Strategic Thought in America, 1952–1966

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In the 1950s, strategy emerged in the United States as a new field with a distinct intellectual personality. A small group of men—Bernard Brodie, Thomas Schelling, Albert Wohlstetter, and a handful of others—working mainly at the RAND Corporation, had moved into an intellectually barren "no-man's land" traditionally neglected by both military officers and students of international politics.[1] The body of thought they created was very different from anything that had come before. Their ideas would prove to be enormously influential, and their style of analysis in large measure became the sophisticated way of approaching nuclear issues in the United States.

The aim here is not simply to offer yet another description of this body of thought. The real goal is to try to give some sense for how this intellectual tradition took the shape it did—what caused it to emerge, how the central ideas developed, and why, after an extraordinary period of intellectual productivity, these ideas by around 1966 or so seemed to have played themselves out. Why, in other words, did strategy hit something of a dead end in the late 1960s?

The focus will be on the basic tension that dominated the development of this set of ideas. It was as though the coming of the hydrogen bomb in 1952 had released two great shock waves in the world of strategic thought. There was on the one hand the fundamental point that when both the United States and the Soviet Union had obtained survivable and deliverable strategic forces, all-out war between these two powers would become an absurdity: with thermonuclear weapons, the overriding goal had to be to limit war, and in particular to reduce to a minimum the risk that the nuclear powers would launch massive attacks on each other's cities.

[1] Bernard Brodie, *Strategy in the Missile Age* (Princeton, N.J.: Princeton University Press, 1959), 7.

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On the other hand, there was the equally basic notion that the threat of nuclear war could be used for political purposes that went well beyond deterring the use of nuclear weapons by an adversary. The idea that one could exploit the threat of escalation was a product of the early atomic age. But it was the coming of the hydrogen bomb that brought this problem into focus. Indeed, the way strategic thought developed—the very distinctive shape it came to have—was very much a product of the thermonuclear revolution.

It was not that separate factions rallied around each of these two poles; the history of American strategic thought during this period cannot be summed up as a dispute between those who believed in simple deterrence and those who wanted nuclear forces to play a more far-reaching political role. Strategic discourse during this period was not sectarian or doctrinaire. The striking thing was that the same people were attracted to both approaches, often at the same time. But these two basic ways of approaching strategy were in obvious conflict with each other. The fundamental question was whether there was any way this conflict could be resolved.

The Thermonuclear Revolution

It is perhaps odd that the most important work on strategic issues was done in the 1950s and early 1960s—or more precisely in the period from 1952 to 1966. One might have thought that the coming of the atomic bomb in 1945 would have marked the watershed. But even as late as 1950 or 1951, concepts of strategic bombing that had emerged before and during World War II continued to provide an adequate framework for thinking about how an atomic war would be fought. The early atomic bombs were not so powerful that numbers and accuracy were no longer important. Defense against bombers could still make a difference; base location would remain important because of its effect on the intensity with which the bombing campaign could be carried out; and armies and navies would continue to play a significant role in defending those bases and perhaps in blunting an enemy counterattack. A new war, it was assumed, would be a war of attrition, a war of endurance. Thus mobilization was still meaningful; it therefore still made sense militarily to try to destroy the enemy's war-making capability by destroying its economy. In other words, the atomic bomb, as important as it was, had not rendered the existing conceptual framework obsolete. This was true even after the Soviet Union had begun in 1949 to amass atomic forces of its own.

In the early 1950s, however, the situation was to change dramatically. By the beginning of 1952, it had become clear to those in the know that a thermonuclear weapon with an explosive force a thousand times as great as the bombs dropped on Japan "was soon to be tested and that success was virtually certain."[2] Viewed in a somewhat broader context, the hydrogen bomb can be seen as simply the most

[2] Bernard Brodie, introduction to "Towards a New Defense for NATO: The Case for Tactical Nuclear Weapons," National Strategy Information Center, Agenda Paper No. 5 (New York: National Strategy Information Center, 1976), 1.

awesome of a whole series of developments in nuclear weapons technology that were reaching a climax at the beginning of the 1950s. Fission bombs had by this time become smaller, lighter, mass-producible and more efficient in their use of fissionable material. Maximum yields of even pure fission weapons had increased dramatically, rising from the twelve kilotons of the Hiroshima bomb to a half-megaton in 1952. "Boosted" weapons, where part of the explosive power derived from a fusion reaction, and which were being developed at the same time, produced a yield in the one-megaton range.[3] The result was that even if true thermonuclear weapons had never been deployed, the traditional basis for thinking about air warfare would in all probability eventually have been undermined.

In the minds of people at the time, however, the great revolution in military technology was dominated and symbolized by the huge thermonuclear explosives first tested in 1952. It is for this reason that the new conditions of warfare that were emerging in the early 1950s will be referred to here as the thermonuclear revolution. Certainly, for the small group of civilians at the RAND Corporation who had begun to think seriously about basic problems of nuclear strategy, it was the hydrogen bomb that marked the decisive break with the past.

Charles Hitch, for example, was at this time one of the leading figures at RAND, and in the summer of 1952 he and William Capron prepared a report on the implications of the new weapon. "We may," they wrote, "be able to absorb a large number of A-bombs and recover, particularly if the targets selected are not optimal or if bombing accuracy is poor; we cannot stand fifty 25-MT bombs if they are well-placed and the results are not very sensitive to the placing."[4]

Bernard Brodie, then also at RAND, was by this time arguing along similar lines. The ordinary atomic bomb, he said in a talk at the Air War College, was "not so absolute a weapon that we can disregard the limits of its destructive power." One still had to be concerned with bombing accuracy and with the physical vulnerability of the target. But with the H-bomb, concerns of this sort would count for "astonishingly little."[5] What, however, did this imply about strategy? Simply that the basic aim had to be deterrence—that the overriding goal had to be to prevent war through the threat of retaliation? The problem was that such a threat could carry weight only if one were prepared to follow through on it. Peace would depend, Brodie had argued even in the late 1940s, on a universal conviction "that war is far too horrible even to be contemplated. And the great dilemma is that

[3] See David Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945–1960," *International Security* 7 (Spring 1983): 24.

[4] C.J. Hitch and W.M. Capron, "Implications of Potential Weapon Developments for Strategic Bombing and Air Defense: A Preliminary Study," RAND Research Memorandum RM-868, 10 July 1952, 28.

[5] Bernard Brodie, "Changing Capabilities and War Objectives," 10–11, 18–19, Bernard Brodie Papers, Box 12, UCLA Library. This and a number of the other articles and papers cited here have been published in Marc Trachtenberg, ed., *The Development of American Strategic Thought*, 6 vols. (New York: Garland Publishing, 1988).

that conviction can be sustained only by our making every possible effort to prepare for war and thus to engage in it if need be."[6]

The problem of deterrence could therefore not be divorced from the problem of use. What made this issue so difficult, Brodie stressed in 1952, was the realization that an atomic war would inevitably be a "two-way affair," and an all-out war with thermonuclear weapons might well be tantamount to national suicide. It was obvious "that national objectives could not be consonant with national suicide." Brodie had earlier thought that Carl von Clausewitz, with his insistence on the close linkage between political objectives and military means, had become obsolete: even the early atomic weapons were too destructive to be harnessed to rational political goals. But he had since come to see that Clausewitz had been "saying something very profound." He had been saying that "war is violence—to be sure, gigantic violence—but it is planned violence and therefore controlled. And since the objective should be rational, the procedure for accomplishing that objective should also be rational, which is to say that the procedure and the objective must be in some measure appropriate to each other." Brodie's views had been moving in this direction even in 1949 and 1950. But the imminent arrival of the hydrogen bomb had made this sort of thinking particularly salient; a suicidal strategy could never be an appropriate means of supporting rational, political goals. It followed that one had to think about strategies that were not suicidal—that the means of violence had to be controlled and limited.[7]

Brodie's problem in the early 1950s was to think out how the atomic bombs should actually be used in war, and in particular how the "threat value" of nuclear weapons could be exploited. What he objected to was the assumption that the bombing attack should be as swift, as concentrated and as massive as possible. The general idea that there might be a better way to use nuclear weapons than simply launching the kind of concentrated "atomic blitz" called for in the war plans had been actively discussed at RAND even in the late 1940s.[8] But it was Brodie who gave the idea written expression; it was in fact to become a major theme in his writings. He laid out the argument, for example, in his paper "Must We Shoot from the Hip?" which he wrote at RAND in late 1951. The aim, he said, should be to continue to exert pressure—and by that he meant political and psychological pressure—until the war reached a conclusion. But existing policy would make this impossible: "Under present conceptions, it is not too much to say that we shoot our bolt and then wait for something to happen, being then quite unable to affect what will happen."[9]

[6] Bernard Brodie, "New Techniques of War and National Policies" in William Ogburn, *Technology and International Relations* (Chicago: University of Chicago Press, 1949), 167.

[7] Brodie, "Changing Capabilities," 3–4, 21–22. On Clausewitz, see Brodie's 1946 Harris Foundation lecture, "The Security Problem in the Light of Atomic Energy" in Quincy Wright, ed., *A Foreign Policy for the United States* (Chicago: University of Chicago Press, 1947), 89.

[8] Author's interview with Andrew Marshall, 19 March 1987.

[9] Bernard Brodie, "Must We Shoot from the Hip?" RAND working paper, 4 September 1951, 14, 16.

This was, however, more an argument that the level of violence should be *controlled* than that it should be *limited*. Brodie was not arguing at this point that urban-industrial targets should not be attacked except in retaliation for a similar attack on our own cities. He was simply arguing against what came to be called a spasm attack: the atomic offensive had to be conducted in a more deliberate way in order to serve basic political goals.

What exactly was new here? Limited war thinking, of course, had certain precursors in the late 1940s. There were various proposals aired at the time for outlawing the use of nuclear weapons, or at least for ruling out attacks on cities. But whatever appeal these simple limited war arguments had, the problem was that strategic bombing had emerged during the immediate postwar period as the dominant form of great-power warfare. Given the technology of the late 1940s and the resources that could be mobilized at the time, an air-atomic war was actually fightable: the devastation would be terrible, but the war could in theory be won and societies could survive even an unrestrained conflict of this sort. With the tremendous increase in the destructiveness of nuclear weaponry, however, the strategy of massive air bombardment of urban-industrial areas became, or was certainly well on the way to becoming, a victim of its own technical success. What was new, in other words, was the sense that in the very near future the level of devastation would be so incredibly great that unrestrained warfare no longer made any sense at all; there had to be some limit on the level of violence.

