depleted uranium (DU) in heavy tank armour, in antitank munitions, and even as counterweights in commercial aircraft. DU is used primarily as a kinetic-kill projectile because it is very heavy and dense: no nuclear reaction occurs when a DU projectile strikes a tank, for example. Depending upon the type of impact, small amounts of DU may be released in the form of tiny, relatively insoluble particles of uranium oxide or even as larger pieces of metallic uranium. There is little scientific data on the health effects on DU, although studies exist about the health effects of uranium, a similar material. Based on studies undertaken on uranium workers, no negative health effects have been established following exposure to radiation through ingestion and inhalation of DU particles or through wounds contaminated by DU. Nevertheless, many media reports and Internet campaigns decry the environmental and health impact of the use of DU on the battlefield.

Some military weapons can potentially produce catastrophic damage to the environment and extremely significant health risks, even if they are not used in battle. The cost of dismantling and destroying these weapons is staggering and involves scientific and engineering capabilities that are far more advanced than the original efforts to make the weapons themselves. Successful programmes are possible. For example, in November 2000, after nearly ten years of operation, the Johnston Atoll Chemical Agent Disposal System (JACADS) finally eliminated the remnants of the US chemical weapons stockpile. JACADS was the world's first full-scale facility built to destroy chemical weapons. Johnston Atoll, located 717 nautical miles south-west of Oahu, is one of the most isolated atolls in the world and had been used repeatedly as a US nuclear, biological, and chemical weapons testing and storage facility (see Box 13.3). Remaining off-limits for the indefinite future, Johnston Atoll will soon serve as a wildlife refuge.

Other facilities, especially those involved in nuclear weapons programmes, are neither as isolated nor as easily cleaned up. In the mid-1990s, the US Department of Energy estimated that it would cost at least 160 billion dollars to clean up facilities once involved in the manufacture of nuclear materials at Hanford Reservation, Savannah River, Oak

BOX 13.3 US STOCKPILE DESTROYED BY JACADS

Agent	Item	Quantity	Pounds
HD-Blister	155 mm Projectiles	5,670	66,339.0
HD-Blister	105 mm Projectiles	46	136.6
HD-Blister	M60 Projectiles	45,108	133,970.7
HD-Blister	4.2 Mortars	43,600	261,600.0
HD-Blister	Ton Containers	68	116,294.0
GB-Nerve	M55 Rockets	58,353	624,377.1
GB-Nerve	155 mm Projectiles	107,197	696,780.5
GB-Nerve	105 mm Projectiles	49,360	80,456.8
GB-Nerve	8" Projectiles	13,020	188,790.0
GB-Nerve	MC-1 Bombs	3,047	670,340.0
GB-Nerve	MK 94 Bombs	2,570	277,560.0
GB-Nerve	Ton containers	66	101,158.0
VX-Nerve	M55 Rockets	13,889	141,769.8
VX-Nerve	155 mm Projectiles	42,682	256,092.0
VX-Nerve	8" Projectiles	14,519	210,525.5
VX-Nerve	Land Mines	13,302	139,671.0
VX-Nerve	Ton Containers	66	97,360.0

Ridge, Idaho National Engineering and Environmental Laboratory, and Rocky Flats. The Department of Defense also identified 26,500 other locations at existing or former military bases that have been contaminated by nuclear or industrial pollutants. Only 1,700 of these sites had been cleaned up by 1996.

The environmental problems facing the Russians also are severe. Scores of old nuclear-powered submarines lie rusting at their berths throughout the Russian north and far east and Russian spent-fuel storage facilities are nearly full. A lack of resources makes it nearly impossible for the Russians to undertake a complicated clean-up process. The submarine must be retired from active status; its missiles must be removed. Spent nuclear fuel must be extracted, making it safe to disconnect its reactor and reactor circuits. Spent fuel can then be transported for reprocessing and low- and high-level waste collected for storage. The reactor compartment can then be cut away from the rest of the hull so that it can be sealed for long-term storage.

Although the costs of cleaning up after the Cold War are only now being assessed, clearly strategists and policymakers need to take into account the environmental impact of yesterday's and today's defence policies. Of course, at the time, these costs paled in significance when compared to the perceived military threats posed by the Cold War, but strategists and policymakers must consider the lasting legacy of nuclear, chemical, and

biological weapons manufacturing and disposal. Full disclosure of these 'hidden' costs might cause those who seek to develop a robust nuclear arsenal—here Indian, Pakistani, or Chinese leaders come to mind—to think about the potential consequences of their defence industrial policy.

Disease

Although disease has been a scourge throughout human existence, public health initiatives (providing people with clean water and proper sanitation), vaccination, quarantine, and the discovery of antibiotic drugs in the mid-twentieth century helped to reduce the outbreak of communicable disease at least in the industrial world. Today public health officials in the West focus on modifying people's lifestyle to reduce the incidence of cancer (caused by smoking) and cardiovascular disease (accelerated by modern diets and a lack of exercise). The human genome project also holds out the prospect of new treatments for all types of illnesses, especially those linked to genetic disorders. Life expectancies have increased steadily over the last century. During this time, more people survived infancy because of prenatal care, and public health services and vaccination against childhood diseases and treatments emerged to arrest, if not completely cure, disorders (cardiovascular disease, cancers) that killed previous generations by the time they reached their seventieth birthday. (See Box 13.4.) Progress was even achieved on a global scale: ask your parents (or grandparents) to show you their smallpox vaccination.

If one takes a global perspective, however, the news is not so encouraging. Public health officials are bracing for a long overdue outbreak of a deadly strain of influenza. They also fear the outbreak of new diseases that are resistant to existing treatments and drugs. They worry that unknown bacteria or viruses that have laid dormant deep within tropical rainforests will soon be disturbed by encroaching humans, producing new epidemics of dangerous diseases. World Health Organization officials also warn that the seven infectious diseases that caused the highest number of deaths at the turn of the century will remain serious threats for decades to come:

- **Human Immunodeficiency Virus/Acquired Immuno-Deficiency Syndrome (HIV/AIDS):** At the turn of the century, about forty million people across the globe were living with HIV/AIDS. Infection and death rates have slowed in the West in response to preventive measures and expensive multi-drug treatments. The pandemic continues to spread throughout the developing world and is making inroads in India, Russia, and China. Sub-Saharan Africa is the centre of the AIDS epidemic: already 10 to 20 per cent of the adults in the region are infected with the disease. The social and economic costs of the disease are staggering. Already, African economies are experiencing a steady decline in Gross Domestic Product (GDP) due to the AIDS epidemic and entire generations of children will become AIDS orphans.

