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# The American Debate on Nuclear Weapons Policy

## *A Review of the Literature 1945–1985*

Abstract: Criticism of nuclear weapons policies often misses the target through ignorance of the policies that are actually in effect. This essay recounts the development of American nuclear weapons policies, together with a history of the criticisms of these policies presented by nuclear strategists and moral philosophers.

### 1. Introduction

I wish in this article to describe the American debate about nuclear weapons as it developed from 1945 down to the present day. Since the subject is vast, my description can be no more than a sketch. But after each section, I indicate further readings for those who may wish to probe more deeply into a particular topic.

The American 'debate' about nuclear weapons policies is actually two separate debates. There is a debate, conducted principally by political leaders and academic social scientists, about the rationality of different nuclear weapons policies, i.e. about whether or not a particular policy serves the interests of the United States. Secondly, there is a debate, conducted principally by private citizens, academic philosophers, and religious leaders, about the morality of different nuclear weapons policies, i.e. about whether or not a particular policy is sanctioned by moral principles. In what follows I consider both the strategic debate and the moral debate.

Both the strategic debate and the moral debate have been marred by intellectual confusion and argument at cross purposes. The debate about rationality is often confused because different groups have different ideas about what constitutes the 'interests' of the United States. One group, who might be called 'realists', define the American national interest narrowly, as consisting of the physical safety, political independence, and material well-being of the American people. Another group, the 'ideologues', define the American interest as consisting of safety, independence, and well-being

Analyse & Kritik 9 (1987), S. 7–46

plus the maintenance of American influence in the world at large, where the maintenance of American influence includes the protection of American economic interests, the support of regimes favorable to the United States, and the undermining of Communist regimes or regimes favoring the Soviet bloc. Obviously, the different definitions of 'interest' often yield different recommendations about which course of action is rational from the American point of view.

The debate about the morality of different nuclear weapons policies has been even more confused than the debate about rationality. Not only do different groups in the debate subscribe to different and conflicting moral codes, there is also considerable conscious and unconscious disagreement about the correct moral methodology to be applied to this problem. As regards moral codes, the principal divisions are between

(a) utilitarian moralists, who evaluate policies according to their estimated effects on the welfare of mankind,

(b) de-ontological moralists, who evaluate policies according to a code of forbidden acts or mandated duties,

(c) justice-oriented moralists, who evaluate policies according to general principles of justice and fairness, and

(d) social contract theorists, who evaluate policies according to principles explicitly or implicitly consented to by the parties whose interests are at stake.

As regards moral methodology, the principal differences are between

(a) those who consider all moral beliefs to be inherently undemonstrable or 'subjective', whether applied to private conduct, or international relations,

(b) those who consider moral principles to be genuinely applicable to personal conduct but inappropriate when applied to the actions of nation-states, and

(c) those who believe that the demands of morality are equally applicable to the actions of individuals and the policies of nation-states.

There is also a deep methodological gap between those who feel that the proper object of moral judgement is the intention with which an individual performs an action, and those who feel that the proper object of moral judgement are the effects which the action to be judged will have upon the world.

Given all these disagreements about basic principles, it is not surprising that the debate about nuclear weapons policies presents a chaotic appearance, full of rhetoric and repetition. As a philosopher, the chaos offends me. But in this historical essay, I must leave it in, since this is how things actually transpired.

Sources and Texts: For recent American discussion of the true 'interests' of the United States consult Richard Barnet, Real Security (New York 1981). For recent American of the applicability or inapplicability of moral principles to international relations, see War and Moral Responsibility, edited by Marshall Cohen, Thomas Nagel, and Thomas Scanlon (Princeton 1974) and the discussions of 'moral realism' in Michael Walzer, Just and Unjust Wars (New York 1977) and Michael Dockrill and Barrie Paskins, The Ethics of War (Minneapolis/Minn. 1979). See also the review of Walzer by D. Lackey in the journal Ethics (April 1982) and Walzer's reply (Ibid.). Also helpful are the introductory chapters in three recent book length studies of 'just war theory': W.V. O'Brien, The Conduct of Just and Limited War, (New York 1981), J.T. Johnson, Just War Tradition and the Restraint of War (Princeton/N.J. 1981), and Can Modern War Be Just? (New Haven/Conn. 1985), also by J.T. Johnson.