For Brodie in particular, the thermonuclear revolution marked an important watershed. In the early atomic age he had not argued that we should hold back from using nuclear weapons—in general, or simply against an enemy's cities—provided the enemy respected a similar set of restraints. Nor had he argued for major limited warfighting capabilities. In his writings at the time, military efficiency was the main concern. The assumption was that if war came, one would use whatever one had. In 1948 he in fact made exactly the kind of argument that just a few years later he was to view as the height of unwisdom.

> We cannot forever go on planning for two drastically different kinds of large-scale war. Considerations of economy and of getting the most possible fighting strength out of our military resources will dictate that we make up our minds at an early date whether or not we will use the bombs in war and adjust accordingly. There is not much doubt about what that decision will be, especially since the general expectation is that—failing the setting-up of an effective international control system—our major rival will begin to make atomic bombs within the next ten to twenty years.[10]

It was only the imminent arrival of thermonuclear weapons that forced him to consider whether there should be any limitation on the level of violence: it was the revolution in the means of warfare that brought about his break with the past. Objectives had to be limited, he said, because the means of warfare had to be limited, "and not the other way around."[11]

[10] Brodie, "New Techniques," 163.

[11] Brodie, "The Meaning of Limited War," RAND Paper P-1222, 10 June 1958, 7–8.

But these two arguments—for war limitation and for using the nuclear threat to support basic political goals—almost at once began to pull in opposite directions. Strategy, Brodie wrote in early 1952, should be concerned with "determining what *not* to hit as well as what to hit"; the central goal now was to figure out what could "be achieved by war, and in what way, other than by unloosing destruction on an unlimited basis."[12] But was the aim to determine what not to attack *initially*, so that the threat of further destruction could be exploited for political purposes—that is, used to bring about an acceptable end to the war? One would in that case have to be ready to escalate the war eventually—to use nuclear forces against an enemy's homeland, and even against cities, even if one refrained from attacking American cities first. Or was the fundamental goal to decide what not to attack *ever*, or at least as long as the enemy abided by a similar set of restraints? In both cases, the massive, concentrated attack was rejected as a strategy. But the fact that both approaches were linked to a critique of the strategy of the single, massive, all-out strike simply obscured the fact that these two lines of argument represented two very different and ultimately contradictory approaches to the nuclear question.

This central tension was already apparent in Brodie's April 1952 talk to the Air War College. Nuclear forces, he argued, provided they could survive an enemy attack, would in general be a "very good deterrent." But what if deterrence broke down and we got involved in a full scale war?

> I've been toying with an idea about that. If I had heard it from anyone else I should have called it a crackpot idea, but I offer it to you for what it may be worth. The atomic bomb thus far has achieved really great successes; it helped end the Pacific War, and it has so far deterred the Soviet Union from aggression. At least, there is nothing else visible to us, that is, nothing physical, that has deterred the Soviet Union from aggression. Notice that the deterrent value has resulted from the threat value. I submit that even the ending of the Pacific War resulted not from the two cities we destroyed, but rather from the threat value of the nonexistent additional bombs which the Japanese didn't know we didn't have—from the threat of more to come. According to our present concepts, this threat value of the atomic bomb is the first thing we plan to throw away the moment that hostilities open. A bomb which has been used no longer has threat value. A city which has been destroyed is no longer worth entering into surrender negotiations for the sake of preserving it. I submit that if we decide through intensive study of the situation that our nuclear weapons would actually enable us to break and burn the Soviet armies on the ground wherever they might commit aggression, we might decide that it was possible to secure our objectives without bombing enemy cities. And provided we communicated that idea in advance and provided we retained a powerful and invulnerable SAC to lay down the ground rules and make sure that they were observed, we could say, "We will not bomb your cities except in retaliation." This, of course, would be sacrificing the prospect of total victory, but for the future that might be a small price to pay for the sake of avoiding total war.[13]

[12] Brodie, Naval War College lecture, 17 March 1952, Brodie Papers, Box 10.
[13] Brodie, "Changing Capabilities," 28–29.

But note how two very different arguments are brought together here: the argument about exploiting the threat value of nuclear weapons—the threat of destroying cities if the enemy does not accommodate us—which had been taking shape in Brodie's mind during the previous few years, and the new argument about limited war—about not bombing enemy cities except in retaliation for an attack on American cities, which was essentially a product of the thermonuclear revolution.

The tension between the two lines of argument was fundamental. It was as though two poles had emerged that were to give the strategic debate its basic structure. Do we want to exploit the risk of escalation, even for essentially defensive purposes, or should our central goal be to minimize it? Should nuclear forces simply cancel each other out, or do they have a broader political function to play? War between the United States and the Soviet Union was not impossible; and if it did break out, there was no guarantee that nuclear weapons would not be used. It was thus important to think about how they might be used, about what might happen "if deterrence failed." But the way we planned to use them might have a major influence on the kind of political effect they had, even before war broke out—if only because of the effect these plans had on the kinds of forces that were created. The question of deterrence could not be divorced from the question of use. The problem of target selection was, therefore, of fundamental importance.

These problems were all very new, but already in 1952 one thing was clear: the targeting philosophy that had developed before and during World War II was becoming increasingly problematic. Indeed, the basic point about the absurdity of all-out war when each side had developed the means of utterly devastating the other must have been tremendously disorienting for professional military officers. It was clear, to the more discerning officers at any rate, that there were very basic and difficult problems here and that no one as yet had any really satisfactory answers. General John A. Samford, for example, the air force director of intelligence, wrote in 1952 that existing ideas on air power were inadequate and rested on "too narrow a base"; he therefore asked the president of RAND to allow Brodie, whose work he liked and with whom he had been in contact, to "produce a basic treatise on air power in war." Since RAND was under contract to the air force, this was in effect the authorization that enabled Brodie to do the work that culminated in his important 1959 book, *Strategy in the Missile Age*.[14]

Brodie and the other civilian strategists were not awed by the expertise of professional military officers. There was a sense that nuclear weapons had wiped the slate clean, that the field was wide open, and that no specific form of credentialing was needed for one's ideas to be taken seriously. If anything, there was a certain bias against the military, which was condemned for its excessive offense-mindedness and its consequent neglect of the importance of defense, especially the defense of nuclear forces. The armed forces were viewed as too conservative, incapable of adjusting swiftly to technological change; and the services were blamed also

[14] Samford to Collbohm, 18 April 1952, and Brodie to Samford, 20 August 1959, Brodie Papers, Box 2.

for not taking strategy seriously enough, for viewing it, when they thought about it at all, as essentially tactics writ large, more technical than political in nature.[15]

There was one other profession whose function in the area of strategy was dramatically affected by the coming of thermonuclear weapons. Beginning with World War II, the economists had played a central role in strategic bombing. In a bombing campaign, target selection was crucial. But the problem of maximizing the impact of the attack on the enemy's war-making potential was in essence an economic problem—and thus the kind of problem that professional economists were best equipped to deal with. It was in this way that a number of economists, people like Carl Kaysen and Charles Hitch, first became involved with air strategy. The insights and body of lore accumulated during the war were still applicable in the early atomic age. But after 1952, all of this was obsolete: the problem was no longer how to maximize the amount of devastation that bombers could inflict. It was "all too easy" to destroy an enemy's cities. But by the same token it would not be difficult for the enemy to destroy America's cities as well.[16]

In this kind of world the economists still had a role to play, a very basic role in fact. It was not their skill in handling quantitative data that proved to be crucial. As Hitch himself pointed out, their basic contribution "turned out to be the far more critical one of helping to formulate the problems themselves—as economic problems—and to design analyses to solve them." His main example had to do with what he called "widespread" but (to the economists) "incredible" misconceptions about the "nature of costs." People often assumed that costs should not matter: "military requirements" alone should determine the size of the effort. On the other hand, it was also frequently taken for granted that costs were "simply a constraint." But both approaches really missed the point: requirements were not absolute; they depended on costs; and in "choosing among alternatives," costs were therefore "as essential as objectives."[17]

To an economist, or to someone who has had some training in economics, all of this is quite obvious. But since it was far from obvious to many other people, the economists enjoyed a certain comparative advantage. They had a way of getting a handle on an important class of strategic problems—those that were more than just technical yet not quite political in nature. This meant that they would play a central role in the whole area of military policy.

What made all this particularly important was a certain shift in perspective that took place in the 1950s. In the immediate postwar period, and even in the early 1950s, there was a very widespread sense that a nuclearized world was inherently unstable—that a policy of drift and an unconstrained nuclear arms race would almost inevitably lead to disaster. This led to a certain willingness, even among

[15] These were common themes in Brodie's writings. He was particularly blunt in unpublished memoranda and correspondence; see especially Brodie to Hans Speier, 23 November 1954, Brodie Papers, Box 4, file "Washington Office," where he sets out his views about the military.

[16] On the role of the economists, see for example Brodie, "The American Scientific Strategists," RAND Paper P-2979, October 1964, 20–22.

[17] Charles S. Hitch, "The Uses of Economics," RAND Paper P-2179-RC, 17 November 1960, 3, 21.

some of the RAND strategists during this period, to consider such extreme solutions as preventive war.[18] With the passage of time, these basic anxieties began to fade. It was gradually becoming evident that the world could live with nuclear weapons. There were terrible dangers of course, but there were advantages as well. Especially when one considered the alternatives, the situation on balance was by no means intolerable. Very serious problems remained, but the sense began to take hold that the United States and the Soviet Union were settling into a long-term rivalry. As a result U.S.–Soviet relations came to be perceived increasingly in interactive terms: if we did something, they would have time to respond, and the nature (and relative cost) of their response should, therefore, rationally be factored into our original calculations. Thus the game-like aspects of military policy became increasingly salient; and this way of thinking was clearly linked both to the presence of formal game theory as part of the intellectual culture at RAND and to the great interest people at RAND took in many forms of gaming.

Finally, there was a special shift in the political environment during this decade that had a great effect on both strategic thought and military policy. At the beginning of the 1950s, the Korean War was on everyone's mind, and the Eisenhower administration's emphasis on nuclear weapons probably had a good deal to do with the lessons it drew from the Korean conflict. But by the end of the decade, the Berlin Crisis was at the center of international politics, and the problem of the defense of Berlin was a matter of great concern. In this case, for all the obvious reasons—the local indefensibility of the city and the great importance of Europe in comparison with most other regions of the world—normal, military, warfighting considerations simply did not apply. The effect was thus to highlight the war-of-nerves aspect of international conflict.

Putting all these things together, what the argument boils down to is this: there was an intellectual vacuum in the whole national security area. The economists and people heavily influenced by their style of thinking were for a variety of reasons drawn into this vacuum. What they had was something very general, a way of approaching issues, rather than anything that in itself suggested substantive answers that went right to the heart of the strategic problem. But this meant that a constituency existed—in their own terms, a market existed—for ideas from economics that would have some substantive bearing on the very new problems of strategy that were to emerge in the 1950s.

