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NUCLEAR WEAPONS AND THE AVERTING OF WAR

by Robert W. Malcolmson

"We have made a thing, a most terrible weapon, that has altered abruptly and profoundly the nature of the world."

J. Robert Oppenheimer,
physicist,
November 1945.

"By adding to the horror of war and therefore to the attractiveness of peace, the discovery of the atomic bomb will aid instead of hinder the diplomacy of peace."

Jacob Viner,
economist,
November 1945.¹

THE ROLE OF NUCLEAR WEAPONS

One of the wisest judgements ever made about nuclear weapons came early in the Cold War. The author was George Kennan, an influential official in the US State Department who, in the winter of 1949-1950, was about to resign his position. Kennan raised, in a trenchant manner, the question of the role of nuclear weapons in US security policy. There was, he said, one crucial question: "Are we to rely upon weapons of mass destruction as an integral and vitally important component of our military strength, which we would expect to employ deliberately, immediately, and unhesitatingly in the event that we become involved in a military conflict with the Soviet Union? Or are we to retain such weapons in our national arsenal only as a deterrent to the use of similar weapons against ourselves or our allies and as a possible means of retaliation in case they are used?" There was no doubt that *some* nuclear weapons would be retained. "The problem is: for what purpose, and against the background of what subjective attitude, are we to develop such weapons and to train our forces in their use?"²

If the role of weapons of mass destruction were strictly deterrent-retaliatory, then their numbers could be limited in accordance with their modest and limited role. The objective would be simply to deter nuclear use by another nuclear power. A large nuclear stockpile would clearly be redundant. If, on the other hand, the intention was, as Kennan put it, "to use weapons of mass destruction deliberately and prior to their use against us or our allies, in a future war, then our purpose is presumably to inflict maximum destruction on . . . the enemy, with the least expenditure of effort. . . . In this case, the only limitations on the number and power of mass destruction weapons which we would wish to develop would presumably be those of ordinary military economy, such as cost, efficiency, and ease of delivery."³

It was the latter position that triumphed overwhelmingly, not only in Washington, but also in the capitals of its allies. There was, in fact, during these formative years, a pronounced *nuclearization* of American defence policy. Nuclear weapons emerged as the centrepiece of Washington's national security policy. They were seen as an alternative to universal military training, which was highly unpopular; they were cheaper than other kinds of firepower and thus attractive to fiscal conservatives; and they allowed America to play from strength—the strength of its sophisticated technology and innovative industry—as against Soviet manpower in the form of the Red Army. As the Cold War intensified, increasing reliance was placed on the alleged deterrent power of nuclear weapons and on their supposed value in restraining and perhaps combating Communism. Communism, it was agreed, had to be contained; containment, from around 1950, was increasingly construed in terms of military might (as distinct from political and economic vitality); and the most robust and trouble-free bulwark of freedom was said to be the threat of nuclear use, notably nuclear first-use. The goal was clear:

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create a healthy fear in Moscow of American destructive power, and, by means of this fear, keep Communism in line (at a minimum) or even roll it back (a larger ambition).

The West, in short, became committed to a very *expansive* vision of the role of nuclear weapons. They were commonly treated as the decisive factor in the conduct of Cold War diplomacy. They conveyed messages of strength and resolve to Moscow. To use these weapons, it was often suggested, would not be all that remarkable. John Foster Dulles, the US Secretary of State, made this position clear in a speech he gave to a closed NATO ministerial meeting in April 1954. The United States, he said, believed that nuclear weapons "must now be treated as in fact having become 'conventional'. . . . It should be our agreed policy, in case of war, to use atomic weapons as conventional weapons against the military assets of the enemy whenever and wherever it would be of advantage to do so."⁴ Nuclear arms were war-fighting and war-winning weapons, and they were seen as vital to the conduct of a successful US foreign policy.

This policy assumed that America could maintain its nuclear superiority for many, many years (this assumption was widely held)—perhaps even indefinitely. It also required a massive increase in the nuclear arsenal. In 1947 the US possessed only 13 atomic bombs; in 1948 it had about 50. Thereafter the new weapons came to be mass produced. When Eisenhower was elected President, there were around 1,000 warheads in the US nuclear stockpile. By the time he left office, the arsenal totalled close to 20,000 warheads and was still growing.⁵ Maintaining the nuclear advantage, it was generally believed, was essential for the security of free peoples.