## 2. Prelude

Since nuclear weapons were first used in the course of American terror bombing against Japan, a good starting point for the consideration of nuclear weapons policy is the bombing campaigns of the Second World War. As is well-known, after a brief attempt at precision bombing in 1940, the Royal Air Force Bomber Command shifted to a policy of nighttime area bombing of German territory. Not only did Churchill and Arthur Harris, the head of Bomber Command, know that the shift to area bombing would cause great numbers of civilian casualties in Germany, the deaths of German civilians were also an intended goal of British policy, on the (dubious) assumption that such attacks would break German morale and make the German government more inclined to surrender. Though most of the British people supported the policy of area bombing, perhaps on the principle that it was fair to do to Germany what 'Germany' had done to them, a number of British religious leaders and other private citizens spoke out against the Churchill-Harris policy, arguing that the intentional killing of noncombatants was contrary to the principles of just war and morally indistinguishable from murder.

In the United States, little public or private criticism was voiced about British area bombing, perhaps because Americans felt that British bombing policy was not their business. Nevertheless, when the American Army Air Force joined the British bombing campaign in 1942, American policy, fortified by possession of superior planes and more accurate bombsights, rejected British-style area bombing in favor of precision bombing in daytime. American bombing raids, of course, killed large numbers of German

civilians. But American bombing killed fewer civilians per bomb than Britisch ombing, and it was not the intention of American bombin policy to kill German civilians, nor was it the intention of American policy to crack German morale through wholesale destruction of residential areas. Given the relative moral superiority of America policy, there was in the United States no criticism of American bombing policy against Germany, except from outright pacifists who rejected war in general.

Given the pains which the American Air Force had taken to separate itself from RAF policies in the European theater, it must have come as a surprise to British observers that, when American bombing of the Japanese homeland began in 1944, the Americans adopted towards Japan the very policy which they had implicitly condemned in Europe: nighttime area bombing. Under General Curtis LeMay, American bombers intentionally carpet bombed civilian areas, with the express intent of cracking Japanese morale and breaking "the will of the government to make war". Through the late winter and spring of 1945, as massive American raids burned great Japanese cities to the ground, a few isolated American voices spoke out against a policy which killed so many non-combatants, and killed them intentionally. But the majority of Americans, remembering the attack on Pearl Harbor and the brutal treatment American prisoners of war had received at the hands of Japanese officers, identified more in 1945 with the hundreds of American pilots dying in the skies than they did with the tens of thousands of Japanese civilians dying on the ground. By 1945, when the atomic bomb was being secretly prepared in America, the British and American people had come to accept the area of bombing cities as a normal part of modern war.

Sources and Texts: For an general history of the British bombing in World War II, see Charles Webster and N. Frankland, The Strategic Air War Against Germany 1939-45 (London 1961). For a history of British bombing policy, see Anthony Verrier, The Bomber Offensive (New York 1966). For the moral debate in England about area bombing see Barrie Paskins and Michael Dockrill, The Ethics of War (Minneapolis/Minn. 1979). For criticisms in 1944-45 of American bombing policy against Japan see John C. Ford, S.M., The Morality of Obliteration Bombing, in: Theological Studies 5 (1944), reprinted in War and Morality, edited by Richard A. Wasserstrom (Belmont/Ca. 1970). For criticisms in the United States from the secular side in early 1945 see Dwight Macdonald, Politics Past (New York 1970).

## 3. The Attacks on Hiroshima and Nagasaki

Given that there was so little public criticism in America of the area bombing of Japan, it is surprising that there was considerable debate among the scientists working on the construction of the first atomic bomb as to how the new weapon ought to be used. Once the technical difficulties of 1944 had been overcome and it became apparent that a workable bomb

would be available by the summer of 1945, scientists on the project divided into (a) a smal minority who felt that the bomb should not be used at all, (b) a slight minority who felt that a 'demonstration' bombing of an uninhabited area should precede any use against a Japanese city, and (c) a substantial minority who felt that the bomb should be used against a Japanese city, just as incendiary bombs had been used since 1944. Those who opposed any use at all argued that the use of atomic energy in wartime would set a bad precedent for post-war development of atomic energy, which would be centered on military applications. The end result would be military control of basic scientific research. Those who favored a demonstration bombing argued that the massacre of civilians in a city attack would be immoral since the actual bombing of a city was not in fact needed to induce surrender. But the scientific director on the atomic project, Robert Oppenheimer, rejected the proposal for a demonstration bombing, on the grounds that the demonstration might not work, that the explosion might not impress, and that the stock of American atomic bombs was too small to waste any on demonstrations.