- **Tuberculosis (TB):** Once thought to be controlled in the developing world by public health efforts and drug treatments, TB is increasing in Russia, India, South-east Asia,

BOX 13.4 **PATHOGENIC MICROBES IDENTIFIED SINCE 1973 AND THE DISEASES THEY CAUSE**

Year	Microbe	Type	Disease
1973	Rotavirus	Virus	Infantile diarrhoea
1977	Ebola virus	Virus	Acute haemorrhagic fever
1977	Legionella pneumophila	Bacterium	Legionnaires' disease
1980	Human T-lymphotrophic virus	Virus	T-cell lymphoma
1981	Staphylococcus aureus	Bacterium	Toxic shock syndrome
1982	Escherichia coli 0157:H7	Bacterium	Haemorrhagic colitis
1982	Borrelia burgdorferi	Bacterium	Lyme disease
1983	Human Immunodeficiency Virus (HIV)	Virus	Acquired Immuno-Deficiency Syndrome (AIDS)
1983	Helicobacter pylori	Bacterium	Peptic ulcer disease
1989	Hepatitis C	Virus	Parentally transmitted non-A, non-B liver infection
1992	Vibrio cholerae 0139	Bacterium	New strain/epidemic cholera
1993	Hantavirus	Virus	Adult respiratory distress syndrome
1994	Cryptosporidium	Protozoa	Enteric disease
1995	Ehrlichiosis	Bacterium	Severe arthritis
1996	NvCJD	Prion	New variant Creutzfeldt-Jakob disease
1997	HVN1	Virus	Influenza
1999	Nipah	Virus	Severe encephalitis

sub-Saharan Africa, and parts of Latin America. About eight million new cases of TB each year were reported worldwide at the turn of the century. Particularly disturbing is the emergence of a drug-resistant form of TB. Up to 50 per cent of the people infected with drug-resistant TB will die despite treatment. Many TB infections occur in conjunction with HIV/AIDS. By 2020, TB probably will rank second behind HIV/AIDS as a cause of death by infectious disease.

- **Malaria:** Once thought to be coming under control by public health measures and prophylaxis treatments, malaria is a tropical disease that is on the rise. In Sub-Saharan Africa infection rates jumped 40 per cent over the last thirty years and new drug-resistant strains of the disease are emerging. One potential consequence of climatic change could be an increase in malaria's geographic range.

- **Hepatitis B and C:** 350 million people worldwide are chronic carriers of these viruses. Up to 25 per cent of the people infected with the virus will develop cirrhosis of the liver or liver cancer. There is no vaccine against Hepatitis C.

- **Lower respiratory infections:** Influenza and pneumonia are becoming increasingly lethal, especially among malnourished children in developing countries. Strains of influenza and pneumonia are exhibiting a growing resistance to commonly used drugs.

- **Diarrhoeal diseases:** Infection with *Escherichia coli* is the most common cause of this disease, but dysentery and rotaviral diarrhoea occur throughout the developing world and now are beginning to affect parts of the former Soviet Union. Contaminated food and water spread the disease. In 1996, for the first time in a century, there also was a major outbreak of cholera in Latin America. Most of the victims of diarrhoeal diseases are children under the age of five in the developing world.

- **Measles:** Because of the relatively low vaccination rates in sub-Saharan Africa, measles kills just under one million people a year and infects about forty million children every year. Measles also is the leading cause of death among refugees and displaced persons, especially during humanitarian operations such as those of the 1990s.

Several developments are responsible for the increasing threat of infectious diseases. First, refugee movements caused by political and natural disasters subject millions of refugees to primitive living conditions that breed and spread disease. Ethnic conflict, civil wars, and famine spread disease quickly as refugees move across borders. Second, unprotected sex with multiple partners and intravenous drug use are largely responsible for the spread of AIDS. Third, modern technology and production practices are not foolproof. Imported food produced by non-hygienic practices can spread pathogens and bacteria (*Cyclospora ssp.*, *Escherichia coli*, and *Salmonella*) quickly across national borders. Fourth, land use practices, even efforts to restore natural habitats, can breed and spread disease. For example, reforestation in the United States and Europe is responsible for an increase in Lyme disease as deer ticks have more opportunities to find human hosts. Encroachment on rain forests also brings people in close contact with animals carrying malaria, yellow fever, leishmaniasis, or even heretofore unknown and potentially dangerous diseases. Fifth, international travel and commerce can spread viruses, pathogens, and bacteria faster than the incubation period of the diseases they cause. Today's cross-border movement of over two million people per day guarantees that disease outbreaks will be difficult to contain. Sixth and most importantly, the widespread use of antibiotics in livestock production and the overuse and misuse of antibiotics by people have accelerated the evolution of a variety of strains of drug-resistant microbes. An expanding number of strains of TB, malaria, and influenza are virtually impossible to treat and HIV also displays a high rate of adaptation to drug treatments.

War and civil strife can lead to disease outbreaks by creating refugee disasters and a breakdown in public health care. Throughout history, war has often been accompanied by disease. Soldiers have spread disease in the field and have brought it back with them when they returned home. Today, for instance, the so-called 'Gulf War Syndrome'—a strange mix of debilitating symptoms—is said to occur among US soldiers that returned otherwise unhurt from the 1991 Coalition victory against Iraq. Military forces can be enlisted to help fight the spread of disease through efforts to quarantine affected populations, to move supplies into regions stricken by epidemics, or to use field medical facilities to treat local populations. From a strategic perspective, infectious diseases continue to shape military strategy because disease can create casualties just as easily as enemy fire. In

fact, throughout most of history, disease killed far more soldiers than enemy action. Although military forces are at best a third- or fourth-order defence against the spread of disease (and are just as likely to help spread disease as to contain it), infectious disease shapes the security environment and should be included on the new security agenda.

KEY POINTS

- A variety of factors are causing the spread of infectious diseases, especially in the developing world.
- New strains of drug-resistant diseases are emerging.
- The HIV/AIDS pandemic is likely to spread to India, Russia, and China.

Planetary defence

Every year thousands of extraterrestrial visitors arrive to stay on planet earth. These **Earth-Crossing Objects** (ECOs) are better known as asteroids, which can be as small as pebbles or as large as 1,000 kilometres in diameter, and comets, which are made up of ice and dust. Most of the time, ECOs are very small and cause little or no damage. Hundreds of tons of this space debris lands on the planet every year. In all of human history, only one ECO impact has killed more than one hundred people (a strike was recorded in China in 1490 that reportedly killed 10,000 people). Most of the larger asteroids and comets also are in stable orbits around the sun. But sooner or later, a large object will threaten to hit the earth-moon system (EMS) causing catastrophic damage. Indeed, the ongoing scientific debate is about how great an interval is the norm between significant ECO impacts.