The nuclear-based policy of the United States and its allies was attractive as long as the Soviet Union was nuclear-weak. For a few years, during which the USSR was exposed to American nuclear strikes, the American homeland was invulnerable to Soviet strikes of any kind, nuclear or conventional. But such relative Soviet impotence could not last long. Nuclear weaponry had made killing spectacularly easy—so easy that no unilateral defence, no attempts at self-protection, could be expected to prevent national devastation. It was only a matter of time until American society was exposed to nuclear weapons and their long-range delivery systems in the hands of a rival.

Moscow had the strongest incentive to "correct" the problem of the invulnerability of American territory. Indeed, Soviet leaders were determined to show that two could play the nuclear game, first under Khrushchev, with his rocket-rattling theatrics, and later under Brezhnev, when the Soviet nuclear buildup was particularly pronounced. The Kremlin demonstrated that it, too, could produce

nuclear weapons in abundance. In response to the colossal American nuclear buildup, Moscow offered a colossal buildup of its own. And in doing so it deprived Washington of its nuclear "advantage." It brought about (for the first time) a true mutuality of vulnerability, and created the conditions for a kind of stalemate in the superpower relationship—a stalemate that sits uncomfortably with both the actual turbulence and incessant flux of world politics and the continuing desire of the great powers' military establishments to devise ways, as they have always done, to use destructive force of all available sorts in pursuit of their nations' political goals.

POLITICAL MEANINGS

The presence of nuclear weapons in the modern world, and the consequences and significance of their presence, have been variously interpreted. Official doctrines have changed over time. Experts who espoused a particular position in one decade took a contrary view some years later. People often speak of "nuclear deterrence" as if it has a clear and agreed upon meaning, which it does not have and never has had. Elaborate theories of deterrence are constructed in isolation from the messiness and muddle of actual political conduct. Since no nuclear war has yet occurred, speculation abounds when experience is slight. The public ignorance of nuclear policies is legion (some 80% of Americans do not know that their government is committed to nuclear first-use)⁶ and this ignorance is readily exploited by all varieties of ideologues and the spokesmen for numerous special interests. Contradictions and confusion are rife. Many people have tried to find their way through these thickets, in the interest of a clearer and 'dis-illusioned' grasp of reality. The following propositions are offered as an interim political and historical report card.

- (1) Nuclear weapons constitute, by their very nature and existence, a mortal threat. As has usually been the case with weapons of destruction, their possessors regard them as defensive while those against whom they are targeted see them as means of aggression. Few if any states, past or present, have admitted to being aggressive, for sovereign states interpret their own intentions kindly. Such moral conceits are commonplace in politics. However, putting putative motives aside, one is left with raw power. The destructive power of nuclear weapons has nothing to do with protection, or objective security, or self-defence—there is, in fact, no such thing as a "nuclear umbrella." Rather, these weapons are solely tools of destructive attack. Each nuclear

superpower thinks of itself as attacking only in retaliation against aggression and, at the same time, conceives that the other side's capacity for nuclear destruction could, in certain circumstances, be unleashed aggressively. As a rule the sense of comfort afforded to a nuclear possessor is more than offset by the fear engendered by the rival's nuclear arsenal.

- (2) What is really novel about the nuclear threat is the difficulty of carrying it out. In the past all threatening weapons were meant to be used, at least from time to time. To have weapons that exist *not* to be used would have seemed very strange (it seems strange now to many military planners). And yet to use them in any way holds out the prospect of national annihilation, given the inherent risks of chaotic escalation and uncontrollable violence.

These constraints pose problems for the preservation of peace. As Bernard Brodie, one of the most astute of the nuclear strategists, once observed, in the pre-nuclear age "the operation of deterrence was dynamic; it acquired relevance and strength from its failures as well as its successes."⁷ Earlier weapons were designed for both deterrence and combat use, and the effectiveness of dissuading attack was partly dependent on occasional battlefield performances. This connection is now obsolete. The nuclear threat must deter absolutely. Actually to make good on this threat is potentially suicidal. This tension between posture and action is nicely manifested in a remark by a French commentator. "Compared with other armaments," asserts André Fontaine, "atomic weapons have the advantage . . . that using them is so risky that those who have them are afraid to resort to them. The other weapons are intended to kill, these to intimidate."⁸ But can killing and intimidation be so readily dissociated? How can weapons effectively intimidate if it is widely believed that they cannot be effectively employed? How, in short, can this undeniable threat be rendered enforceable? Most of humanity has been taught to think of unenforced threats as bluffs. And bluffs almost always get called, sooner or later.