In the end, Truman accepted Oppenheimer's recommendations, and 120,000 people died at Hiroshima, 80,000 more at Nagasaki. The majority of Americans, then and now, believed that the two atomic attacks were morally justified, either because they believed that any attack is justified against a nation that has attacked first, or because they believed that ending the war by atomic bombing was morally better than ending the war by a land invasion of Japan that would kill more Japanese than were killed in the atomic raids. (This last justification is commonly and sincerely accepted by most Americans, even though it is now commonly known that a land invasion of Japan could not have begun before October 1945, and that the Japanese had been trying to arrange a surrender from February 1945, on terms that were, in the end, accepted by the United States.)

Sources and Texts: The best account of the scientists' initial debate about the use of nuclear weapons is Alice Kimball Smith, A Peril and a Hope (Chicago 1965): see particular the 'Franck Report' and the 'Jeffries Report' included in Smith's appendices. Edward Teller's opposition to the Hiroshima bombing is described in The Legacy of Hiroshima (Garden City/ N.Y. 1962). The political maneuvering that preceded the use of the bomb against Hiroshima is well chronicled in Gabriel Kolko, The Politics of War: the World and United States Foreign Policy (New York 1968), Martin Sherwin, A World Destroyed: The Atomic Bomb and the Grand Alliance (New York 1975), and Gregg Herkin, The Winning Weapon (New York 1980). For details about the Japanese attempt to surrender, see Herbert Feis, The Atomic Bomb and the End of World War II (Princeton/N.J. 1966), and Gar Alperowitz, Atomic Diplomacy (New York 1965). A nice collection of articles setting forth the pro and cons of the Hiroshima bombing is Paul L. Backer (ed.), The Great Decision (New York 1968).

4. Post War Plans and 'Massive Retaliation'

Despite the widespread feeling that the Hiroshima bombing was justified, both morally and strategically, there was, in the immediate postwar period, a general revulsion in the United States with area bombing in general and atomic bombing in particular. Shown pictures of the effects at Hiroshima, Truman ordered that the third atomic bomb not be assembled, since some alternative had to be found to "killing all those kids". The horrors of Hiroshima were widely publicized in a series of articles by John Hersey published in the New Yorker magazine, and news reports from occupied Japan about the devastation wrought by American incendiary raids made a considerable impression on the American public. From 1946 to the present, the dominant moral theme in discussions of nuclear weapons has been that typical uses of these weapons involve the slaughter of the innocent. The deepening American sense of war guilt was abetted, in 1946, by the publication of the Air Force's own 'Strategic Bombing Survey', which reported that area bombing in the recent war had been much less military effective than precision bombing, and consequently that hundreds of thousands of civilians killed in American and British area bombing raids had, by and large, been massacred for no discernable military advantage.

Thus the general post-war feeling - that there should be no more war - was conjoined with the particular sentiments that area bombing should be avoided and that atomic weapons should be abolished. By March 1946, Robert Oppenheimer and David Lilienthal, with the sanction of the American State Department, had proposed the abolition of atomic weapons through the establishment of an International Atomic Energy Authority empowered to monitor and control all the fissionable material in the world. Since no one under this system could have the materials with which to make bombs, no bombs would be produced, even if wars between nations would continue to occur. A version of this plan was presented by Bernard Baruch to the United Nations in June 1946, where it failed to gain acceptance by the Eastern bloc, because (the Americans said), it required the Soviets to give up hopes of military domination through development of their own atomic weapons, or because (the Soviets said) it required all the world's nations to give up their fissionable material before the Americans gave up their bombs.