Interest in the problem of planetary defence was sparked by paleontology: an ECO known as the Cretaceous/Tertiary (KT) impact is the leading explanation for the extinction of the dinosaurs. In more recent times, the Tunguska event that occurred in Siberia in 1908 was apparently an ECO of approximately 50 metres in diameter. It exploded with a yield of between 15 and 30 megatons (MGT) of TNT and levelled 2,000 square miles of dense forest. There also have been several recent near-misses. On 1 February 1994, witnesses recorded on film a small meteor off the coast of Papua New Guinea that exploded with a force of about 11 kilotons of TNT. The asteroid Toutatis came within two lunar distances of earth on 8 December 1992, a very near miss by astronomical standards. At about 4 kilometres across, it would have created a blast equivalent to 9,000,000 MGT of TNT. In comparison, the largest nuclear detonation produced by humans (courtesy of Soviet science) was about 100 MGT. An ECO impact of this size might be sufficient to again have an evolutionary impact on earth. (See figure 13.1.)

No known large ECO is heading towards the EMS. This would be reassuring except for the fact that space surveillance systems and programmes are limited and incomplete. It will take until 2008 for existing programmes to detect all ECOs larger than one kilometre
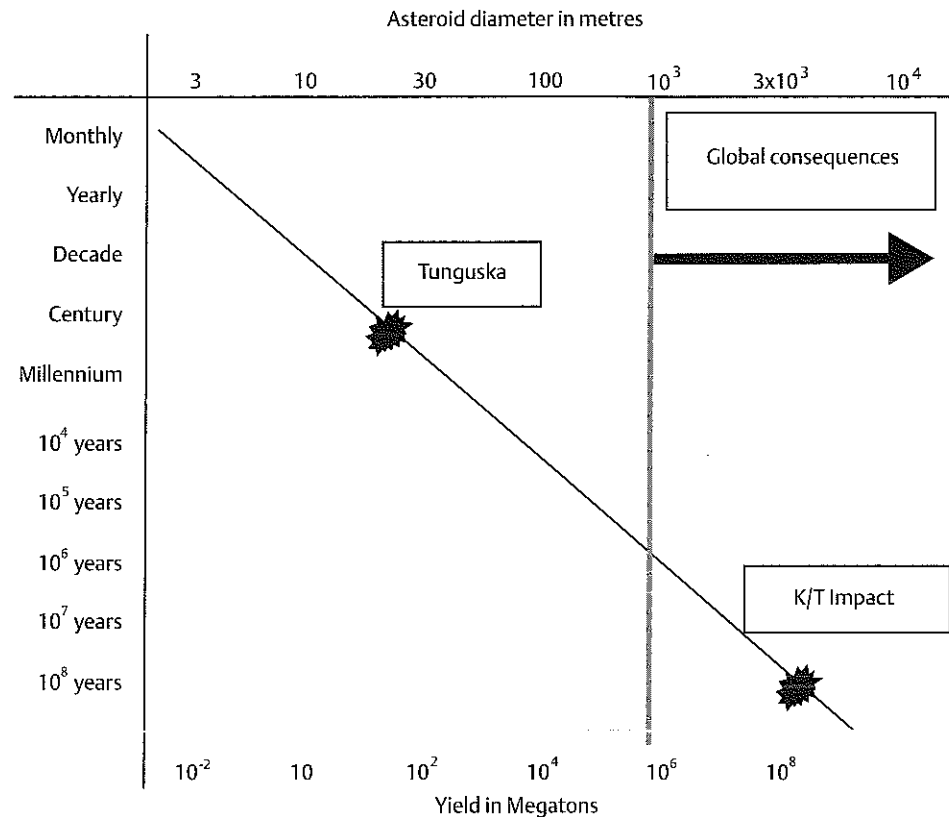
Asteroid diameter in metres

Figure 13.1 Asteroid diameter in metres
Source: John M. Urias et al., 'Planetary Defense', Paper Presented to Air Force 2025 Conference, October 1996.
http://www.au.af.mil/au/2025/volume3/chap16/vol3ch16.pdf.

in diameter. At current rates, however, it would take thousands of years of searching to discover all ECOs greater than 100 metres in diameter (i.e. twice the size of the Tunguska asteroid). Targets need to be identified well in advance because of the long lead times needed to mount a defence. Today only rocket-launched nuclear weapons or rocket-propelled kinetic energy vehicles would be available to deflect incoming ECOs as part of a **planetary defence system** (PDS). In the future, it also might be possible to use space- or moon-based lasers to cut up, melt, or deflect ECOs that are smaller than 100 metres across.

An immediate stumbling block in the development of a PDS is existing international law. Article 3 of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies prohibits deployment of nuclear weapons in orbit or on the moon. Testing of a nuclear-armed PDS in space also is prohibited by the 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space, and Underwater. Because nuclear, kinetic, or laser PDS systems might have some limited effectiveness against ballistic missiles in sub-orbital trajectories, these space defences also might run foul of the 1972 Anti-Ballistic Missile Treaty. Of course, these restrictions would be swept away in a crisis and they do not interfere with ongoing space surveillance efforts. Still, inter-

national law will have to change before preparations can move forward to mount a planetary defence.

KEY POINTS

- Earth-Crossing Objects pose a small threat of a significant natural disaster. The possibility of cataclysmic destruction cannot be ruled out.
- Survey work, the preliminary step in any planetary defence system, has already begun.
- Existing international law prevents the construction of a planetary defence system.

Conclusion

Those who advocate including resource, environmental, or population issues on national security agendas might suggest that this chapter ignores a critical point: many of these global developments threaten the health and welfare of both individuals and states and therefore should be considered as threats to security. They might suggest that just because military forces or strategists are ill equipped to deal with emerging problems simply demonstrates that traditional ways of thinking about security are not up to the challenge of dealing with emerging twenty-first-century security issues. A decision not to treat the emergence of a drug-resistant strain of TB as a threat to national security, for example, would thus be viewed as an effort to minimize the importance of the issue. But the fact that something is a threat to health and welfare does not make it a security problem in the sense that strategy or military force can minimize it. Hundreds of thousands of people every year are killed in automobile accidents, but no one would suggest that military force should somehow be used to improve highway safety.