The Manipulation of Risk

It was a question of intellectual ecology: a niche had taken shape, and then Thomas Schelling came along. The ideas in question were the notions about bargaining that had developed mainly out of the theory of imperfect competition. Schelling's "Essay on Bargaining," which appeared in the *American Economic Review* in June

[18] See esp. John Williams, "In Response to Paxson's Memo on the Probability of War," 3 February 1953, and his "Regarding the Preventive War Doctrine," 27 July 1953, unpublished RAND working papers.

1956, was in large measure based on the theory of oligopoly, as represented most notably by William Fellner's *Competition Among the Few.* This way of thinking was to mesh perfectly with the notions about war limitation and the "threat value" of nuclear weapons that Brodie, as he put it, had been "toying with" since the early 1950s.

Once again, the thermonuclear revolution plays an important role in the story. A war with hydrogen weapons would be short, much shorter than the kinds of wars that were possible even in the early atomic age. Industrial mobilization could therefore not have anything like the importance it previously had. In World War II, Brodie pointed out, strategic bombing was militarily meaningful only because a ground war was going on at the same time; the bombing served to deprive the Germans of commodities "which the ground battles were using up." In a future world war, "there wasn't going to be a ground battle." What was the point, therefore, of attacking the enemy's industrial base?[19]

In other words, if there was no urgent military need to destroy industrial targets, the destruction of cities no longer made sense in traditional military terms. If mobilization essentially does not matter, what was the point of still trying to destroy the enemy's industrial base? For those few individuals who really grasped the fundamental point—it certainly was never reflected in the war plans—what this implied was that the real function of countercity targeting was punitive and coercive, and not military in the traditional sense. It therefore had to be analyzed explicitly in those terms. For Schelling in particular, the threat of inflicting pain lay at the heart of nuclear strategy. The point was repellent, but it was important to face the fact that this was what the targeting of cities was all about. The whole issue of threat manipulation—of the efficient exploitation of nuclear risk—therefore came to be treated in a much more overt and straightforward way. Schelling quite explicitly set out to analyze how the "power to hurt" could be exploited for political purposes.

Brodie had assumed at the beginning of the 1950s that an enemy might be coerced by the threat of a *deliberate* escalation of the war. But a deliberate escalation was something that Schelling, who came on the scene toward the end of the decade, found hard to imagine. His problem, he wrote, was to explain how it could be "when almost nothing that ever arises is really worth a general war," that "strategic forces [could] have any influence on decisions." The answer he came up with was "the threat that leaves something to chance": one needed some mechanism, "involving uncertainty aud unpredictability, of a potential progessive loss of control over the situation by both sides—in order to make any connection between the strategic background and the local foreground."[20] It might be absurd for anyone "coolly and deliberately" to order an all-out attack "in response to some enemy transgression"; but one could plausibly threaten actions that might set off a semi-uncontrollable chain of events that just might culminate in a thermonuclear holo-

[19] Brodie, "Changing Capabilities," 12–13.

[20] Schelling to Brodie, 22 February 1965, Brodie Papers, Box 2, file "Schelling."

caust. The threat value of nuclear weapons could thus be exploited even in a situation where, because of the prospect of retaliation, a deliberate attack on an enemy might be totally irrational.

The assumption was that the degree of risk could be manipulated, and Schelling in fact at one point spoke of the "controlled loss of control."[21] But these methods could be used by both sides in a conflict. International politics, in time of crisis or especially after the outbreak of hostilities, would then be a "competition in risk taking, characterized not so much by tests of force as by tests of nerve."[22] This, of course, was not a world of certainty, of predictability, and of near-perfect rationality, where the level of violence could be easily controlled, although deterrence theory is often caricatured in this way.[23] It was rather the existence of uncertainty that created risk; and risk, for Schelling especially, was what made it possible for nuclear forces to play a political role.

This whole approach to strategy was in fact very new and differed dramatically from more conventional ways of dealing with military problems. To those in the armed forces especially, it had been natural to assume that what happened on the battlefield was of prime importance, that military action should be "decisive," that control and initiative are desirable in themselves. But now it seemed that everything was being turned on its head. The manipulation of risk was much more important, Schelling insisted, than securing tactical advantage on the battlefield; military action was seen in terms of a bargaining process and would therefore have to be limited, rather than decisive, in nature. Most perplexing of all, there was the argument that perhaps too much control might not be a good idea; there were advantages in making sure that one's choices were limited and that the enemy was the one who had to make the really difficult decisions.

For Schelling, the concept of risk was central. His whole argument was built on the insight that a general war need not result from a deliberate and cold-blooded decision. Events, that is, might have a momentum of their own, quite apart from the conscious intent of political leaders. This line of reasoning, therefore, led to an intense interest in the logic of escalation. Why exactly was there, in certain circumstances, a serious risk that matters might get out of hand?

The Logic of Preemption

It was at this point that the intellectual tradition represented by Brodie aud Schelling merged with a rather distinct line of thought, also associated with RAND; the

[21] Thomas C. Schelling, "The Role of Theory in the Study of Conflict," RAND Research Memorandum RM-2515-PR, 13 January 1960, 28.

[22] Schelling, *Arms and Influence* (New Haven: Yale Univesity Press, 1966), 94.

[23] This is a common criticism leveled against this group of strategists. But it is hard to imagine how Schelling, at least, could have been more explicit about these matters. See esp. *Arms and Influence*, 92–93. Brodie and Wohlstetter in their writings also took it for granted that a war could easily get out of control. See, for example, Brodie, *Strategy in the Missile Age*, 355; and Albert Wohlstetter, "Nuclear Sharing: NATO and the N + 1 Country," *Foreign Affairs* 39 (April 1961): 378–379.

most prominent figure here was Albert Wohlstetter. In the early 1950s, Wohlstetter had been asked to work on the problem of base selection, and this led him and his associates into a detailed, quantitative analysis of what might happen in an air war.[24] The Wohlstetter approach by its very nature assumed that numbers mattered; the atomic bomb was not an "absolute weapon." If its effects were measurable, they were finite and thus limited; it therefore made an important difference how such a war was fought, and especially how well America's nuclear forces would be able to survive a surprise enemy attack.

Again, what exactly was new here? The general point about the importance of defending America's strategic forces had been made before. Brodie, in particlar, had argued repeatedly in 1946 (in *The Absolute Weapon*) that it was crucial to make sure that the United States would be able to retaliate in kind—that it was necessary "to explore all conceivable situations where the aggressor's fear of retaliation will be at a minimum and to seek to eliminate them."[25] It was clear also that Brodie was thinking in terms of what would be left after a surprise attack: "our most urgent military problem is to reorganize ourselves to survive a vastly more destructive 'Pearl Harbor' than occurred in 1941."[26] He even speculated on how the ability to strike back could be guaranteed: the nuclear retaliatory force, he said, should be "spread over a large number of widely dispersed reservations, each of considerable area, in which the bombs and their carriers are secreted and as far as possible protected by storage underground."[27]

Thus Brodie in 1946 clearly understood that nuclear weapons might be used against an enemy's strategic forces; indeed, another passage even touched on the idea of tactical use on the battlefield.[28] But Brodie was terribly inconsistent in this book; at other points he simply took it for granted that the bomb would only be used against cities, that it was "inevitably a weapon of indiscriminate destruction."[29] One has the sense that at this point he had really not yet come to grips with these issues.

Wohlstetter's approach was very different. The most important thing about it was its empirical depth and sensitivity to operational detail. Wohlstetter went to the Strategic Air Command (SAC) bases to get as much information as he could on force readiness, on warning time, on all those things that would bear on the ability of the strategic forces to survive a surprise attack and conduct a retaliatory strike. What was distinctive about his analysis was that instead of assuming that enemy attacks would be massive (and that a degree of warning would thus prob-

[24] On Wohlstetter's work, see, for example, Bruce Smith, "Strategic Expertise and National Security Policy: A Case Study," *Public Policy* 13 (1964); and E.S. Quade, "The Selection and Use of Strategic Air Bases: A Case History" in Quade, *Analysis for Military Decisions* (Chicago: Rand McNally, 1964).

[25] Bernard Brodie et al., *The Absolute Weapon* (New York: Harcourt, Brace, 1946), 77.

[26] Ibid., 87–88.

[27] Ibid., 91.

[28] Ibid., 83.

[29] Ibid., 46–47.

ably be available), Wohlstetter paid a good deal of attention to attacks that were small in scale, unconventional in nature, and focused on a discrete range of targets—especially on air bases. The assumption, in other words, was that the enemy was intelligent and would (if he attacked at all) try to exploit those areas where America's defenses were weak. It was extraordinary for a civilian to proceed in this way. It gave Wohlstetter's work a cogency aud a power that those who argued along more casual lines were just not able to achieve.

Brodie, for example, was by this time thinking along parallel lines. He argued strongly for "reducing the almost comic opera vulnerability of our military structure." It was absurd, he said, for SAC aircraft to be concentrated on only about sixteen air fields in the continental United States. He could not understand why America's nuclear weapons "should be stored in only three or four sites, the locations of these being very well known to the enemy and each individually being very slightly guarded." He had recently heard, in fact, with regard to one of these sites, that an airline "which flew over that area used to point out the storage site to the passengers as one of the sights along the way."[30]

The problem was that casual argument of this sort simply did not cut very deep. Wohlstetter was able to show in much greater detail just how vulnerable America's strategic forces were. But for present purposes, the more important point is that thinking these issues through at that level of detail led to certain general conclusions about strategy—conclusions that were to be enormously influential.

Then as now there were those who argued that it hardly mattered if the enemy was able to destroy the great bulk of the American retaliatory force in a surprise attack. What difference would it make if even 85 percent of SAC was wiped out? The remaining 15 percent, for the period Wohlstetter considered, "could still have destroyed roughly 600 targets," and this was more than enough for deterrence.[31]

But one of the basic conclusions Wohlstetter reached was that this kind of approach was fundamentally flawed. Indeed, as soon as one began to think in operational terms, one could see what the problems were. It was one thing to say that 15 percent of the bombers would survive an enemy's first strike, and quite another to say that they would all be able to destroy their targets. There was the problem of getting through fully-alerted defenses, and the related problem of coordinating the retaliatory strike when command and control facilities were in a state of complete disarray. How would a commander know which targets to hit, when and how to attack, or even whether to strike at all? It was obviously impossible to know in advance which aircraft would survive, so contingency planning would always be inadequate. The simple "minimum deterrence" approach ignored problems of this sort, but when one began to think about them at the operational level, the overall issue took on a very different cast.

To Wohlstetter, the fundamental point to emerge from the empirical analysis

[30] Brodie, "Changing Capabilities," 27.