Sources and Texts: For a description of the effects of the atomic bombings shortly after the event, see John Hersey, Hiroshima (New York 1946). The most complete description of the effects of the atomic attacks is The Physical, Medical, and Social Effects of the Atomic Bombings, compiled by the Committee for the Compilation of Materials on Damage Caused by the Atomic Bombings (New York 1981). The most poignant memoir of Hiroshima is the collection of children's accounts entitled Children of the A-Bomb edited by Akira Osada in 1955 and republished in English by Gunn and Oegelschlager (Boston 1982). For the history of the 'Baruch Plan' for the international control of atomic energy and its predecessor, the 'Acheson

Lilienthal Plan', see Smith, A Peril and a Hope op. cit, Richard G. Hewlitt and Oscar E. Anderson, A History of the Atomic Energy Commission: Volume I, The New World (University Park/Pa. 1965), Dean Acheson, Present at the Creation (New York 1982), and Gregg Herken, The Winning Weapon (New York 1980).

Though Truman seems to have retained some hopes of internationalization as late as 1949, by the end of 1946 it was clear that atomic weapons would be part of the American military arsenal in the next war. As early as 1946, plans were drawn up for an atomic offensive against the Soviet Union. Following the recommendations of the Strategic Bombing Survey, and taking account of the disappointingly 'small' effects produced by atomic weapons in the Bikini tests in summer 1946, the first plans for atomic war called for the use of atomic weapons against military installations and related facilities, such as rail lines, ammunition caserns, oil storage facilities, and so forth. These plans, which presupposed an ability to locate these targets plus a substantial number of atomic weapons with which to destroy them, were conceived in general ignorance of the size of the American atomic stockpile, the minuscule size of which was the best kept American secret of the post-War era.

When Curtis LeMay assumed control of the newly formed Strategic Air Command in 1948, he discovered both the size of the atomic stockpile and the inadequacy of American maps of Russia. New battle plans formed under LeMay's direction rejected precision atomic bombs and called for area or 'city' attacks against the Soviet Union. From 1948 to 1962, all plans for atomic war against the Communist bloc called for the use of atomic weapons against Soviet (and Chinese) cities, with the first hundred bombs falling (roughly) on the hundred largest cities, the second hundred bombs falling on the second hundred largest cities, and so forth.

Sources and Texts: The best account of American nuclear war plans from 1945 to 1960 is David Alan Rosenberg, 'The Origins of Overkill: Nuclear Weapons and American Strategy 1945-1960', in: International Security 7,4 (Spring 1983). This article sets new historiographical standards for the study of military policy in the atomic era. See also Desmond Ball, Targeting for Strategic Deterrence (London: Institute for Strategic Studies, 1983). The flavor of late 1940's American attack plans is conveyed in a declassified 1949 document describing a plan for a global war with Russia: Dropshot: the United States Plan for War with the Soviet Union, edited by Anthony Cave Brown (New York 1978).
For information about the development of nuclear strategy in the post-war period, consult Bernard Brodie et al., The Absolute Weapon (New York 1946). The best general history of nuclear strategy for the post-war period, and, indeed, for all subsequent periods down to 1981 is Lawrence Freedman, The Evolution of Nuclear Strategy (New York 1981).

Since post-war American plans for nuclear war were all kept secret from the American public, there was little public protest when the LeMay regime was inaugurated in 1948. The first inkling of the American return to area

bombing came in 1949, when the American Navy, angry about the budgetary cancellation of a new aircraft carrier, sent a series of witnesses to the American Congress with moral protests about Air Force plans, which were described by the Navy as plans for an 'atomic blitz'. But as Communist influence reached high tide in late 1949 with the fall of Chiang Kai Shek, and as North Korean forces came south across the 51st parallel, Navy protests about the morality of Air Force bombing plans fell on deaf ears. Even when new production methods developed in the early 1950's increased the American stockpile from tens to thousands of atomic weapons, the general orientation of American plans did not change. On the contrary, LeMay's 'city busting' approach received Presidential sanction in 1950 when Truman decided, over Oppenheimer's objections and after a furious State Department debate in 1949, to proceed with the development of superlarge, thermonuclear bombs, the city-busting weapons par excellence.