The purpose of this chapter was not to dismiss these global trends and transnational issues as threats to national or individual security or to minimize the gravity of the challenges created by environmental damage, disease, or population growth in the developing world. Instead, it offered a mixed assessment of the ability of strategy or military force to respond to or to be shaped by global issues. On balance, there was a significant interaction between strategy and many of the items on the new agenda for national security. Demographics and the spread of infectious disease will clearly shape strategy and defence policy in the years ahead. Environmental damage caused by the manufacture, maintenance, and disposal of weaponry also is an issue of concern to strategists. Planetary defence, although only in its infancy, is a problem in which everyone has an equal and profound interest. Even though defence of the EMS is not a strategic problem per se, it can be addressed by military expertise and hardware. Indeed, the issues that appear to be beyond the reach of strategy are the environmental, resource, and commons problems that generated interest in a new concept of security in the first place. Far from viewing these as a setback, however, those who see these issues as important should be relieved by the assessment presented in this chapter. Defining these issues as

engineering, public health, or educational problems is far more constructive than somehow trying to resolve them by the threat or use of force.

QUESTIONS

1. Why are low politics now given priority by policymakers and scholars?

2. Why would globalization help to slow population growth rates in the developing world?

3. Although other resources are vital, why is it that recently states have fought only over oil?

4. Can you think of a way to threaten to use, or actually to use force to resolve commons issues?

5. What would be the social or political consequences of attempting to use military units to enforce a disease quarantine?

6. Do you think it is realistic to expect that countries currently building a nuclear infrastructure would want to do so in a way that protects the environment?

7. Where were you on 8 December 1992?

8. Will people pay attention to environmental issues if they are not defined as threats to national security?

ENDNOTES

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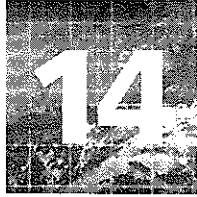
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Conclusion: The Future of Strategic Studies

Lawrence Freedman

READER'S GUIDE

This concluding chapter starts by looking at the development of strategic studies. Strategic studies was largely undertaken outside the universities and was initially influenced by the physical sciences and engineering. Even as traditional military patterns of thought appeared inadequate in the thermonuclear age, academics still found it difficult to impose a scholarly framework for the subject that could survive shifts in policy. By the end of the Cold War, strategic studies was essentially a broad enquiry, drawing on a range of expertise. With the end of the Cold War, the big issues that had animated the study of military strategy subsided and some questioned the continued relevance of the topic. There was a risk that strategic studies would be caught between the scholarly virtues and disciplinary organization required by the universities and the pressures and urgency of strategic practice, which is inherently interdisciplinary. Realism, the intellectual basis of strategic studies, also has been challenged for being simplistic, for making exaggerated claims for its objectivity, and for disregarding domestic and transnational factors. Furthermore, some view realism as being preoccupied with armed force to the exclusion of peaceful means of exerting influence and resolving disputes, to the point of legitimizing armed force as an acceptable instrument of policy.

A way forward is suggested based on the idea that the course of history can be altered by the choices made by individuals, groups, and governments. These decisions provide the subject matter for

strategic studies. They do not need to be choices made only by states nor only about the use of armed force. Armed forces, however, provide the starkest choices that can be confronted and so provide a natural starting point for any attempt to create a general theory of strategy, while organized violence poses a series of challenges that deserves special study.

The development of strategic studies

Strategic studies developed outside the universities. Before the Cold War there were military theorists and commentators, such as Boney Fuller and Liddell Hart in Britain, who often had substantial practical experience but who wrote largely for a popular and a professional audience rather than the academy. Their subject matter was similar to strategic studies, and those early theorists who survived into the nuclear age fitted in perfectly well with the new milieu. There was some pioneering activity in the universities after the First World War with moves to establish the scientific study of international affairs as a means to avoid future wars. Many writers in this field had an interest in military matters, although few claimed expertise in how best to fight wars.

The special flavour of postwar strategic studies came from those who had been working in the physical sciences and engineering rather than the social sciences and humanities. Many of the early participants had their consciences stung and their policy interest engaged by the Manhattan Project. (See Chapter 11.) Those who had worked on operational problems from convoy protection to choosing targets for air raids had firm views about how the conduct of war could no longer be left to what they often took to be the rather primitive, intuitive forms of reasoning of the professional military. The conviction that civilians had critical contributions to make to strategic policy grew as traditional military patterns of thought appeared increasingly inadequate in the thermonuclear age. The combination of the arms race and the Cold War created the conditions for the growth of a substantial research-led policy community outside the universities—new government agencies, congressional committees, think tanks, and 'beltway bandits'.

This created a market for **professionally trained civilian strategists** that university departments might attempt to fill. It also meant that academics were never able to impose a scholarly framework for the subject that could survive shifts in the policy framework. Few scholars really tried to do so. From the start it was the salience of the policy issues rather than intellectual curiosity that led to the growth of the strategic studies community. The universities were certainly not hostile to policy-led research. The Cold War coincided with the expansion of the universities throughout the Western world—not only in size but also in the range of their activities. They took in practical subjects and moved beyond established disciplinary boundaries. If gender and the media could become appropriate areas of study for university departments, then it would have been surprising if questions of armed force had escaped the net. Those making the case for higher education were pleased to demonstrate to sponsors that their institutions

contributed to national strength. When the universities went to the US Congress for more funds after the Soviets had apparently pulled ahead in the technological race with the launch of the world's first artificial satellite (Sputnik), their case was made in the name of national security. (See Chapter 10.) Many academics thrilled to a potential role in a wider public debate, even if this meant enduring policymakers' snide remarks about their abstract theorizing being removed from real life. They accepted the fact that their weightier tomes would be left unread because their short, snappy, opinion pieces would sometimes reach presidents and prime ministers. Academic exponents of strategic studies might have had extensive training in the use of evidence and sophisticated forms of analysis, but they could still drift easily into advocacy, preferring popular and professional audiences to dustier academic conferences and journals.

Little attempt was made to use Cold War opportunities to establish strategic studies as an academic subject. No core curriculum was developed, and there was probably only a brief period in the early 1960s, the end of what was later described as the 'golden age', when there was a serious body of literature that everyone in the field had read. There was not even a consensus on how academic work in this area should be described. The policy influence was always apparent. 'Military studies' appeared too technical and narrow, redolent of map-reading and staff exercises, and contradicted the factors that had shaped the civilian role in strategic policy: the prejudice against professional military thought; the democratic conviction that military officers should be subordinated to civilians; and the Clausewitzian presumption that if, as the master insisted, war is concerned with the pursuit of politics by other means, then military means could only be properly understood by reference to political purposes.

KEY POINTS

- Strategic studies began outside the universities.
- The Cold War and the arms race created the conditions for the development of the subject.
- Shifting policy needs made it difficult to establish the academic study of strategy in universities.

In and out of the Cold War

But what should be the political purposes of strategy? During the Cold War, the ends of policy seemed somewhat fixed. The contest between liberal capitalist and totalitarian socialist forms of government was inescapable. The central problem of policy was awesome in its implications but also relatively simple in its formulation. Deterrence was the issue: in what circumstances would nuclear threats work and what would be the consequences if they failed to deter war or were counterproductive in their effects?