[31] The quotations are from Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983), 108–109, but arguments of this sort were very common in the 1950s as well.

was that the mere possession of significant numbers of thermonuclear weapons by both sides did not in itself create a stable balance of terror. The weaponry did not necessarily create a "stalemate" which would make general nuclear war "impossible." Mutual deterrence was not automatic; the nuclear balance was therefore "delicate," and it would take a serious and continuing effort to sustain it. These fundamental conclusions grew out of the operationally-oriented work Wohlstetter did in the 1950s and came to be shared very widely at RAND. At the end of the decade Wohlstetter laid out these basic ideas in "The Delicate Balance of Terror," probably the single most important article in the history of American strategic thought.[32]

What made the argument about vulnerability so powerful was the related assumption that vulnerability might in itself be a primary cause—perhaps *the* primary cause—of war. This assumption was rooted in several distinct lines of argument. There was first the idea that their Bolshevik ideology would compel the Soviets to strike if American forces were vulnerable. "If the Soviet leaders," Brodie asked, "should ever decide that by a surprise attack they could confidently count on destroying our strategic retaliatory force, whose very purpose it is constantly to theaten their existence, would it not be their duty as good Bolsheviks to launch that attack?"[33] Brodie made this point frequently in the 1950s; this argument was based explicitly on the work of his friend Nathan Leites, one of the leading Kremlinologists at RAND.[34] This was, incidentally, one of the very few cases where the work of the Soviet specialists had a direct impact on mainsteam strategic thought.

The point about the danger of a Soviet strike was undoubtedly related to the fact that in the late 1940s and early 1950s preventive war thinking was surprisingly common on the American side. Brodie, for example, frequently came into contact with it at RAND and during his visits to the Air War College, where it was, as he put it, for several years the "prevailing philosophy."[35] Nor was the idea limited to RAND and military circles. The famous physicist Leo Szilard evidently had made a preventive war argument at the very beginning of the atomic age: it was "from the lips of Leo Szilard," Brodie wrote, that he had "heard, in October of 1945, the first outright advocacy in my experience of preventive war."[36] The fact that this kind of thinking was not limited to the lunatic fringe had important implications. Chief among them was the idea that if serious Americans supported

[32] Albert Wohlstetter, "The Delicate Balance of Terror," *Foreign Affairs* 37 (January 1959); an earlier and more complete version dated December 1958 is available as RAND Paper P-1472.

[33] Brodie, *Strategy in the Missile Age*, 355.

[34] Ibid., 355n. See also Brodie, "More About Limited War," *World Politics* 10 (October 1957): 121; and Brodie, Hitch, and Marshall, "The Next Ten Years," unpublished RAND working paper, 30 December 1954, 17.

[35] Brodie, "A Commentary on the Preventive-War Doctrine," unpublished RAND paper, 11 June 1953, 1.

[36] Brodie to Schelling, 8 January 1965, enclosure, Brodie Papers, Box 2.

the strategy, then the Soviets, if they were in a position to pull it off, might also find a preventive war policy very attractive.[37]

In the development of American strategic thought, however, there was a far more important argument that had nothing to do with ideology or preventive war, but focused instead on the "logic of preemption." Here once again Wohlstetter played a central role. The vulnerability of strategic forces had been a great source of concern to him even before the thermonuclear revolution. But with the coming of the hydrogen bomb, it was clear that counterforce would play an increasingly important role. On the one hand, since there was no really effective defense against an unrestrained thermonuclear attack once it was launched, the only way to survive an all-out war was to destroy the enemy's forces before they left the ground. On the other hand, because these new weapons were so powerful, and because industry was concentrated in a relatively limited number of cities, only a fairly small number of hydrogen weapons had to be allocated to urban-industrial targets. The rest of the expanding stockpile would be targeted on the enemy's military forces. It was simply a question of numbers: in the natural course of things, military targets, and especially counterforce targets, would, as Wohlstetter and Fred Hoffman predicted in early 1954, come to dominate the plan for general war.[38] And if this was true for the United States, it would, within a relatively short period of time, be true for the Soviet Union as well.

The effect of this line of argument was thus simply to underscore the fundamental importance of protecting strategic forces, and throughout the 1950s Wohlstetter conducted what amounted to a campaign on the vulnerability issue. In the process he developed many arguments, but one in particular was quite distinctive. This was the point that American vulnerability was not only dangerous to us, but was dangerous to its adversaries as well, since it might lead the United States to preempt—that is, to strike first in a crisis. If strategic forces became vulnerable to an intercontinental ballistic missile (ICBM) attack, he and Hoffman argued in early 1954

> then our advertised capability for retaliation will be fictitious. We could not expect to hurt the Russians very much, unless we could be sure to strike the first blows. This should make us rather trigger happy, particularly if we were to couple this fragile strategic capability with an announced policy of relying mainly on a threat of major strategic atomic attack to deter even minor war. It would appear also to make the Russians equally trigger happy. Because in this case striking the first blow is the only means of defense, any delay in striking the first blow by either side risks the chance that the enemy will be the one to have this prerogative. With a defense of SAC against the I[C]BM and any other likely

[37] As Brodie put the point, one reason for considering the preventive war issue was that the discussion might "help sensitize us to the factors that could cause it to become Soviet policy." *Strategy in the Missile Age*, 228–229.

[38] Albert Wohlstetter and Fred Hoffman, "Defending a Strategic Force after 1960," unpublished RAND working paper, 1 February 1954, 18.

> menace, on the other hand, we can assure ourselves and Russia that whether we strike first or second we can lay waste a large proportion of the Russian economy and the Russian population. This will make a decision to strike the first blow extremely unpleasant for the decision-maker as well as for the recipient of the blow.[39]

It followed (although Wohlstetter did not make this argument at the time) that by the same token their vulnerability would be dangerous for the United States. But he did, in "The Delicate Balance of Terror," consider the extreme but symmetrical case where

> both the United States and the Soviet Union had the power to destroy each other's retaliatory forces and society, given the opportunity to administer the opening blow. The situation would then be something like the old-fashioned Western gun duel. It would be extraordinarily risky for one side *not* to attempt to destroy the other, or to delay doing so, since it not only can emerge unscathed by striking first but this is the sole way it can reasonably hope to emerge at all. Evidently such a situation is extremely unstable. On the other hand, if it is clear that the aggressor too will suffer catastrophic damage in the event of his aggression, he then has strong reason not to attack, even though he can administer great damage. A protected retaliatory capability has a stabilizing influence not only in deterring rational attack, but also in offering every inducement to both powers to reduce the chance of accidental war.[40]

A draft of the "Delicate Balance" was circulated among the American experts preparing for the 1958 Geneva Surprise Attack Conference, and that was how Schelling first heard of the idea.[41] He in fact became fascinated by the logic of preemption—that is, with the problem of "accidental war" resulting from the "reciprocal fear of surprise attack." This was how war could come without a "cool and deliberate" decision to launch an attack "in response to some enemy transgression." This was what generated the nuclear risk, whose "manipulation" was for Schelling what strategy was all about.[42]

"The premium on haste," Schelling wrote, was "the greatest source of danger" that peace would "explode into all-out war." "The whole idea of accidental or inadvertent war" rested on the "crucial premise" that there was a great advantage to striking quickly: "It is hard to imagine how anybody would be precipitated into full-scale war by accident, false alarm, mischief, or momentary panic, if it were not for such urgency to get in quick."[43] The process of escalation might be very complex; but what does seem clear is that for Schelling the fear of losing the enormous advantages of getting in the first blow would lie at the heart of the es-

[39] Ibid., 3.

[40] Wohlstetter, "Delicate Balance of Terror," 230. Note also Schelling's use of the Old West metaphor in "Surprise Attack and Disarmament," *Bulletin of the Atomic Scientists*, December 1959, 414; and Brodie's use of it even earlier in "Unlimited Weapons and Limited War," *The Reporter*, 18 November 1954, 18.

[41] Author's interview with Thomas Schelling, Cambridge, Mass., 3 October 1983.

[42] Schelling, *Arms and Influence*, chap. 3, esp. 97.

[43] Ibid., 227.

calatory process, especially if one knew one's adversary were subject to the same pressures, and that he knew that you were tempted to preempt for these reasons. This logic could be sufficient in itself: there was no need for a " 'fundamental' basis"—that is, a real political cause—for the war.[44] A situation of this sort was thus more unstable, in the sense that things could more easily get out of hand, than a situation where retaliatory forces were secure and where there was thus no incentive to preempt. The "delicacy" of the balance was therefore the source of instability; a war might come essentially because strategic forces were vulnerable to enemy attack.

The result was that a theory of war causation took hold in which military factors loomed very large. The assumption was, as William Kaufmann, another member of the RAND group, put it in 1958, that deterrence "has become essentially unstable," that "increasingly military conditions are becoming such that catastrophe can descend on us as a bolt from the blue."[45] It was clear, therefore, that American forces had to be made more secure.

But beyond that—and here is where the argument really began to break new ground—it seemed to follow that Soviet forces should perhaps not even be targeted, and maybe American cities should not be defended, even if a defense of populations some day became feasible. For if the vulnerability of our forces made us more trigger-happy and was thus a danger to them, then by the same logic their vulnerability was a danger to us. We should, therefore, not threaten their strategic forces, either directly by targeting them, or indirectly by defending our cities and thus effectively neutralizing them. Such was the essence of the doctrine of "strategic stability," or "mutual assured destruction," as it has bizarrely come to be called, that emerged with great force and suddenness at the end of the 1950s. Wohlstetter himself never really accepted it, but others embraced the doctrine enthusiastically. In particular it came to provide the conceptual basis for American thinking on arms control: by mutual agreement, one might be able to achieve a world where each side's strategic forces were secure. Schelling, using his idea as a point of departure, co-wrote a seminal work on arms control in 1961; the two other important books on the subject that appeared that year were also, to one extent or another, inspired by the same idea.[46]

The stability doctrine thus developed in a fairly natural way out of the body of thought that had been concerned primarily with strategic vulnerability. It did not emerge as the by-product of shifting political views; a "stable" strategic relationship was not sought originally as the military counterpart to political détente.

[44] Schelling, "The Reciprocal Fear of Surprise Attack," *The Strategy of Conflict* (Cambridge, Mass.: Harvard University Press, 1960), 207.

[45] William Kaufmann, "The Evolution of Deterrence," unpublished RAND working paper, 2 October 1958, 28, 26.

[46] Thomas Schelling and Morton Halperin, *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961); Hedley Bull, *The Control of the Arms Race* (New York: Praeger, 1961); and Donald Brennan, ed., *Arms Control, Disarmament and National Security* (New York: George Braziller, 1961).