Sources and Texts: The 'revolt of the admirals', one of the most interesting episodes in post-war American military history, is poorly documented. I provide German readers with quotations from the two key Navy speeches:
Admiral Radford: "A war of annihilation might bring a pyrrhic victory, but it would be politically and economically senseless." (New York Times 10/8/49)
Admiral Ostie: "We consider strategic air warfare, as practiced in the past and as proposed for the future, is of limited effectiveness, is morally wrong, and is decidedly harmful to the stability of the post-war world ... Military aims must be consonant with political aims. The great defect of the present concept of strategic bombing is its contradictory relation to fundamental ideals, principles, and commitments of the United States ... The intent of wholesale extermination of enemy civilians does not enter into the definition of strategic air warfare. However, strategic bombing, as now accepted, unavoidably involves mass slaughter of men, women, and children in the enemy country. ... If we now consciously adopt a ruthless and barbaric policy towards other peoples, how can we prevent the breakdown of those standards of morality which have been a guiding force in this democracy since its inception?" (New York Times 10/12/49)
For the decision to build the hydrogen bomb, consult Gregg Herken, The Winning Weapon, op. cit., and David Alan Rosenberg, 'American Nuclear Strategy and the Hydrogen Bomb Decision', in: Journal of American History, 1979, and George F. Kennan, The Nuclear Delusion (New York 1982).

Though they made little impression on Truman, the Navy protests of 1949 were not lost on the community of American atomic scientists. Many of them were appalled by the idea of further Hiroshimas, and many of them, at some risk to their careers, had opposed the decision to proceed with the hydrogen bomb. Convinced (reluctantly) that the U.N. was not going to abolish war, and repulsed by the idea of using atomic bombs against cities, some morally oriented scientists set themselves the task of developing small scale nuclear weapons, the uses of which could bear some resemblance to traditional non-terroristic uses of weapons of war. In short order, Project Vista, a crash Korean war research program, developed the

atomic cannon, the atomic mortar, and the atomic mine. None of these were used in the Korean war, but they were gradually insinuated into NATO arsenals as a counterweight to the superior manpower of the Warsaw Pact. The sincerity of the scientists that developed the new tactical nuclear weapons could hardly be doubted, but if they were attempting to limit and humanize nuclear warfare, their efforts were destined to fail. It was hardly likely, if the Army acquired tactical nuclear weapons, that the Air Force was going to abandon its larger, strategic nuclear weapons. Instead of providing a substitute for city-busting nuclear weapons, Project Vista created a world in which their were two categories of nuclear weapons rather than just one.

Sources and Texts: For the scientists' motivations and involvement in Project Vista see Alice Kimball Smith, A Peril and a Hope, op. cit., and Robert Gilpin, American Scientists and Nuclear Weapons Policy (Princeton/ N.J. 1962).

The new Republican administration elected in 1952 pressed forward with development of both small scale and large scale nuclear weapons. On the tactical front, Eisenhower instructed the Army that "Henceforth nuclear weapons are to be regarded as the same as ordinary munitions." On the strategic front, the U.S. exploded its first thermonuclear device in 1952, and in 1954, its first full fledged hydrogen bomb contaminated over 1500 square miles of the South Pacific with radioactive fallout. Dominated by ideologues committed to controlling international Communism by threats to use American nuclear forces, the Eisenhower administration developed a strategic doctrine commensurate with the scale of its new weapons. In answer to Communist provocations, the United States, Secretary of State Dulles announced, was prepared to retaliate "massively, at times and places of our own choosing". Later that same year, a high level sub-committee of the National Security Council recommended to Eisenhower that the United States launch a preventive nuclear war against the Soviet Union, before the Soviets could develop bombers capable of delivering hydrogen bombs to the United States.

Fortunately for all concerned, Eisenhower ignored the call for preventive war, but he did little to limit Strategic Air Command plans for war with Russia, if war should come. The Strategic Air Command plan for war with Russia in 1955 impressed those who saw it as a plan to reduce all of Russia to a "smoking, radiating ruin in about two hours". According to Air Force estimate, the plan for 1955 would cause 70 million deaths in the Soviet Union. Between 1955 and 1960 the United States constructed a great fleet of B-52 bombers, developed the missile launching atomic submarine, and expanded its nuclear stockpile many-fold. The Single Integrated Operational Plan (SIOP) for American nuclear attack in 1960 required the American President, should he choose to use nuclear weapons at all, to unleash a simultaneous raid on all major cities in the Soviet Union and

China. By official estimates, this attack would kill 350 to 400 million people. Appropriately, the name given to this posture was Massive Retaliation.