How could political benefit be extracted from a nuclear arsenal without triggering a cataclysmic riposte? How could credibility be injected into preposterous posturing? The natural inclination of academics was to explore these paradoxes. (See Chapter 7.) This could be done both by developing ways of reinforcing deterrence, thereby avoiding war, but also by creating other policy instruments that might reduce dependence upon this high-risk approach to security. Scholars became interested in particular in arms control. (See Chapter 8.) Over time this had an important consequence. It encouraged a perspective that went beyond the purely national to the systemic. A rational American policy came to be defined as one that coaxed out of Moscow a more rational Soviet policy.

The changes in the character and tempo of the Cold War naturally influenced strategic studies. After the Berlin and Cuban crises of the early 1960s further development of the purer theories of deterrence seemed less important. Academics began to find a role in questioning official policy and warning of the limits to deterrence, the distorting effects of domestic and organizational politics on crisis management, and the perils of misperception. The second-order technical studies sought to offer ways out of practical difficulties experienced in arms control negotiations. A further development came when it was recognized that too much of the 'golden age' literature had taken the political context for granted, or had at least failed to appreciate the dynamic consequences of the upheavals in the Third World. After Vietnam, these aspects of strategy were much harder to ignore. To understand the conditions in which armed forces might be used, or at least threatened, it was necessary to delve into a diverse range of regional security issues. It seemed more important to draw attention to the complexities of the Middle East or Central America than to think up fancy but safe ways to threaten Armageddon. Furthermore, as official deterrence policies moved to reduce their nuclear bias by strengthening the conventional forces and doctrine, professional military knowledge and experience appeared much more relevant. So well before the end of the Cold War the field of strategic studies (now often referred to as security studies) had become diffuse. There was no recognized academic discipline, only a broad area of study, coming under a variety of headings (peace, war, defence, security, strategy, arms control). The only unifying factor was that the interest lay beyond practical matters, concerned with the actual employment of armed force, to the political purposes for which it might be employed and the political measures that might be adopted either to prevent this employment or to bring it to an end.

In these circumstances it was unavoidable that those working in the universities would have to follow the wider policy debate. Given the sort of upheavals associated with the end of the Cold War and its aftermath, this was no small matter. When the policy issues of the day moved from great power confrontation and nuclear arms control to intra-state wars and humanitarian intervention, then quite different skills might be needed. The old agenda demanded scholars with a grasp of traditional statecraft, a knowledge of the political thinking at the highest levels of the world's key capitals, sensitivity to alliance relations, and a technical understanding of the properties of the critical weapons systems and how they might be employed. Add in such questions as the management of defence budgets and the intricacies of arms control negotiations, and it becomes clear that during the Cold War years, strategic studies had to draw on a broad range of expertise.

Then out goes the Cold War and in comes ethnic conflict, carrying with it vast quantities of anthropological and sociological literature, combined with the need to follow

political developments in small and weak states, whose leading lights are not themselves plugged in to the international policy circuit. Dirty little militia wars and problems of humanitarian intervention have nothing to do with elaborate theories of deterrence. (See Chapter 9.) Some argued for an even more complete shift away from the traditional agenda, insisting that the staples of conflict and violence must give way to the far more important factors of environment and economics. A hypothetical university department set up to address strategic studies during the Cold War would find that the original interdisciplinary requirements—polymathic enough—were suddenly expanded to absurd lengths.

Not surprisingly, academics often appeared to be uncertain about the future of the international system and how to handle the new agenda. It became even more difficult to give confident advice in the form of crisp bullet points. Policymakers became impatient with those qualities that academics believe to be the most valuable: long-term thinking, stretching the bounds of the possible, and taking complexity as a challenge rather than an excuse for not going into too much detail. Academics interested in security could see their funding in decline and their best work crowded out by partisan clamour, parochial agency interest, and more sensationalist fare. While the pull from the policy world was for the simple, snappy, and short-term, the push from the academic world was almost exactly in the opposite direction. The study of international relations, established to address the problem of war, sought to gain respectability by acquiring all the attributes of a proper discipline, including a preoccupation with theory and methodology. Academic advancement has come to depend on 'conspicuous scholarship'—publishing in the right journals, linking relatively innocuous case studies to great theoretical issues and, through extensive footnotes, demonstrating a capacity to reference (though not necessarily to read) all potentially relevant literature. To those for whom language itself has become an ideological battlefield, and all empiricism suspect, policy relevance signifies the antithesis of sound scholarship.

KEY POINTS

- Cold War strategy was relatively simple, focusing particularly on the requirements of deterrence.

- Even before 1991, the field of strategic studies became more diffuse as the political context of international relations changed.

- The opening of a new era of ethnic conflict in the 1990s presented strategists with a more complex international environment that required a wide range of new expertise.

- In the post-Cold War period, uncertainty predominated and policymakers became less interested in what academic strategists had to say. As a result, a number of scholars turned their attention to what was regarded as the academically more respectable pursuit of the study of theory and methodology.

The academic and policy worlds

The relationship between the academic and policy worlds is fraught with ethical and practical difficulties. The need for access and the desire for influence must be balanced against the risk that critical faculties might be blunted and intellectual integrity corrupted by the quest to please policymakers. The academic may not want to help the **practitioner**, perhaps disapproving of the objectives being pursued. In terms of defining a field of study, the vantage point of a student of strategy is quite different from that of a practitioner. Efforts by the former to display some superior wisdom may well deserve to be treated with contempt. The most helpful role remains that which can be properly described as 'academic' (even though in the policy world this is all too often synonymous with irrelevant). The task is to **conceptualize** and **contextualize** rather than provide specific guidance. If it is done well, then the practitioner should be able to recognize the relevance for whatever may be the problem at hand.

Strategy is rarely atheoretical in practice. The theories may be implicit and undeveloped, following Keynes's famous observation:

Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back. (Keynes, J. M., *General Theory*, 1947)

Yet is it the case that academic theory, even of the highest quality, can be of great value to the **'practical man'**? The complaint might be that academic works rarely address problems in the same form in which policymakers face them. Officials have little choice but to range far and wide because of the nature of the judgements they are required to make, often in a hurry. It may be necessary to address the efficiency of various forms of coercion as well as inducements, and in so doing to draw on observations about human nature under stress, problems of organization of large groups of people on the move, negotiating techniques, visions of a good society, and standards of ethical conduct. (See Box 14.1.)