- (3) As a result of the creation of nuclear weapons, modern societies now confront and will continue to confront an extraordinary ambiguity in the notion of power. Power no longer means what it used to mean. As Henry Kissinger has remarked, "Until the beginning of the nuclear age it would have been inconceivable that a country could possess too much military strength for effective political use; every addi-

tion of power was—at least theoretically—politically useful. The nuclear age destroyed this traditional measure."⁹ For while we now have virtually unlimited power to destroy, this capacity implies very little power to get anyone to do anything. This remarkable power has been, in almost all respects, politically useless. Efforts continue to be made to show how it could be usable and to plan to employ it in traditionally coercive fashions, in the aid of foreign policy objectives; but these ventures in imagining nuclear war-fighting scenarios (such scenarios are central to the work of nuclear strategists) are still seen by most people who know anything about politics as naive, far-fetched, and incredible.

- (4) Because the nuclear threat is so difficult to execute as a rational political option, given the disproportionate relationship between limitless destructive means and finite human ends, this awesome power has become decidedly elusive and abstract and increasingly symbolic. Its significance has come to be located more in the realm of subjective than of objective reality. Thus Kissinger is able to assert, "the success of military policy depends on essentially psychological criteria."¹⁰ The policies of Washington are designed to influence the minds in Moscow—or, in Fontaine's words, "to intimidate." The notion of deterrence thus becomes largely if not entirely subjective. The 1983 report of the influential Scowcroft Commission followed this line: deterrence is there defined as "the set of beliefs in the minds of Soviet leaders, given their own values and attitudes, about our capabilities and our will. It requires us to determine, as best we can, what would deter them from considering aggression, even in a crisis—not to determine what would deter us."¹¹ The crucial ingredient in this psychological interaction is *will*: by demonstrating the will to use nuclear weapons, it is hoped to constrain the presumed hostile will of the other great power. What counts are perceptions. Kissinger put this view clearly: in the nuclear age "the assessment becomes more significant than the reality. Or rather, the assessment becomes the only reality." Until power "is actually used, it is what people think it is."¹²
- (5) The existence of this unused and probably unusable power leads, then, to highly psychological definitions of political rivalries, and these definitions are inherently pliable, imprecise, and easily stretched. Deterrence, from this perspective, is almost completely open-ended. It provides no way of knowing how much is

enough (much less how much is too much), or what weapons to buy, or when deterrence has been fulfilled. Just about anything can be read into it. This is why we constantly hear of the need to “strengthen our deterrent,” for since it is impossible to know for sure if the “minds of Soviet leaders” are fully deterred, then there is always a case for playing safe and, by means of further military deployments, insuring that our resolve will not be doubted. If deterrence is the basis of our security, it is not clear, according to this mode of thinking, how we could have too much of it. But this, of course, is exclusively “our” angle of vision. From the Soviet point of view our strengthened deterrent (greater numbers and/or more sophisticated weaponry) is simply a heightened threat to their security, to which they normally respond by strengthening their deterrent—that is, by increasing their lethal threats against the West. This reciprocal process of threat and counter-threat and counter-counter-threat persists unabated and shows no sign of diminished vigour in the immediate future.

- (6) In reply to such skeptical dissections of nuclear strategy, it is often pointed out that there has been no major war between the great powers since 1945; and this remarkable period of peace—now almost two generations old—is often judged to be a positive product of the presence of nuclear weapons. Surely these weapons have imposed a salutary restraint of terror on great power relations? Perhaps it might even be said that they have prevented the outbreak of a major war, particularly the sort of war that would result from Soviet aggression? As the conventional formulation has it, *deterrence works*, or, alternatively, *deterrence has kept the peace*.