Sources and Texts: The article that best conveys the character of Strategic Air Command planning in the 1950's is David Alan Rosenberg, "A Smoking Radiating Ruin at the End of Two Hours", in: International Security 6,3 (Winter 1981). This article reprints two recently de-classified reports on Air Force plans in 1954 and 1955. The recommendation for pre-emptive atomic attack against the Soviet Union is documented in Rosenberg, The Origins of Overkill, op. cit. For the early history of massive retaliation see Samuel F. Wells, 'The Origins of Massive Retaliation', in: Political Science Quarterly 96 (1981/82). For war plans in the late 1950's see Desmond Ball, Targeting for Strategic Deterrence, op. cit.

## 5. Criticisms of Massive Retaliation: Strategic Criticisms

Serious, widespread, and public criticism of Massive Retaliation began in late 1954, after the explosion of thermonuclear weapons by both of the superpowers. The criticism moved along two tracks, the prudential track and the moral track.

On the prudential track, the prevailing criticism of Massive Retaliation was that the threat of American attack with massive nuclear weapons was an incredible threat, especially when directed against a superpower possessing thermonuclear weapons of its own. For example, American posession of nuclear weapons did not enable the United States to assist the Hungarians in 1956, since an American nuclear strike against Soviet Russia could have provoked a Soviet thermonuclear attack on major cities in Western Europe. In one of the earliest of many volumes developing what came to be called "Limited Nuclear War Theory", Henry Kissinger noted that "no nation is going to commit suicide in the defense of somebody else". It does not appear, despite Dulles's threats, that the Soviets ever believed that the Americans would attack them with strategic weapons, and it does not appear that the Chinese believed them either.

Kissinger's suggested route out of the American strategic impasse was to negotiate agreements for nuclear free zones in Europe and for the bi-lateral restriction of nuclear weapons to warheads of a (relatively) limited size. In succeeding years, a host of Kissinger style suggestions for limiting nuclear war in Europe have been proposed, but all of them have foundered on scientific estimates that such limited nuclear wars, even if they remained limited, would cause several million civilian casualties.

In the late 1950's it became clearer that a first use of large scale nuclear weapons against a nuclear power would be suicidal. Strategists debated whether there was any rational use left for large scale nuclear weapons,

and a consensus began to emerge that even if it were suicidal to use large nuclear weapons first, it still might be rational to use them in response to a nuclear attack. At least it might be rational to threaten to strike back with nuclear weapons, since the threat to strike back would, against a rational opponent, prevent nuclear attacks from occurring in the first place. Slowly, American strategic forces were shifted from a posture in which they would need be used first to a posture in which they would probably be used second. Obviously, if nuclear forces are to be used second, they must be capable of surviving nuclear attack, and the search for survivable 'basing modes' began. Finding its bombers potentially vulnerable to nuclear sneak attacks, the Strategic Air Command began pulling its bombers back from overseas bases to safer positions in the continental U.S.

But if it was safer to place bombers far away from potential enemies rather than close to them, it was clear that no air base could be completely safe from pre-emptive nuclear attack. The Navy argued in 1958 that nuclear submarines at sea were more likely to survive a nuclear attack on the United States than any air base, and that ballistic missiles launched from nuclear submarines were more likely to reach their targets than subsonic strategic bombers. Navy advocates like Admiral Arleigh Burke went so far as to argue that all American strategic nuclear forces should be shifted from the Air Force to the Navy, and that the a relatively small number of nuclear submarines was all the United States needed to deter nuclear attacks with credible threats of American counterattack. The Air Force responded to Burke's system of 'Minimum Deterrence' with the observation that only strategic bombers could bomb the Soviet Union with any precision, taking out military targets and sparing cities. Thus the debate between the Air Force and the Navy in 1958 was exactly the reverse of the debate between the Air Force and the Navy in 1949. As before, the Navy lost the argument, and the Air Force ended up with two-thirds of the American 'strategic triad': nuclear bombers and land based missiles. The Navy was left with submarine launched ballistic missiles.