'Practical men' can expect to be judged by results. They will therefore tend to rely on what works for them. This may be intuition and hunch, or lessons drawn from searing experience or remembered bits of history. Such sources may be relied upon in preference to excellent information sources and exemplary staff work. When matters are finely balanced but a decision has still to be taken, a feeling about the problem may be as good a guide as any. This may strike an academic as being wholly inappropriate or based on disgracefully exaggerated generalizations. Certainly the results from such approaches can be very poor. But whether a proper academic methodology would do any better is moot when there is no time for long projects or tolerance of caveats. Wise strategists may research their decisions as much as possible, but in practice time often precludes extensive deliberation. When a general is wondering whether an enemy formation might break in the face of a sudden attack, he is not going to be impressed if told that more research is needed or that his working hypothesis is inherently untestable. Once a fateful decision has been taken, an open mind becomes a luxury because any reappraisal may result in confused orders and demoralization.

The 'practical man' offers another observation. Strategic practice, as opposed to theory,

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BOX 14.1

A general entering into battle must consider:

- politics (how best to define the goal of the campaign; the importance of keeping allies happy, what the people back home will stand);
- engineering (how well the weapons work or are likely to work in practice; possible modifications to suit local conditions, ensuring that weapons are properly maintained);
- sociology (the likely cohesion of the enemy force under fire);
- psychology (how to motivate his own soldiers; getting into the mind of the enemy commander);
- geography (the possible impact of terrain on particular tactics);
- history (what other generals got away with in similar circumstances);
- economics (the rate at which he dare expend *matériel* on specific targets).

All these considerations apply only to getting the best out of one's own side. The need to think about an enemy adds even more issues that must be factored into strategic deliberations.

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demands **risk taking** on behalf of a wider constituency, normally with the lives of service personnel and possibly with whole societies, and this brings with it awesome responsibilities. It involves mobilizing human and material resources according to a developed plan, against anticipated opposition, and in pursuit of stated objectives. If the objectives are misplaced, the plan misconceived, the resources unavailable or poorly mobilized, then the strategy will fail and this will be the strategist's responsibility. It is this sense of being **tested by practice** and **judged by results** that gives strategic reasoning its edge. The unaccountable academic should properly feel a degree of humility when advising on such matters.

This may help explain why the study of strategy is accommodated only with difficulty in academic life. As practice it provides opportunity for chance and irrationality to hold sway. The **purist** might be appalled at the arbitrary mixture of politics, sociology, economics, psychology, and history that regularly influences decisions in crisis and combat, never mind the great contributions made by intuition and hunch. Yet the fact that reality rarely shows respect for disciplinary boundaries might give the academic pause for thought, as might evidence of the extent to which carefully qualified propositions, excessively crafted formulations, and a reluctance to pronounce until all possible avenues of research have been exhausted can get in the way of clear thinking.

Effective policy outside of academia draws on a range of considerations that within academia are each confined to its own disciplinary box. Within the universities, intellectual progress is assumed to depend on commonly accepted methodologies being rigorously applied within a known conceptual framework to produce results able to withstand peer review. The process is watched over sternly by professional associations and journal editors—the **'gatekeepers'**. They ensure that standards are maintained so that progress can be measured. Without the disciplinary boxes, teaching and research probably would become unmanageable. Nonetheless, disciplinary boundaries are often artificial, and sustained through jargon that excludes the uninitiated. Indeed, academics often develop particular strategies to sustain these disciplinary boundaries and to fight off intellectual intruders. Yet many of the most important academic cleavages cut across these boundaries. Fads and fashions—from rational actor theory to deconstructionism—migrate easily. Often the most innovative and influential figures are those who refuse to be confined by the established boundaries, but are happy to borrow from others. Imaginative academic administrators often ignore them. In universities as in other organizations the closer one gets to particular decisions the more complex and multifaceted they appear. Practical problems can rarely be encapsulated in the terms of a single discipline. Life is interdisciplinary.

KEY POINTS

- Tensions inevitably exist between the academic and policy worlds with their different responsibilities.
- 'Practitioners' often complain about the irrelevance of academic studies to immediate problems they face.
- Strategic reality is wide ranging and inter-disciplinary and does not fit neatly into the narrow focus of most university departments.

The study of strategy

Strategic studies poses a further and particular challenge to the **social sciences**. It tends to adopt the perspective of individual actors within the system, as they try to make sense of their environment and shape it to their needs as best they can. Much social science theorizing necessarily seeks to reduce the importance of human agency by looking for patterns and regularities in areas that we might have thought in our naivety to be governed by choice. Deliberate political change is still inadequately studied in political theory except in a rather cynical way. There is no point in studying strategy unless one believes that the course of history can be altered through the choices made by individuals. Those who believe that the analysis of politics and international relations requires attempts to identify long historical cycles, or universal laws of political life, or invariable patterns of behaviour, or structural determinants of actions that leave little scope for local decision, are unlikely to find strategy particularly interesting or even relevant. Instead of finding anomalous behaviour intriguing, these determinists may find it irritating because it undermines the predictive power of their models.

Strategy is important only if it is believed that individuals, groups, or governments face real choices—to the extent that the reasoning which informs these choices is worthy of careful examination. By focusing on actors within the system and their sense of their own interests and aspirations, strategic studies must be seditious. It encourages the analysis of those situations where order is absent, or else where disorder is encouraged by those who believe that it will be to the advantage of those on whose behalf they are acting.

This appreciation—almost celebration—of choice is essential to the study of strategy. Strategy is undertaken in the conviction that it is possible to manipulate and shape one's environment rather than simply become the victim of forces beyond one's control. For this reason, students of strategy are naturally 'political voyeurs', observing the choices of others with a discerning eye whether or not they have sympathy with the ultimate aims. They assess the efficiency of various forms of coercion as well as inducements. They develop and refine views about human nature under stress, the organization of large groups of people on the move, negotiating techniques, visions of a good society, and standards of ethical conduct.

In light of these broad interests, there is no reason in principle why strategic studies, defined as an intellectual approach to certain types of problems rather than a field of study, could not become more prominent in academic life. Indeed we know this to be the case. There are now far more courses about strategy in management departments than in international relations departments. Unfortunately, this development has encouraged the rather loose view of strategy as being concerned with visionary planning or the management of large organizations in uncertain environments. Nonetheless, the classical military strategists—Sun Tzu more than Clausewitz—loom large in the management literature, far more so than the business strategists loom in the military literature. (See Chapter 1.) Furthermore, many of the more formal methodologies, of which the most famous remains **game theory**, developed in the late 1950s with nuclear deterrence in mind, have become even more influential in economics and management studies. (See Box 14.2.)