There can be little doubt that nuclear weapons have induced statesmen to act with special caution. In a world of two massive nuclear arsenals, Washington is certain to think more than twice about challenging vital Soviet interests, however hostile it might be to these interests, and Moscow exercises similar prudence in its challenges to American interests. Both realize the importance of avoiding the kind of confrontation that might lead to armed conflict. But there is a danger of complacency in this line of thought, and the following considerations must be kept actively in mind:

- (a) The proposition that nuclear weapons “have kept the peace” is unproven and unprovable; indeed, it is no more than an article of faith.

The non-occurrence of something could have been for many different reasons, including, in this case, the possibility that neither side had any urge to start a war.

- (b) While it is commonly thought that US nuclear weapons have deterred Soviet aggression against the West, it must be said that we are dealing here, not with documented Soviet intention, but with Western suspicion and presumption. In fact, there is no evidence of Soviet plans to invade western Europe in the postwar years and much evidence to the contrary. If nuclear weapons have significantly restrained Soviet expansionism, the evidence to support this view has yet to be publicly revealed.¹³
- (c) While the fear associated with nuclear weapons has inhibited their actual use, this fear has done nothing to discourage their mass production. Whatever deterrence may or may not have done (and these discussions are largely speculative), it has certainly not restrained the massive preparations for war that we have witnessed since 1945. Indeed, it has aided, justified, and fuelled these nuclear buildups. The intense nuclearization of security policy has been done in the name of deterrence, which is constantly said to need strengthening.
- (d) Deterrence, unlike all previous approaches to security, assumes permanent success; and permanence, unlike the period since 1945, is a very long time. No policies—and no technologies—can be expected to work perfectly, and yet deterrence depends on such error-free conduct, indefinitely observed. Few things are permanent in relations between sovereign states: to expect a permanent stand-off in a highly militarized relationship between two great powers is to ask for a lot. Moreover, we know from consulting history that large stockpiles of weapons almost always get used, sooner or later. As Bernard Brodie once remarked about modern deterrence, we are “expecting the system to be constantly perfected”—that is, weaponry is constantly refined—“while going permanently unused. Surely we must concede that there is something unreal about it all.”¹⁴
- (7) Whatever doubts there might be about some of the dogmas of deterrence, there can be no doubt that modern science has presented humanity with a new existential reality with which we will always have to live. Whatever might happen to the world’s nuclear arsenals in the future, and even if they are dramatically reduced, the scientific knowledge that underlies this weap-

only will always be with us, ready to be converted into warheads at any time. There will always be the possibility that weapons of mass destruction *could* be used. This is no theory; it is simply a fact of life. As the military correspondent of the *New York Times* observed in 1947, "The awful weapons man has created are now forever with us; we shall walk henceforth with their shadow across the sun."¹⁵ Since science cannot be erased, we shall have to find ways of managing it intelligently and of not letting it get the better of us. This is the new and irreversible political state of nature in which we now find ourselves. At this elemental level, we will henceforth always be deterred simply because of our new-found capacity, as a species, for self-annihilation.

REASONS FOR REFLECTION

If deterrence is (as so often is claimed) the basis for our security, it is a policy which, whatever its alleged accomplishments, creates problems. This is because deterrence, in its usual military-strategic guise, is overwhelmingly *negative*. It highlights threats and punitive sanctions and ignores or deprecates the possibilities of positive inducements. This emphatic negativism undermines the search for other paths to security, notably those approaches that stress the value of diplomacy, negotiated agreements, and collaboration based on mutual interests. The preoccupation with deterrent threats tends to downgrade or exclude from consideration other options for dealing with Moscow. Moreover, deterrence, with its emphasis on displays of resolve, can easily be converted into intransigence and belligerence, which are too often confused with firmness and standing tall. Tough posturing by one side, in the name of deterrence, usually elicits similar resolute posturing from the other side, with a consequent increase in tensions between them. Deterrence doctrine also tends to be excessively fixated on the prospect of Soviet aggression to the exclusion of other potential causes of war, including regional crises that suck the great powers in against their will and the destabilizing impact of nuclear threats themselves.¹⁶

The central point is this: While deterrence may be in certain respects inescapable, it is not sufficient in itself. Threats are not enough. They must be combined with other, more positive levers and with less frightening modes of political exchange. McGeorge Bundy, former national security advisor to Presidents Kennedy and Johnson, has put this case well: "I propose that deterrence, however it works, should always be considered in the context of two

other interconnected objectives—reassurance of friends and detente with adversaries. Deterrence is part, but only part, of the politics of nations."¹⁷ It can only be a part for an obvious reason: fear and terror, the essence of deterrent threats, cannot serve on their own as the foundation for a promising, long-term policy for avoiding nuclear catastrophe. Frightened adversaries are certain to be, when a crisis erupts, very dangerous adversaries. Fervent proponents of deterrence are inattentive to the corrosive—and explosive—power of fear.