In fact, one of the most striking features of this body of thought is the apolitical and often abstract nature of its approach to strategy. Military problems were only remotely connected to the world of international politics. If a crisis came up, or a war broke out, decisions about military policy would of course be relevant. But it was as though they had little bearing on the normal dynamics of international political life. They certainly were not analyzed in those terms. It might be admitted in theory that war is the outcome of a political conflict that unfolds over a long period of time; but it was not taken for granted that the primary purpose of military policy was to influence the course of that conflict. To gain this kind of leverage, military policy would have to be made to depend, at least in some important way, on the political behavior of one's adversary. But in this body of thought, basic problems were defined in general and hypothetical terms; and the relevant data were technical and essentially military in nature. Political considerations, beyond those captured by the basic notion of deterrence, were thus simply factored out of the analysis.

Nuclear Warfighting

There was, of course, more to strategy than assuring the survival of strategic forces. Once the forces were able to ride out an attack, one would still have to face the question of how they should be used. If forces were survivable, there would be less pressure to launch an all-out attack at once; they could, in theory at least, be used in a more controlled way.[47] Moreover, if a general war was going to be preeminently a counterforce war, it made sense, especially for people working for an organization like RAND, to be concerned with how this strategy could be rationalized—that is, with what the most rational way to fight a counterforce war was. In any case, the nuclear threat lay at the heart of American foreign policy: if Europe was to be defended, it was important that nuclear forces do more than simply cancel each other out. Given assumptions about a more or less permanent Soviet conventional superiority, it was vital that they cast a broader political shadow, and this was possible only because there was a risk that in some situations they might be used. Indeed, the kind of political effect might depend on the sort of employment strategy that was adopted, and in particular on how rational and, therefore, how credible it was. Operational strategy might also have an important impact on how a war actually ran its course—on what would happen if deterrence failed.

The basic idea to emerge out of this kind of thinking was the notion that if nuclear weapons had to be used, they should be used in a controlled way; the attack should never be indiscriminate or spasmodic. It was not that the people at RAND in the 1950s or early 1960s were under any illusions about how easy it would

[47] See, for example, Albert Wohlstetter, "Analysis and Design of Conflict System," in Quade, *Analysis*, 127; and Thomas Schelling, "Les armements nucléaires, l'OTAN et la 'nouvelle stratégie,'" *Politique Etrangère* 28 (Summer 1963): 136.

be to effect this sort of control.[48] It was simply that the alternative of just throwing up one's hands and settling for a single, massive, all-out attack as the country's only general warfighting option was patently unacceptable. By the end of the 1950s, this sort of thinking had begun to revolve around the idea of city-avoiding counterforce warfare.

Ideas of this sort were of course closely related to Brodie's earlier notions about threat value and preserving cities as hostages, and later with Schelling's ideas about the manipulation of risk. This line of thought had a noticeable effect, even though neither Brodie nor Schelling was ever particularly keen about the idea of counterforce.[49] For most of the 1950s, however, they were simply ideas—part of the intellectual culture at RAND, arguments that deserved to be taken into account, but which by no means automatically added up to an argument for a no-cities counterforce strategy. Things were still in a state of flux; ideas had not hardened into strategic dogmas. The risk manipulation approach could co-exist and freely interact with the more straightforward counterforce/nuclear warfighting strategy. The difference between the two was more one of emphasis than anything else: how important in a war were such things as resolve and signaling as opposed to the shifting balance of military forces? Later, the lines would become more tightly drawn. The different approaches would come to be seen as alternative strategies; but in 1960 all of this was still very much in the future.

One of the most striking things about this period, in fact, is a real intellectual openness, an absence of doctrinal rigidity. It is important to note, for example, that there had been no headlong rush to counterforce at RAND in the 1950s. Reading the RAND documents from the first half of the decade, what comes across is a certain skepticism about counterforce. The Wohlstetter basing study, for example, was primarily concerned with the ability of SAC to carry out an attack on urban-industrial targets; the "counterair" or "blunting" mission was discussed only briefly and pessimistically at the end of the report. (The skepticism was in large part rooted in the assumption that American target intelligence was not only inadequate for counterforce purposes, but was probably even getting worse.) One might have thought that a concern with American vulnerability would have been linked to an interest in exploiting Soviet vulnerability, but Wohlstetter deliberately chose not to develop the argument in that direction. The protection of the retaliatory force was so basic that all other considerations paled in comparison; Wohlstetter did not want to distract attention from the great need to assure an American "second strike capability."[50]

[48] See, for example, William Kaufmann's discussion of the problem of escalation in Charles Hitch et al., "The Crisis in National Security," unpublished RAND working paper, 18 April 1958, 18. This collection of talks comes as close to summing up the mainstream RAND position on security issues as any single document I was able to see.

[49] See Brodie to S. Jones, 25 February 1955, Brodie Papers, Box 1, and Schelling to Brodie, 22 February 1965, Brodie Papers, Box 2.

[50] See esp. A.J. Wohlstetter et al., "Selection and Use of Strategic Air Bases, 365–369; and Wohlstetter to the author, 23 October 1984, commenting on this passage.

The same general point is true of another important RAND document from this period, "The Next Ten Years," written at the end of 1954 by Brodie, Hitch, and Andrew Marshall. Far from being an argument for counterforce,[51] or for controlled nuclear warfighting, this document was essentially a *tour d'horizon*—a survey of a wide range of possible American strategies.[52] A counterforce strategy was discussed, and it included a no-cities component. It was recognized that the strategy had certain attractive features, but the authors seemed more interested in talking about all the problems with this policy. As in Wohlstetter's case, one of the greatest problems had to do with the supposed inadequacy of target intelligence.[53]

It is not surprising, therefore, that when new information about strategic intelligence began to filter into RAND beginning in 1955, attitudes toward counterforce—and in particular toward city-avoiding counterforce—began to shift. The key person here was Joseph Loftus, who during the Korean War had been the chief civilian target analyst for the air force. He eventually took a position with RAND, working for a while out of RAND's Washington office. It was there that he read "The Next Ten Years" and was struck by the very pessimistic attitude about target intelligence that prevailed at RAND in the early 1950s and was reflected in that document. These people, he thought, simply did not know what they were talking about. The air force had much better information about Soviet strategic targets—that is, counterforce targets—than the people at RAND seemed to realize.

Loftus reacted by writing a short paper called "Ten Minutes on the Next Ten Years," which implied that maybe the counterforce mission was not quite as hopeless as Brodie, Hitch, and Marshall had assumed. Perhaps for internal bureaucratic or political reasons the Soviets had structured their forces in such a way as to make their strategic forces more vulnerable than they otherwise might be. After all, he said (pointing to the McMahon Act), even the Americans had been reluctant to put nuclear weapons directly in the hands of the military. The same sort of thing might be going on with the Soviets, perhaps with even greater effect. Their tendency to overcentralize control might have some bearing on the vulnerability of their strategic forces.[54]

Marshall had worked on target intelligence in the past, and now he, together with Loftus, began to study these issues in much greater depth. Their collaboration was to last for nearly a decade. Perhaps the most striking thing to emerge from their work was the extraordinary vulnerability of the Soviet air force. The "irrationality" of Soviet basing, Marshall told a small group in 1960, was "fantastic." "It takes six to eight hours to load the planes," he said. "In those circum-

[51] As implied by Kaplan, *Wizards of Armageddon*, 207.

[52] Brodie, Hitch, and Andrew Marshall, "The Next Ten Years" has recently been declassified.

[53] Brodie et al., "The Next Ten Years," 13–14, 24–26, 30.

[54] Joseph Loftus, "Ten Minutes on the Next Ten years," unpublished RAND working paper, 14 February 1955.

stances, they are just sitting ducks."[55] This may not have been the only channel through which information about intelligence was affecting attitudes toward counterforce, but what does seem clear is that information of this sort played a pivotal role. Counterforce was not nearly as hopeless as had earlier been assumed. And with good intelligence, targets could be pinpointed and yields could be reduced dramatically; a strategy that aimed at minimizing collateral damage might therefore be feasible.

To digress briefly, it is interesting to note that this information on Soviet vulnerability had a significant effect in an entirely different area. It was intimately related to the rise of the bureaucratic-politics paradigm, which eventually was to have an important influence on the structure of the nuclear debate. Already in 1955—in fact, even earlier—Loftus had come to interpret the inefficiencies of the Soviet system in internal bureaucratic terms; and by 1963 he and Marshall had developed the argument in some detail. The Soviets, it appeared from their work, had been very reluctant to marry nuclear warheads to their delivery vehicles. Warheads were generally kept isolated from missiles—for medium range ballistic missiles (MRBM)s, the storage sites were fifty miles away on the average. Of the five main Soviet bomber bases, only three were defended by SA-1 batteries, and even they were not deployed for quick reaction. The Soviets, moreover, did not go in for the kind of alert measures that were common practice in the American air force, and the situation evidently did not change much even during times of crisis. With regard to their ICBM force, the kinds of missiles they built and the sorts of systems that supported them suggested that this force had not been designed for quick reaction.

How was the astonishing vulnerability of the Soviet nuclear force to be explained? The Soviet intercontinental force had evidently been starved for resources. The odd thing here was that the Soviets had spent more, by American estimates, on anti-aircraft artillery alone since 1945 than on their strategic forces—heavy bombers, missile submarines, and ICBMs. The explanation for this bizarre behavior, Loftus and Marshall argued, had to do with established patterns of resource allocation rooted in the balance of bureaucratic power within the Soviet military establishment.

The bureaucratic-politics argument became an important theme in Marshall's writings and in the work done by other people at RAND.[56] Of course, the argument that bureaucratic interest went a long way toward explaining government behavior had been made many times before, and the general point had no doubt occurred to a great many people who at one time or another had served in some

[55] Quoted in Daniel Ellsberg and Paul Kecskemeti, "Minutes of the Monterey Seminar on Active and Passive Defense," 19–21 July 1960, unpublished RAND working paper, vol. II, 20.

[56] See especially A.W. Marshall, "Bureaucratic Behavior and the Strategic Arms Competition," Southern California Arms Control and Foreign Policy Seminar, October 1971; and James Schlesinger, "Arms Interactions and Arms Control," RAND Paper P-3881, September 1968.

official capacity. But the case of Soviet military policy was so striking that it suggested in itself that the bureaucratic-politics approach could really be developed into a central explanatory model. And it does seem that Marshall played a direct role in the emergence of the paradigm. In the mid-1960s he was a major influence in the "May Group," a seminar led by the Harvard historian Ernest May; Morton Halperin and Graham Allison, who were to play leading roles in the articulation of the bureaucratic politics paradigm, also took part.[57]

All this is worth talking about only because of the effect it had. The rise of the bureaucratic-politics model had an important influence on the way the debate on military policy was structured. There was on one side the rather straightforward theory that the strategic arms competition was dominated by an "action-reaction mechanism," where each power was reacting rationally to moves made by its opponent. The bureaucratic-politics approach took issue with that interpretation. The interaction process was not nearly as smooth or as governed by rational strategic calculation as simple models of the arms race would have it. It was in this way that the parameters of the debate became established: an externalist interpretation, the action-reaction mechanism, battled an internalist explanation, the bureaucratic-politics model.[58] In a debate of this sort, an interpretation of the military competition in terms of the ebb and flow of international political conflict simply had no place.