Formal methodologies have returned to political science departments as **rational choice theory**, although in a form that often appears to confirm the old jibe that political science is an area of study that in failing to achieve science avoids that dangerous subject

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BOX 14.2 SIMILARITIES AND DIFFERENCES BETWEEN THE IDEAS OF CLAUSEWITZ AND SUN TZU

The extent of the cultural and historical gaps separating Sun Tzu's *The Art of War* and Clausewitz's *On War*, not to mention the apparently contradictory nature of their most well-known dicta, has encouraged the *a priori* assumption that Sun Tzu and Clausewitz espouse essentially antagonistic theories. But closer scrutiny reveals that while a number of differences exist, so do many similarities and complementary ideas . . .

The main points on which Sun Tzu and Clausewitz disagree concern the value of intelligence, the utility of deception, the feasibility of surprise attack, and the possibility of reliably forecasting and controlling the course of events on the battlefield. On the qualities requisite for a military commander, though, they agree in principle but differ in emphasis: Sun Tzu relies chiefly on the master of war's skill in making calculated, rational choices, while Clausewitz considers the military genius's artistic intuition to be the critical factor. Finally they hold similar views on the primacy of politics in war; the need to preserve the professional autonomy of the military in action; the overall importance of numerical superiority; and the folly of not securing victory as rapidly and decisively as possible once war has become inevitable.

From Michael I. Handel, *Masters of War: Classical Strategic Thought* (London: Frank Cass, 1996).

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politics. It offers undoubted analytical rigour, a shared starting point for numerous lines of enquiry and considerable theoretical promise. The problem is that the methodology can be off-putting and restrictive, readily and usefully applied to only a limited number of types of choices. It copes poorly with complexity, as well as requiring bold assumptions about what it means to be rational. This is especially disconcerting when studying armed conflict, famed for its tendency to irrationality and the imperfection of available information (pushed by Clausewitz to the centre of his theory with his stress on friction and the fog of war). Game theory provided an important means of thinking through the alternative options that presented themselves to policymakers in the nuclear age, and in particular the need to recognize the incentives for co-operation in the midst of antagonism, but it could never capture the range of factors that shaped critical decisions.

KEY POINTS

- Strategic studies, with its focus on individual actors and the importance of deliberate political choice, poses problems for the social sciences, which emphasize wider patterns of behaviour and the limited opportunities for achieving change.

- Strategists are 'voyeurs', scrutinizing the choices made by others concerned with difficult decisions about the role of armed force.

- Strategic studies can be seen as an intellectual approach to specific problems rather than a distinct field of study.

Realism: Old and new

For a more overtly political view of strategy we might look to the **realist tradition**. Students of politics and international relations often criticize this tradition as being simplistic and obsolete, bound up with the assumption that the only choices that matter are those that states make about military power. There are three aspects to the critique: an epistemological challenge to what is taken to be an exaggerated claim for objectivity, as if this is the only true reflection of 'reality'; the disregard of domestic and transnational factors; and the preoccupation with armed force to the exclusion of peaceful means of exerting influence and resolving disputes. This latter complaint has developed into a charge that the realists legitimize armed force as an acceptable instrument of policy. This indictment of strategists on moral grounds is directly related to the first, apparently more scholastic, complaint about objectivity. The realists might claim that they do no more than attempt to make sense of the world as they find it, while their critics suggest that the very language and concepts they use encourage a dangerous view of the world. (See Chapter 2.)

A defence of strategic studies does not require a defence of realism. There are, however, elements of the realist tradition that are worth preserving while other aspects need updating. An approach to political analysis that prided itself on coming to terms with the world

as it was rather than as idealists would like it to be is now supposed to depend on a dubious claim that key international events can largely be explained by the structurally defined means by which states safeguard their security. There is room for a **non-dogmatic realism** that would acknowledge the significance of non-state actors, the impact of social, economic, cultural, and local political factors on state behaviour, and the importance of values and mental constructs. Realists also could be more sensitive to the epistemological issues raised by presumptions of objectivity. If practitioners of international politics now talk regularly about issues of identity, norms, and globalization, then they are part of international reality. To be powerful was often described within the realist tradition in terms of possessing substantial assets—so much wealth or military capabilities. Yet poor strategy can see these squandered or trivialized, while good strategy can extract substantial political effects from meagre resources. In this sense strategy is essentially an art, less about applying power and more about creating it in the first place. This requires a more subtle view of power as existing only within political relationships, manifest as actors are able to alter the behaviour of others according to their own preferences.

The **constructivist** position, a potential safe haven for those troubled by structural realism while leery about following **post-modernist theory** into a deconstructed, relativist mire, stresses the importance of the interaction between the way we describe the world and how we act within it. This can represent a real advance on the tendency within the realist tradition to think of power as a measurable resource. Such simplistic thinking leads to a view of strategy as no more than a mechanical matter of expending resources in the pursuit of clearly defined objectives. Put this way, it can appear almost as a science, opening up possibilities for prediction. The practical strategist is more likely, however, to be (perhaps unwittingly) something of a constructivist. Effective strategy requires a clear sense of the dynamic relationship between **ends and means**, knowing that how ends are defined in the first place is critical to whether available means will be adequate. Vital judgements—such as finding the optimum balance among broadening a coalition to maximize the isolation of the opponent, the limited time available for coalition formation, the goals that will have to be dropped to bring in the most reluctant, the extra obligations that might have to be accepted, the otherwise neutral opinions that might be offended—turn on the way we understand the workings of our own and other political systems.

KEY POINTS

- Despite critiques of realism, there are elements of this school of thought that remain very useful in the study of strategy, while there are other elements that can be brought up to date.

- A case can be made for a non-dogmatic realism which provides a more subtle approach to the role of power in international politics than the neo-realist approach, which emphasizes the structural constraints on state behaviour.

- Newer constructivist approaches also help to focus attention on the important dynamic relationship between ends and means, which is crucial in the outcome of any conflict.

The study of armed force

A **new realism** should therefore have no trouble looking beyond what makes states secure to what makes individuals and particular groups secure. It must also admit that the business of states, once almost completely bound up with security, now involves a range of economic, social, and environmental issues. The course and character of all conflicts, and the role to be played by armed force, must be reappraised. Strong rates of economic growth and forms of interdependence may well reduce tensions between states and create a stake in peaceful coexistence. Environmental disasters can undermine the credibility of the state apparatus so that it becomes vulnerable to other types of challenges. Changes in family structures and social mores may affect attitudes toward violence. Nevertheless, there is a need for more care when it comes to proposals to discard the traditional focus on organized violence, as if this has become, at least in the Western world, unimportant.