Fear is the principal ingredient in any pre-emptive attack, and pre-emption is a much more plausible possibility than is usually admitted. It is virtually certain that neither superpower is seriously planning a bolt-out-of-the-blue nuclear attack. However, each side thinks that the other side is deploying new weapons with first-strike implications—weapons which, it is feared, might undermine the "survivability" of its retaliatory deterrent. Each entertains fears that the other is pursuing a counterforce dominance: that is, a superior capacity to knock out the nuclear assets—missiles, bombers, control centres, communications systems, and the like—of the rival power. Each is not only trying to prevent this from happening by "modernizing" its own threatening weaponry. Each also has plans, in circumstances where war is thought to be imminent and inevitable, to attack pre-emptively. Whatever public talk we might hear about nuclear war being unwinnable, in the eyes of many military planners in both Washington and Moscow striking first is seen as preferable to striking second.¹⁸ In the United States pressures to adopt pre-emptive postures have been increasing, in the Navy as well as in the Air Force.¹⁹ First-strike options are taken seriously—and SDI will make them seem more plausible to anxious Soviet planners. As one well-informed observer of nuclear strategy, Thomas Powers, has concluded, "With glacial inexorability, the fear of war is being pushed aside by the fear of being caught on the ground."²⁰

All of this serves to remind us of how *destabilizing* is the relentless emphasis on deterrent threats. The supposed stability of deterrence is repeatedly challenged by the dynamism of unrestrained technology, for this technological momentum is continually producing weapons of enhanced lethality. In pursuing such weaponry, each side sees itself as acting defensively, to discourage attack, but the other side is more likely to interpret these deployments as signs of aggressive intentions. Thus we recall that the Soviet Union, in emulating Washington's earlier development of multi-warhead missiles (MIRVs), placed these warheads on much larger rockets, thereby giving rise to American fears of a first strike against its land-based missiles (the so-called "win-

dow of vulnerability"). Now, with major advances in missile accuracy, there are growing fears of "decapitation" strikes—that is, strikes against the nuclear possessor's command and control centres (the "brains" of each system). And there is always enough evidence, given the worst-case assumptions that infuse the thinking on both sides, to permit the military planners to speak anxiously and draw alarming conclusions.

Consider one example. The American deployment of Pershing II missiles in West Germany was justified publicly as a response to the Soviet deployment of SS-20s, but it is clear that these new and highly accurate US missiles were especially valued because of their potential for striking Soviet command centres. As a specialized journal with good links to the Pentagon reported in 1983, "With a range allowing strikes on Moscow from Germany, the removal of C² capability [i.e., command and control] by a comparatively small number of Pershings would render much of the Soviet ICBM first strike *and retaliatory* forces impotent. One high-up Reagan Administration official attested to the efficiency of using Pershing IIs to knock out Soviet C² installations . . ." ²¹ Moscow reacted to these deployments by installing new missiles in East Germany and Czechoslovakia, which put further pressure on NATO forces. All this deployment of new hardware was done, of course, in the name of deterrence.

Deterrent threats are designed, theoretically, to dissuade "potential aggressors," but there are compelling grounds for thinking that the most serious risks of war are now posed, not by deliberate aggression, but by an international crisis that spirals out of control. The principal danger is unintentional war: war as a result of miscalculation, or diplomatic bungling, or panic and confusion, or hasty and ill-considered action under pressure. Crises are likely to emerge out of increasing political tensions, and these tensions and suspicions and distrust make a crisis even harder to manage. As a distinguished military historian, B.H. Liddell Hart, once observed, "When relations are strained, an ill-judged step on one side may all too easily lead to a precipitate step on the other side, and to neither drawing back for fear of losing face, at home and abroad. That is the way wars break out, more often than by deliberate intention." ²² The fear of aggression, and clumsy efforts to forestall a feared aggression, are much more likely to cause war than is aggression itself.