Stability versus Counterforce

By the end of the 1950s the civilian strategists working mainly at RAND had developed two distinct sets of ideas, two radically different ways of looking at nuclear issues. On the one hand, there was the stability doctrine, at the heart of which was the idea that the vulnerability of strategic forces was destabilizing because of the premium it would place on preemption. The doctrine, however, was by no means limited to this basic idea: a whole conceptual superstructure had been built on this fundamental concept. From the point of view of the stability doctrine, the risk of nuclear war was the central danger. This risk derived essentially from the vulnerability of strategic forces – not just American, but Soviet forces as well. The basic goal, therefore, was to reduce this vulnerability; and this implied, among other things, that counterforce targeting was to be avoided, above all if it were massive enough to make a meaningful difference in the amount of damage that

[57] Note also the references to Marshall in Graham Allison, *Essence of Decision* (Boston: Little Brown, 1971), ix, x, 98, 301 n. 44, 315 n. 59; see also Morton Halperin, *Bureaucratic Politics and Foreign Policy* (Washington, D.C.: Brookings Institution, 1974), xii.

[58] See, for example, Graham Allison, "Questions about the Arms Race: Who's Racing Whom? A Bureaucratic Perspective" in Robert Pfaltzgraff, Jr., ed., *Contrasting Approaches to Strategic Arms Control* (Lexington, Mass.: Lexington Books, 1974). Marshall, it should be noted, later placed increased emphasis on other factors, especially the distinct Soviet way of looking at the world.

would be suffered in the event of an all-out war. Strategic superiority, which implied a strong counterforce capability, was therefore not to be sought—especially since negotiated arms control might be an important way of assuring stability, and negotiated agreements could be reached only on the basis of a kind of rough parity. But all this implied that it would be difficult to rely on the threat of nuclear war, overt or implicit, as the ultimate basis of policy.

On the other hand, there was the new concept of controlled and discriminate general war. The aim in such a war would be to destroy military targets and spare civilian populations, preserving them in fact for their hostage value. This would be a war of coercion and bargaining, not of pure destructiveness or mindless violence. The outcome of the war would be governed in part by the shifting strategic balance resulting from the counterforce campaign, and in part by the sheer terror that such a war would inevitably generate. With a strategy of this sort, a nuclear war would not necessarily be tantamount to national suicide; nuclear forces would, therefore, carry more political weight—perhaps a good deal more—than they otherwise might.

One obviously could not have it both ways; the two lines of argument were fundamentally inconsistent. But from the very beginning, people were drawn in both directions. On the one hand, there was a sense that a general nuclear war might well be virtually tantamount to mutual suicide, that the risk of things getting out of control was so great and the destructive power of the weapon so enormous that it did not much matter exactly how such a war would be fought. The important thing, from this point of view, was to prevent a nuclear conflict and thus to keep the lid on any wars that were fought. And this implied that it was dangerous to try to use nuclear threats to support general political goals.

On the other hand, if the possibility of armed conflict between nuclear powers could not be ruled out completely, and if there was an ultimately irreducible risk that a major conventional war could get out of hand and lead to a nuclear exchange, it was important to think through just how a nuclear war might be waged. Escalation, after all, need not be totally automatic; and how such a war might be fought could make a big difference. The strategic balance might then be politically meaningful; nuclear forces could serve purposes beyond merely deterring their use by others.

The tension was fundamental. One is struck by how pervasive and how persistent it was, and by how ambivalent people's feelings were on these issues. Take for example the first serious examination of the implications of the atomic bomb, Brodie's two chapters in *The Absolute Weapon*. The first chapter reflected the assumption that there was no meaningful defense against the bomb, that the weapon would be used mainly against cities, that because the bomb was relatively cheap to produce and deliver, any world power possessing a nuclear arsenal could destroy the cities of its enemy. Under such circumstances, numbers of bombs, or even gross disparities in delivery systems, would not matter greatly; in fact, it did not particularly matter how such a war would be fought, and so strategy as such

no longer existed.[59] But in his second chapter, he took a completely opposite line: numbers here do matter, defense can make a difference, superiority is still a meaningful concept, and the bulk of the chapter is devoted to a discussion of how atomic war should be fought.

By 1959, when *Strategy in the Missile Age* was published, Brodie had been thinking about these issues full-time for many years. But again he failed to take a clear line. If all we sought was to maximize the pre-war deterrent effect, he wrote, we should "assign the hard-core elements in our retaliatory force to the enemy's major cities, provide for the maximum automaticity as well as certainty of response, and lose no opportunity to let the enemy know that we have done these things." The problem was that "what looks like the most rational deterrence policy involves commitment to a strategy of response which, if we ever had to execute it, might then look very foolish." "For the sake of deterrence before hostilities," he argued, "the enemy must expect us to be vindictive and irrational if he attacks us"—even if his attack took care to spare our populations and successfully destroyed much of our retaliatory force; but "a reasonable opposing view" was "that no matter how difficult it may be to retain control of events in nuclear total war, one should never deliberately abandon control."[60]

Brodie understood that the basic issue in nuclear strategy was target selection. And the central problem here was whether the attack should focus on destroying the enemy's retaliatory force, sparing to the maximum extent possible the enemy's population, in order to preserve its hostage value—or whether the enemy's strategic forces should not be targeted at all, since the ability to destroy them might lead the enemy to preempt and thus be destabilizing. Brodie simply laid out both sets of arguments and made no serious attempt to resolve the issue. He had "given relatively little space," he said in his conclusion, "to the matter of how to fight a general war if it should come," because "the strategy of a total war is like an earthquake in that all the forces which determine its occurrence and its character have been building up over time, as have almost all the factors which determine how it runs its course."[61] The implication here was that rational analysis could make no real difference. And similarly, on the basic issue of limited war strategy—the question of tactical nuclear weapons—Brodie again simply laid out the pros and cons and drew back in this book from taking a position on the issue himself.[62]

Wohlstetter at this time was also fully aware of the problem, but unlike Brodie he actually tried to come up with an answer. His solution was second-strike counterforce. In 1959, in response to a request from General Thomas White, the air

[59] Note also Brodie's remarks in "The Security Problem in the Light of Atomic Energy," 89, 101.

[60] Brodie, *Strategy in the Missile Age*, 291–293. Compare also his scepticism about counterforce/"no-cities" on 155–156 with his comment on 310 that "It is certainly conceivable that strategic bombing could be carried on in a restrained and discriminatory fashion; one could argue it *ought* to be, for strategic as well as moral reasons, if carried on at all!"

[61] Ibid., 156, 289, 292–293, 303, 310, 401–402.

[62] Ibid., esp. 329–330.

force chief of staff, he and his RAND colleague Henry Rowen outlined some of their basic ideas on strategy.[63] Counterforce, they argued, was desirable as a form of insurance. It was unlikely that a rational enemy who chose to attack would use anything more than a small portion of his total force in the first wave. This was because, first, he would seek to "avoid giving warning," and, second, because "a rational strategy, both for ourselves and for the enemy, requires the ability to pose a military threat not only before the opening strike but after it." Hence strategic forces would be reserved, and there would be something meaningful to counter. If the enemy had a complete "free ride," the country might be literally wiped out in the course of the war; but the kind of counterforce and defense capabilities Wohlstetter and Rowen had in mind might "make a significant difference in the size of the disaster suffered by our population." "By 'significant,'" they added, "is meant the difference, for example, between 60 and 160 million dead, and an even greater difference in damage to structures, equipment and stocks."[64]

This argument, Wohlstetter and Rowen insisted, was "quite different" from the usual one put forward by defenders of counterforce. They did not want anything like a full counterforce capability. Both counterforce and city defense carried with them "some danger of destabilizing the deterrent balance." Measures of this sort, while valuable as insurance "in case deterrence fails," nevertheless would place "an extra burden on the deterrent itself." The argument was that as long as these capabilities were limited—as long as counterforce and strategic defense capabilities did not "remove [the enemy's] power to deter us"—the stability problem would be manageable: "If the counterforce capability and a hardened defense might make the difference between 40 and 160 million dead, the answer to the question of destabilization is that the lower limit to which we might aspire is still a catastrophe so large that we would hardly undertake it lightly. If so, then the amount of instability introduced by the counterforce and by city defenses appears no more than tolerable."[65]

As for Schelling, he too was being pulled in both directions. In a paper dated April 1960, he argued for the "no-cities"/counterforce strategy. But just a few months later he was making a case in a small meeting in Monterey for a strategy of controlled counter-city warfare—a strategy which "consciously eschews counterforce capabilities."[66] Soviet vulnerability, which Marshall had been describing at this meeting, was for Schelling not an opportunity but a problem. "We can tell them," he said, "that we are scared by their vulnerability." What he wanted was

[63] Albert Wohlstetter and Henry Rowen, "Objectives of the United States Military Posture," unpublished RAND working paper, 1 May 1959, 15.

[64] Ibid., 13.

[65] Ibid., 15, 17.

[66] Thomas Schelling, "Reflections on Active Defense in the Missile Age," unpublished RAND working paper, 8 April 1960; and "Les armements nucléaires," 134; note also the related argument in his "Dispersal, Deterrence, and Damage," *Operations Research* 9 (May-June 1961): 363–370. Ellsberg and Kecskemeti, "Minutes of the Monterey Seminar," I, 3–14.

a strategy that would make it possible to bargain with the enemy, something that would allow each side to generate fears and thus to put pressure on its adversary while keeping the door open to a negotiated end to the war. Paul Nitze asked him whether counterforce could be used for purposes of demonstration and bargaining. A counterforce strategy, he replied, "would force the tempo of the war and obliterate the environment in which bargaining can take place."[67]

Actually, what Schelling really objected to was a full counterforce capability. A limited counterforce capability might be an important way to manipulate risk and engage in a strategy of bargaining: "We want to reduce the urgency of striking, the feeling that one must use his strategic force lest it be wiped out. The main thing is not to aim at *complete* counterforce success. One can mount counterforce missions on various levels: the important thing is to preserve the character of limited war."[68]

What created a special problem for Schelling was the key role that the manipulation of risk and the "threat that leaves something to chance" played in his system. For Schelling, the suffering inflicted on civilian populations was important not so much in itself. It was the specter it raised of more agony, of pain on an even greater scale, that would generate the emotional forces governing the outcome of the war. The pain, he stressed, did not have to be inflicted directly; it could come "in the guise of 'military tactics.'" Indeed, it might come into being not as a result of design but as an unavoidable by-product of the "more 'tactical' kind of war."[69] Nevertheless, it was the civilian suffering and not the damage sustained by the military forces that was crucial.