Strategy is more ubiquitous than violence. It is present in the politics of all human institutions, evident in any move to mobilize support or sideline opponents. The study of strategy does not depend on incipient aggression in human affairs. Nonetheless, the possibility of violence can have an important impact on attempts to develop general theories of strategy that are capable of addressing all manner of political situations. If strategy is about choice, then armed force provides some of the most perplexing and starkest choices that can be confronted. Opportunities for choice open the door to clashes between conflicting interests and values, to the rough impact of brute force and to the more subtle effects achieved by guile and wiles. Most political objectives can be met without the use or threatened use of violence. There are other sources of power. But physical violence is the ultimate political instrument and, if available, can overwhelm all others. No individual, group, or state can ignore the threat of violence because it challenges their very existence. Threats of force are likely to be made when basic values are at stake. Situations involving the purposive use of violence are likely to stand out from the run-of-the-mill activities at both the national and international levels. By their nature they concentrate minds on fundamentals. Ethically and politically they require exceptional justification. For all these reasons, the potential for violence provides a natural starting point for any attempt to build up a **general theory of strategy**.

This is not the same, however, as arguing that formulations developed with armed force in mind can serve a variety of purposes. For example politicians may dramatize the more troublesome social problems by calling for 'wars' against them (on drugs, cancer, etc.) and suggest that strong generalship is needed for them to be defeated. The unreflective application of the **war analogy** can hinder understanding by attempting to squeeze different types of issues into an inappropriate conceptual framework geared to military threats. In the case of drugs, for example, it may have some relevance to confrontations with Third World drug cartels but less so with attempts to make sense of patterns of consumption. The notion of **'economic security'** can encourage a confrontational approach to trade policy. The concept of **'environmental security'** can prompt a search for explanations based on hostile actions rather than natural causes or everyday economic activity. Even more difficult is a term such as **'internal security'**, which might once have referred to the ability of states to deny armed groups, whether criminal or

political, the ability to challenge their authority, but which now takes in anything to do with the control of borders, including economic migration or the smuggling of contraband.

A different approach would be to acknowledge that the characters and competencies of states have been subject to many changes, while asserting that an enduring feature remains the aspiration to define and dominate the means of legitimate violence within territorial borders. The challenges can come from other states; or from within states in the form of secessionists, revolutionaries, or elitist conspirators; or from non-state actors in the form of drug cartels and gangsters, religious sects, terrorists and minority political movements. This continues to provide a relatively sharp focus for strategic studies and provides some compensation for an unavoidably wide context.

There is no reason in principle why the strategic imagination should not be directed towards improving the human condition by finding ways to restrict and marginalize armed force. Much strategic studies activity has been about the peaceful settlement of disputes, arms control, and generally supportive of the work of the United Nations. Major international negotiations require as much of a strategic sensibility as do major wars. Yet, and this may only be a matter of temperament, there does tend to be a dark side to the strategic imagination that picks up intimations of disorder at times of stability, that senses the fragility of human institutions even while striving to reinforce them, that cannot stop thinking of war while promoting peace. This dark side may explain the accusations that strategists allow armed force far more prominence in their deliberations than it deserves. Their response is that constant consideration of the potential for instability and conflict can help prevent it from occurring. Moreover, if the strategic imagination fails to generate scenarios for war, except by combining in an unlikely and tenuous fashion a series of gloomy hypotheses, then that itself is a positive sign.

KEY POINTS

- A new realism requires a broader focus than in the past to understand the nature of present-day conflicts, but care must be taken not to overlook the traditional role of armed force.
- Strategy is present wherever there is politics, and although political ends can be met without violence, force often remains the ultimate arbiter of political disputes.
- Despite attempts to apply the 'war' analogy ever more widely, strategic studies remains a subject which focuses on the role of armed force both in peacetime and in war.

Conclusion

Karl Marx once observed that people make their own history but not in the circumstances of their own choosing. The study of strategy should help with the understanding of how individuals go about history making and in so doing reshape the circumstances that they

face. These circumstances include interacting with others engaged in their own history making. I have argued that this activist view with its stress on choice and power is distinctive and cannot be confined within the boundaries of a specific academic discipline. It is a view that stands in contrast to those of others who are more determinist in their outlook, or transfixed by patterns and cycles in human behaviour, or who see the exercise of power as a failure of social institutions rather than part of their natural condition. I also suggested that the study of strategy can benefit from being pushed to extremes, by looking at those circumstances in which the prospect or actuality of organized violence looms large. Because we have not yet succeeded in banishing armed force from human affairs, we will still have to face many extreme situations.

A striking example of this point was provided by the events of 11 September 2001: an attack inspired in one of the most remote and poor points of the world, directed against one of the wealthiest. The attack was instigated using the most ancient of military technologies—the knife—in order to turn the most modern civilian aviation technologies against the West. Retaliation depended almost entirely on human skills, whether in police detection, intelligence gathering, or special force operations. This raised obvious questions about the relevance of any technology-driven revolution in military affairs to these kinds of threats to national security.

These extreme situations provide an agenda for policymakers that students of strategy can address. The future of strategic studies in terms of academic organization will be tested in a number of respects. First, strategists will remain relevant only if they have kept in touch with the range of possible situations that might tend to extremes. This range is expanding, from the many problems of weak states to the unlikely event of major war among the great powers. Second, as the political agenda becomes both more diffuse and in certain respects less pressing, strategic studies may become less coherent. Third, there will remain a need for caution and humility. There is an enormous gulf between offering advice and taking responsibility for decisions with potentially severe consequences, normally taken with insufficient knowledge or time for deliberation. Fourth, it must never be forgotten that strategy is an art and not a science.

QUESTIONS

1. What were the implications of the early development of strategic studies?
2. What is meant by the term 'the golden age of strategic studies'?
3. How did the Cold War affect the development of the study of strategy?
4. To what extent did the end of the Cold War alter the agenda of strategic studies?
5. Can the academic study of strategy help the 'practitioner' of strategy?
6. What challenges does strategic studies pose for the social sciences?
7. Does strategic studies have to be bound to the 'realist tradition' in the study of politics?
8. What is the future of strategic studies according to the author? Do you agree with this view?

REFERENCES AND GUIDE TO FURTHER READING

Useful sources on strategic studies during the so-called golden age of the late 1950s and 1960s include B. Brodie, *Strategy in the Missile Age* (Princeton, N.J.: Princeton University Press, 1959), J. Baylis et al., *Contemporary Strategy*, Volumes 1 and 2 (New York: Holmes and Meier, 1987), and L. Freedman, *The Evolution of Nuclear Strategy*, 2nd edn. (New York: St Martin's Press, 1989). The best sources on the history of strategic thought are P. Paret (ed.), *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (Princeton, N.J.: Princeton University Press, 1986) and Michael I. Handel, *Masters of War: Classical Strategic Thought* (London: Frank Cass, 1996).

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Index

Page references for Boxes and Tables are in italics.