The prospect of stumbling into war is, in the nuclear age, by no means remote. Modern technologies have dramatically reduced the time for political decision-making in a crisis—indeed, the time for exercising prudent judgement has been virtually liquidated. As one writer has said, "the very

decisions which should be made with the greatest deliberation, because of their potentially awesome consequences, may have to be made under the most urgent pressure of time." ²³ These time-pressures increase the likelihood that nuclear forces will be put on early alerts as the military commanders on both sides insist on maximum readiness. Such interacting and escalating levels of alert would be tough to control, especially when nuclear weapons are on the front line and primed for early use (as they are in Europe). ²⁴

These dangers deserve urgent attention, for some such crisis is probably inevitable. A retired American admiral has given a realistic forewarning of what to expect. "Sooner or later," writes Admiral John M. Lee, "in one crisis or another, through some misjudgment or misunderstanding or stupidity, or some unlimited dedication to some principle or purpose, absolute peace will fail. On that day, we must not be relying on nuclearized forces, armed and indoctrinated to use nuclear weapons when conventional elements get into trouble, at the highest pitch of nuclear readiness, pressing against their nuclear controls, and with no stopping point once nuclear war starts." ²⁵ The dependency on nuclear weapons that strategists call "extended deterrence"—the dependency that George Kennan warned against in 1950—injects an all-or-nothing component into the handling of crises. Our policy, as Admiral Lee asserts, "counts on the nuclear weapon, the suicide threat, to deter all East-West hostilities at any significant level, and to deter them forever. And it promises only unimaginable disaster if that threat fails." ²⁶ It's hard to conceive that we can't do better than this.

CONCLUSION

We can return to where we started: to the insights of George Kennan. Weapons of mass destruction, Kennan argued, "reach backward beyond the frontiers of western civilization, to the concepts of warfare which were once familiar to the Asiatic hordes. They cannot really be reconciled with a political purpose directed to shaping, rather than destroying, the lives of the adversary. They fail to take account of the ultimate responsibility of men for one another, and even for each other's errors and mistakes." ²⁷ Kennan's perspective was not only humanistic, unlike that of most nuclear theorists, it was also very much in the realist tradition of appreciating the workings of power and the human purposes that power serves. The nuclear revolution has transformed the underpinnings of world politics, though not, as yet, political thought or international conduct.

Stanley Hoffman, one of the most astute of the present commentators on international affairs, in the tradition of Kennan and Hans Morgenthau, has proposed that what we need today, "both among intellectuals and in statecraft, is a *quest for a new realism*, one that acknowledges the stark realities of a divided world, yet tries—through cooperation and collective action in a variety of fields—to change the game sufficiently to prevent revolutionary hurricanes and nuclear explosions from destroying it, and us, altogether. A realism of 'the struggle for power' is not enough. A realism of struggle *and* world order has yet to emerge."²⁸

It is this pursuit of a reasonable and just world order that is imperative. Nuclear weapons are one expression of our new state of global interdependence, for universal vulnerability is now an irrever-

sible fact of life. National sovereignty has been rendered partly obsolete, for no state can now achieve security unilaterally. There are no strictly military solutions to the problems generated by our own destructive powers. Survival will depend on greater political wisdom; less reliance on threats and more on reconciliation; and an enhanced recognition that, in the face of the present semi-anarchy of a world of fearful nation-states, internationalism offers the only promising path to an endurable future. Rivalries, of course, will persist. But in a world wired to explode, competitiveness must be complemented by collaboration and muted by a deepened sense of common interests. A planet dominated by the rules of Social Darwinism—which is what we've got now—has only a bleak future, perhaps, in the long term, none at all.