The basic problem here, however, was whether such tactics would be employed even if they did not make military sense—that is, to take the most important example, if counterforce attacks did not make a meaningful difference in the size of the enemy's nuclear forces. If in fact there was no real military logic at work, then there would be no semiautomatic mechanism that would create a risk of things getting out of control. The strategy of inflicting pain would in that case have to be carried out "coolly and deliberately": this would be a simple, although obviously terrifying, war of endurance, and not the kind of risk manipulation that Schelling had considered so vital in the third chapter of *Arms and Influence.*

The problem seemed inherent in the nature of strategic nuclear warfare. The level of risk could not be finely calibrated for bargaining purposes. The military mechanism, and especially the desire to strike before being struck, which for Schelling was the great generator of risk, had a kind of all-or-nothing character. If the mechanism counted for anything at all, it might be too springloaded, and once set off might quickly take things to their ultimate limit.

This problem emerged as soon as people began to consider the operational im-

[67] Ellsberg and Kecskemeti, "Minutes," I, 16.

[68] Ibid., 17.

[69] In Klaus Knorr and Thornton Read, eds., *Limited Strategic War* (New York: Praeger, 1962), 255; Schelling, *Arms and Influence*, 181–182, 194.

plications of these warfighting strategies. If the counterforce campaign was to have a meaningful impact on the other side's military capabilities, then large numbers of people might be killed and enemy command-and-control facilities might be destroyed. Everyone knew that there were serious problems with America's command-and-control system. Hitch in 1960 called it the "weakest point" in America's "capability for waging actual war"; it was "hardly capable," he said, "of giving a 'go' order."[70] In their report for General White, Wohlstetter and Rowen viewed the problem as very serious and discussed it at some length; Schelling in 1960 also stressed the need for studying "the requirements for reconnaissance, communication and control in bringing the war to any kind of close other than through the sheer exhaustion of weapons on both sides."[71] But there just did not seem any way to control a full-scale counterforce war. The tempo would be too fast, the command facilities on both sides were too fragile. "A really vigorous counterforce campaign," Schelling wrote Brodie in 1965, "may just make it impossible to observe the restraint and targeting care and so forth that would be needed to make the 'no-cities' strategy work."[72]

Schelling, therefore, turned to the strategy of controlled countercity warfare, to a strategy of "pure coercion" and "pure pain."[73] If a general nuclear war had to be fought, this was the way to fight it. Maybe it seemed cruel to deliberately inflict pain for political ends, but was the policy of massive retaliation any better? A single all-out attack, he said, "may seem less cruel because it does not have a cruel purpose—it is merely purposeless—compared with deliberate, measured violence that carries the threat of more." But "a purely destructive war" was "neither clean nor heroic," and it was irresponsible for violence to be purposeless, since "coercion is the business of war."[74]

What did all this amount to? Here were some of the brightest people in America spending years wrestling with the most basic problems of strategy in the nuclear age. And yet what they finally came up with was not terribly satisfactory. Brodie, on the most central issues, did not even pretend to give answers. Schelling, on the other hand, embraced the strategy of controlled counterpopulation warfare, which he knew struck many people as cruel or bizarre.[75] As for the approach that Wohlstetter had settled on in 1959, the whole notion of second-strike counterforce seemed to raise as many problems as it solved. The first wave of an enemy attack might be limited, as Wohlstetter argued, in order to preserve the advantages of surprise. But a strong second-strike counterforce capability might simply convince an enemy

[70] Ellsberg and Kecskemeti, "Minutes," I, 11.

[71] Wohlstetter and Rowen, "Objectives of the United States Military Posture," 20–21, 29–32, 36–37; Schelling, "Reflections on Active Defense," 30.

[72] Schelling to Brodie, 22 February 1965, 4, Brodie Papers, Box 2.

[73] Schelling, *Arms and Influence*, 199, 201.

[74] Ibid., 202, 216.

[75] Thus the defensive tone of the passages where the idea is discussed in Schelling, *Arms and Influence*, 177, 178, 202–203, 215–216.

to launch a more massive and more rapid follow-on attack than he otherwise might—that is, to use the forces he was holding in reserve before they were destroyed. This might force an enemy to make all-or-nothing choices, and thus, in the usual fashion, to contribute to deterrence: the "all" being virtually suicidal, "nothing" would emerge as the preferred choice. But from the point of view of actual warfighting, second-strike counterforce made less sense: would the enemy attack in the first place unless it knew, with a high degree of confidence, that the strategic balance at the end of the exchange would be very lopsided and very favorable to it? It is hard to see how following such an attack the United States would be in a position to pursue any sort of successful military strategy. If, on the other hand, the United States was so strong that even after absorbing an enemy attack it would be able to pursue a counterforce strategy able to support its political goals, then what would this imply about its first-strike capabilities? If America were able to hold fatalities down to 40 million, even if the enemy struck first, the same capabilities might enable the United States to keep damages at much lower levels if it were to strike the first blow, thus again raising the problem of "stability."

It was as though whichever way one turned the problems were unavoidable. And of course the leading civilian strategists were all fully aware of these difficulties. This comes out above all in the tone they took in their writings. The strategists are often criticized for being too blasé or cavalier in their approach to nuclear war, for being too ready to assume that nuclear war is controllable or that such a war could be fought rationally. Herman Kahn was, I think, the only strategist in the RAND group who ever took anything like a nonchalant tone when dealing with these questions. But the strategists as a whole never approached these nuclear issues light-heartedly. All of the different possible strategies had problems of which everyone was aware. It was as though one settled on a preferred strategy by a process of elimination—not because one would ever want to execute it, or because there was any great enthusiasm for it, but because the alternatives had been even more discredited. James Schlesinger, for example, in a 1968 RAND document heavily influenced by Schelling's ideas, laid out the rationale for a flexible nuclear warfighting strategy—for what were eventually to be called during his tenure as secretary of defense "limited nuclear options." "The argument for sub-SIOP options"—that is, options more limited than those spelled out in the Single Integrated Operational Plan, the basic American plan for a massive nuclear attack on the Soviet bloc—"is not that they are especially appealing," Schlesinger wrote, "but only that such options may be less miserable than the other alternatives under given circumstances. The sub-SIOP option may be compared to playing Russian roulette with three chambers filled, hardly an enticing prospect for decisionmakers." But executing the full SIOP—that is, launching a massive attack—would be like playing with all six chambers filled.[76]

[76] James Schlesinger, "Rationale for NU-OPTS," RAND Report R-1608-Pr [limited distribution]. The references to Schelling are on 18 and 22; the passage quoted is on 5.

Strategy Hits a Dead End

The nuclear debate in the 1950s and early 1960s was lively and exciting because the problems themselves were so hard to resolve. It was common for people to talk about "paradoxes" and "dilemmas"; the answers were not easy or obvious. It was for this reason that the ideas that emerged at this time, especially at RAND, hardly amounted to a dogma. Instead, people felt themselves to be grappling, as Brodie put it, with "problems of terrible intellectual difficulty."[77] The mark of sophistication was a sense for what those difficulties were. It was easy to criticize those, both on the right and on the left, who thought that the answers were simple. In fact, it was the campaign against the official policy of the 1950s—the strategy of massive retaliation—that gave this body of thought its focal point, political identity, and intellectual coherence.

But as the 1950s progressed, the strategy of massive retaliation was viewed increasingly as bankrupt, even at the highest levels of the administration, although a certain effort was made to conceal this from the outside world. At the beginning of 1954, Secretary of State John Foster Dulles gave his famous speech setting out the new doctrine. But by the end of that year Dulles was already questioning in a letter to President Eisenhower whether America was "prepared to deal adequately with the possible 'little wars' which might call for punishment related to the degree and locality of the offense, but which would not justify a massive retaliation against the Soviet Union itself."[78] During the mid- and late 1950s, the doctrine was in constant retreat, as one can see, for example, by reading the series of annual Basic National Security Policy papers—documents that were taken quite seriously during the Eisenhower period.[79]

By 1958 Dulles was in fact leaning toward finite deterrence. The United States, he told the National Security Council, "should not attempt to be the greatest military power in the world although most discussions in the Council seemed to suggest that we should have the most and the best of everything. Was there no group in the government which ever thought of the right kind of ceiling on our military capabilities?"[80] On the question of limited war, Dulles simply felt that it was dangerous to permit any

[77] Brodie, Asilomar talk, 29 April 1960, Brodie Papers, Box 17.

[78] Dulles memo of 22 December 1954, John Foster Dulles Papers, Eisenhower Library, Abilene, Kanas, White House Memoranda Series, Box 1, file "Meetings with the President." Copies are available at the J.F. Dulles Papers, Seeley Mudd Library, Princeton University, Princeton, N.J. See also Memo, ExecSecy, NSC, to NSC, "Review of Basic National Security Policy," (BNSP) 17 November 1954, JCS 2101/172, 18 November 1954, CCS 381 US (1-31-50) sec 48, Modern Military Branch, US National Archives, cited in Robert J. Watson, *The Joint Chiefs of Staff and National Policy, 1953-1954* (Washington, D.C.: U.S. Government Printing Office, 1986), 50.

[79] For the Eisenhower period, the following BNSP papers are available at the Judicial-Fiscal-Social Branch of the United States National Archives, Washington, D.C.: NSC 162/2, 5422/2, 5501, 5708/8, 5810/1.

[80] "Discussion at the 363rd Meeting of the National Security Council, 24 April 1958," Declassified Documents Collection, 1980: 384B.

> doubt as to the willingness of the United States to resort to massive nuclear retaliation until such time as we have something to take its place. The massive nuclear deterrent was running its course as the principal element in our military arsenal, and very great emphasis must be placed on the elements which in the next two or three years can replace the massive nuclear retaliatory capability. In short, the United States must be in a position to fight defensive wars which do not involve the total defeat of the enemy. . . . If we have to keep our basic policy paper in the form and language that it presently has in order to avoid showing our hand, this was ok with Secretary Dulles. But we must do everything that is necessary in order to develop the supplementary strategy of which he had spoken.[81]

And indeed by the time the administration left office at the beginning of 1961, outgoing Secretary of Defense Thomas Gates felt very confident about America's "limited war capabilities."[82] One has the sense in fact that by this point, massive retaliation would only be considered in the context of a major U.S.–Soviet war in Europe—as an initial response only to a massive attack on Western Europe, or, even more remotely, an attack on America itself. Brodie, one should note, more or less accepted massive retaliation as the proper strategy for such extreme cases.[83]

Reading the documents, one sometimes gets the sense that Eisenhower himself was one of the last true believers. To him, even as late as 1960, a major U.S.–Soviet limited war was an absurdity.[84] His "basic philosophy," he said during the Berlin crisis in 1959, was that America had "to be willing to 'push its whole stack of chips into the pot' when such became necessary. . . . He expressed the conviction that the actual decision to go to all-out war will not come, but if it does come, we must have the crust to follow through."[85] Eisenhower could on occasion be extremely assertive, but on many issues he was also willing to allow his government to take its own course. He thus acquiesced in the drift away from massive retaliation, but in his heart remained skeptical: as terrible as it was, there was no getting away from the massive strike as the ultimate basis of policy; it was just self-deception to pretend otherwise.

In the 1950s, when massive retaliation was the country's official policy, the strategists had new and important things to say. Eisenhower had given these people

[81] "Discussion at the 364th Meeting of the National Security Council, Thursday, 1 May 1958," Declassified Documents Collection, 1980: 384C.

[82] Clifford to JFK, January 24, 1961, President's Office Files, Box 29a, folder "Eisenhower, D.D. 1/17/61 - 10/9/61," John F. Kennedy Library, Boston, Mass.

[83] Brodie, *Strategy in the Missile Age*, 341, 354–355. Note also the famous article by William Kaufmann, "The Requirements of Deterrence" in W. Kaufmann, ed., *Military Policy and National Security* (Princeton, N.J.: Princeton University Press, 1956), 26–27.

[84] George Kistiakowsky, *A Scientist at the White House* (Cambridge, Mass.: Harvard University Press, 1976), 400.

[85] "Memorandum of Conference with the President," 8 March 1959, Declassified Documents Collection, 1981/598A.

something to react to, a target for their fire. But in 1961 the situation changed dramatically. Under John F. Kennedy, the strategy of massive retaliation was explicitly rejected. Although the change in the formal war plans was not nearly as great as the shift in doctrine seemed to imply, it was clear that the Kennedy administration generally shared most of the ambivalences of the strategists on nuclear issues. Indeed, many of the strategists who had worked at RAND in the 1950s played a key role in shaping the military policy of the new administration.[86] But what this ultimately meant was that the theorists were losing their target, which was a lot fuzzier now than it had been during the Eisenhower period. And with the Vietnam war in the late 1960s, they began to lose their self-confidence as well.

The role that the ideas developed by the nuclear strategists, especially Schelling, played in shaping American policy in Vietnam, can easily be exaggerated.[87] It is clear that ideas about signaling through military action and warfare as a kind of bargaining process played a certain role. But the American bombing policy, for example, was not based on generating a sense that matters were getting out of control—on exploiting a threat "that leaves something to chance." In fact, one of the most striking things to emerge from the study of the American air war is the way proposals for a relentless and ominous increase in the destructiveness of the air war were rejected when the bombing policy was worked out.[88] But clearly something had changed after Vietnam. It was not so much that the logic had been revealed as defective; it was the relevance of this body of thought that now came to be questioned. There was a sense that it was somehow out of touch with reality.

For Brodie especially, there was a great shift in perspective. The military problems the strategists had focused on, he now came to feel, were really of secondary importance. The strategists as a group had vastly overestimated the extent to which war could result from essentially military factors: the problem of "strategic instability" had been greatly exaggerated. He even went so far as to claim that he had never believed in the "delicacy" of the balance, although this was certainly untrue.[89] The whole concept of an "accidental" nuclear war, which had played such

[86] See esp. Brodie, "The McNamara Phenomenon," *World Politics* 17 (July 1965); Desmond Ball, *Politics and Force Levels: The Strategic Missile Program of the Kennedy Administration* (Berkeley: University of California Press, 1980), 31–34; and Kaplan, *Wizards of Armageddon*, esp. chaps. 15–18.

[87] Kaplan, for example, claims (on 332) that Schelling's "concept of coercive warfare" shaped American strategy in Southeast Asia.

[88] See Wallace Thies, *When Governments Collide: Coercion and Diplomacy in the Vietnam Conflict, 1964–1968* (Berkeley: University of California Press, 1980), 2 (esp. n. 5), 3, 85–86, 88, 93.

[89] Brodie, "The Development of Nuclear Strategy," *International Security* 2 (Spring 1978): 69. Compare this, for example, with the final paragraph of his "The Anatomy of Deterrence," *World Politics* 11 (January 1959), and esp. his "Strategic Objectives and the Determination of Force Composition," unpublished RAND working paper, 9 June 1959, 11.

an important role in the arguments about preemption and stability circa 1960, he now dismissed as "ludicrous."[90]

Looking back at this body of thought as a whole, it is clear that the publication of Schelling's *Arms and Influence* in 1966 marked something of a climax. After 1966 the field went into a period of decline: the well seemed to have run dry, the ideas were by and large no longer fresh or exciting, or to use a phrase that Brodie had himself used in a different context in 1955, strategy had hit a dead end.

Was this to be attributed simply to the way the world was changing in the 1960s—to the shift in nuclear strategy under Kennedy and to the Vietnam war? The problem in fact had deeper roots. The most basic issues were analyzed on a very abstract level. One could work out in general terms the argument for strategic stability, or for various nuclear warfighting strategies. But at this level of abstraction there were no final answers; at this highly abstract level of conceptualization the most basic intellectual tensions could not be resolved.

What, therefore, had this body of thought amounted to? On the one hand, the strategists had developed a way of thinking about nuclear issues—not a technique for processing hard, especially quantitative information, and mechanically grinding out answers. For it was universally recognized that the really interesting questions were those with a political dimension, the kind that did not lend themselves to a purely technical analysis. In fact, the particular answers that were given were not especially important in themselves; to someone like Brodie, it was not even clear whether there were any right answers, although there were certainly plenty of wrong ones. What was important was the often counterintuitive nature of the argument, the questions it raised, and the depth of insight it made possible.

On the other hand, there was something strange about this intellectual tradition. For Schelling especially, but to a certain degree for the others as well, the emphasis on risk meant that the manipulation of risk became perhaps *the* central concern of strategy. Ironically, given the hostility of these strategists to the military policies associated with Eisenhower and Dulles, the bottom line here was a defense of "brinkmanship." "Until we can manipulate the risk of general war and engage in competitive risk-taking with the Soviets," Schelling said in 1963, "I don't think we are going to learn to take care of Berlin, much less to take care of Indonesia and Finland when the time comes."[91]

The effect, at least in Schelling's case, was to transform strategy once again into tactics writ large—not military tactics this time, but bargaining tactics. For the group as a whole, the great problem of international politics, the problem of war and peace, was reduced to the problem of behavior during times of crisis and after

[90] Brodie, "How Much is Enough? Guns Versus Butter Revisited," California Seminar on Arms Control and Foreign Policy, August 1975, 20.

[91] David Abshire and Richard Allen, eds., *National Security: Political, Military and Economic Strategies in the Decade Ahead* (New York: Praeger, 1963), 646.

the outbreak of hostilities. The purely military side of war causation, as Brodie later complained, became the focus of analysis, as though war itself were not in essence a political artifact, as though the basic insight of Clausewitz, whom they all respected, was somehow obsolete. It was not that the issues they focused on were meaningless or irrelevant. The problem, for example, of accidental war resulting from the reciprocal fear of surprise attack was certainly worth thinking about. It was simply a question of balance, of not allowing the tail to wag the dog; and this depended on the sophistication of one's theory of war causation.

"Strategy," Brodie wrote, "is a 'how to do it' study, a guide for accomplishing something and doing it efficiently."[92] It was concerned above all with certain hypothetical situations: If war breaks out, what should we do? If Soviet armies attack western Europe or cut off West Berlin, how should we respond? If we get involved in a crisis, how should we handle it? The central issues of military policy were analyzed in this context. What sort of military policy would put us in the best position for dealing with these situations once they arose? The focus was not on war, or even crisis, as the outcome of an historical process unfolding over a period of years. Policy was, therefore, not analyzed in terms of the manipulation of that process—the shaping of hopes and anxieties so as to influence the course of great power politics. It was as though a whole dimension of strategy had somehow disappeared. A broad range of strategic issues having to do with the way the political and military spheres interact with each other, not just in time of war or crisis, but in more normal times as well, was never really closely examined by mainstream American strategic thought.

These, in any case, are the kind of reflections that suggest themselves to someone trained to think in terms of traditional European great power politics. None of the strategists of the 1950s and 1960s came from that tradition. The small group of men who dominated the field were not people who had been thinking for years about how the international system operated, about what made for war, or about the role that military power played in international politics. Even Brodie, the most politically-minded individual in the group, was an isolated and to some extent an alienated figure in American political science. He was much more a student of military issues than of international politics in general. Given where they did come from intellectually, it was natural that their thinking on these basic issues should take place on a fairly abstract and apolitical level.

And it was apolitical in substance, I think, in large part because it was ahistorical in method. History, for the strategists, when they used it at all, was more a source of illustration than of insight. Brodie himself, a partial exception to this general rule, realized that this was a basic problem. "One of the distinctive weaknesses," he said, "of the otherwise spectacular kind of strategic analysis that has developed especially in the United States is that it often seems to be conspicuously

[92] Bernard Brodie, "Why Were We So (Strategically) Wrong?" *Foreign Policy* (Winter 1971–72): 161.

lacking in something that I can only call historic sense or sensitivity."[93] But if the diagnosis is sound, the prescription seems inescapable: historical analysis has to move into the mainstream of strategic studies. History, as a scholarly discipline, has a basic role to play in the intellectual reinvigoration of the field.*

[93] Brodie, "Nuclear Strategy in its Political Context," February 1968, folder "Munich Conference," Brodie Papers, Box 20, 2.

* This article is based in part on research in classified material. Under the terms of the limited security access that the U.S. Air Force grants to scholars, I was able to see certain older documents up to the level of "secret"; the RAND Corporation also generously allowed me to see many of their documents from the period covered in this study. To both of these organizations, and especially at RAND to James Digby, Malcolm Palmatier, and Barbara Woodfill, I am deeply grateful for assistance and cooperation that went far beyond what a scholar working in this field has any right to expect. As part of the agreement authorizing access to these materials, the final manuscript had to be cleared for publication by both of these organizations. But it should be noted that no changes of any substance were required by either RAND or the air force. At no point did I ever feel that my freedom as a scholar was being constrained in any way. I also very much appreciate the help and criticism I received from a large number of individuals, and I would in particular like to thank Robert Jervis, Carl Kaysen, Joseph Loftus, Andrew Marshall, John Mearsheimer, Thomas Schelling, Stephen Van Evera, and Albert Wohlstetter. Finally, I would like to thank the Guggenheim Foundation for supporting the research on which this article is based.