NOTES

1. Oppenheimer's and Viner's views were published in the *Proceedings of the American Philosophical Society*, vol. 90, no. 1 (January 1946), pp. 7 and 57.
2. *Foreign Relations of the United States, 1950, Volume I* (Washington: US Government, 1977), p. 29.
3. *Ibid.*, p. 30.
4. *Foreign Relations of the United States, 1952-1954, Volume V, Part 1* (Washington: US Government, 1983), p. 512.
5. Thomas B. Cochran, William M. Arkin, and Milton M. Hoenig, *Nuclear Weapons Databook, Volume I: US Nuclear Forces and Capabilities* (Cambridge, MA: Ballinger, 1984), p. 15.
6. McGeorge Bundy, *et al.*, "Back from the Brink", *Atlantic*, August 1986, p. 36.
7. Bernard Brodie, "The Anatomy of Deterrence", *World Politics*, vol. XI, no. 2 (January 1959), p. 175.
8. André Fontaine, "What Weapons against War?", *Manchester Guardian Weekly*, 3 July 1983, p. 12.
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11. "Report of the President's Commission on Strategic Forces (Excerpts), 11 April 1983", *Survival*, July/August, 1983, p. 177.
12. Kissinger, *Necessity for Choice*, p. 13; and his edited volume, *Problems of National Strategy* (New York: Praeger, 1965), p. 4.
13. This question is discussed more fully in my *Nuclear Fallacies: How We Have Been Misguided Since Hiroshima* (Kingston and Montreal: McGill-Queen's University Press, 1985), pp. 71-75.
14. Brodie, "Anatomy of Deterrence", p. 175.
15. Hanson W. Baldwin, *The Price of Power* (New York: Harper, 1947), p. 328.
16. These issues are examined more fully in an excellent article by a former officer in the Royal Navy, Michael McGwire, "Deterrence: the problem—not the solution", *International Affairs* (London), vol. 62, no. 1 (Winter 1985/86), p. 55-70.
17. McGeorge Bundy, "Existential Deterrence and Its Consequences", in Douglas MacLean, ed., *The Security Gamble: Deterrence Dilemmas in the Nuclear Age* (Totowa, New Jersey: Rowman and Allanheld, 1984), pp. 7-8.
18. For evidence concerning the pre-emptive first strike strategies of the two superpowers, see Daniel Ford, *The Button: The Pentagon's Strategic Command and Control System* (New York: Simon and Shuster, 1985), especially pp. 105-108 and 233-242; and Stephen M. Meyer, "Soviet Perspectives on the Paths to Nuclear War", in Graham T. Allison, Albert Carnesale, and Joseph S. Nye, Jr., eds., *Hawks, Doves, and Owls: An Agenda for Avoiding Nuclear War* (New York: Norton, 1985), especially pp. 178-182 and 200.
19. See especially Desmond Ball, "Nuclear War at Sea", *International Security*, vol. 10, no. 3 (Winter 1985/86), p. 23.
20. Thomas Powers, "Spontaneous Combustion", *The Sciences*, September/October 1985, p. 52.
21. *Defense Electronics*, August 1983, p. 19 (emphasis added).
22. B.H. Liddell Hart, *Defence of the West* (London: Cassell, 1950), p. 86. "The study of war has taught me", he wrote in a later work, "that almost every war was avoidable, and that the outbreak was most often produced by peace-desiring statesmen losing their heads, or their patience, and putting their opponent in a position where he could not draw back without serious loss of 'face'." (B.H. Liddell Hart, *Deterrent or Defence: A Fresh Look at the West's Military Position* [London: Stevens, 1960], p. 254.)
23. Ole R. Holsti, *Crisis, Escalation, War* (Montreal and London: McGill-Queen's University Press, 1972), p. 119.
24. The major authority on these crucial questions is Paul Bracken, *The Command and Control of Nuclear Forces* (New Haven, CT: Yale University Press, 1983).
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26. *Ibid.* Other military officers have been similarly critical of this nuclearized policy: see for example Field Marshal Lord Carver, *A Policy for Peace* (London: Faber and Faber, 1982), especially chap. 4; and Admiral Noel Gayler, "A Commander-in-Chief's Perspective on Nuclear Weapons", in Gwyn Prins, ed., *The Choice: Nuclear Weapons Versus Security* (London: Chatto & Windus, 1984), p. 15-28.
27. *Foreign Relations of the United States, 1950, Volume I* (1977), p. 39.
28. Stanley Hoffmann, "Realism and Its Discontents", *Atlantic*, November 1985, p. 136 (first emphasis added).

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