By 1959, strategic thinking about nuclear weapons was almost entirely focused on the problem of an American second strike. The initial thought about a second strike was that a second strike should be as massive as possible, but the subsequent thought was that a second strike should roughly mimic the size of the enemy's first strike. Furthermore, it was clear to some that any nuclear attack on the United States that spared American cities should not produce an American attack on Soviet cities, since that attack might indeed provoke a Soviet attack on American cities, which had thus far been spared. Strategists at the RAND corporation in Santa Monica, California, began to develop new and secret war plans which would provide the President, should he choose to use strategic nuclear

weapons, with more options than the single massive strike provided by the Massive Retaliation plans in force in the late 1950's.

Most of the RAND discussions of nuclear war remained classified, but the public got some inkling of the sorts of things that were being discussed at RAND in the 1950's when Herman Kahn, a RAND strategist, published his mammoth treatise, On Thermonuclear War in 1960. Bernard Brodie had already taken issue with the commonly accepted notion that every use of nuclear weapons between the superpowers must consist of a tremendous spasm in which both side discharged the bulk of their nuclear arsenals. In his book, Kahn developed dozens of different scenarios for different types of nuclear wars, confidently expressing the belief that nuclear wars could begin on a limited scale and remain on a limited scale. Furthermore, even in the case of large scale nuclear wars, Kahn argued that the recovery period after the war might be short: with proper preparations, Kahn thought, the United States could recover from a large scale nuclear attack in as little as 35 years. Strategically, Kahn's stressed that the United States must not become paralyzed through fear of starting a nuclear war; that the nation must prepare to fight, limit, and recover from nuclear wars. Kahn's views were widely disseminated but few were persuaded by them. On the contrary, Kahn's views and writing style generally terrified his readers, and led them to reject his recommendations about war limitation and civil defense. The notion of preparing to fight and 'win' nuclear wars did not enter the mainstream of American political thinking in the United States until the arrival of the Reagan administration in 1981.

Many of the strategic problems affecting the use of large scale nuclear weapons affected small scale nuclear weapons as well. By the late 1950's, NATO forces possessed large numbers of tactical nuclear weapons, but it was hard to argue that these provide a genuine military advantage if the other side possessed them as well, and if the likely place for the explosion of those weapons was friendly territory. The remedy proposed by a number of strategists was a to raise the 'threshold' for the use of nuclear weapons, while substantially increasing expenditures for conventional forces. These proposals, requiring large increase in military budgets, fell on deaf ears in Europe, and the theory behind them never did explain how a serious conventional war between nuclear powers could remain conventional when the losing party could turn to nuclear weapons in hopes of last minute victory. In the United States, proposals for substantial increases in conventional arms were stalled by Eisenhower's dislike of budget deficits. But in the United States in the early 1960's, reasoning along these lines led to the development of non-nuclear 'Special Forces' and, eventually, to war in Vietnam.

Sources and Texts: For Kissinger's proposals for limiting nuclear war in Europe see his Nuclear Weapons and Foreign Policy (New York 1957). Many of the proposals in this book were repudiated by Kissinger in The Necessity for Choice (New York 1961). Another important contribution to limited nuclear war theory is Robert Osgood, Limited Nuclear War (Chicago 1957).

The idea that nuclear weapons might be more often used to make second strike threats than to spearhead first strike attacks goes back to 1946; see Jacob Viner, 'The Implications of the Atomic Bomb for International Relations', in: Proceedings of the American Philosophical Society 90, 1(1946), Bernard Brodie, The Absolute Weapons, op. cit., and Hap Arnold's essay in One World or None, edited by Dexter Masters and Katherine Way (New York 1946).

The most careful analysis of the requirements of deterrence published in the 1950's is The Requirements of Deterrence, written by William Kaufmann in 1954 and first published in Military Policy and National Security (Princeton/N.J. 1960). Concern about the vulnerability of American air bases is publicly advertised in Alfred Wohlstetter, 'The Delicate Balance of Terror', in: Foreign Affairs 37,2 (1958/59). The Navy's proposals for 'Minimum Deterrence' and their fate are discussed in Rosenberg, The Origins of Overkill, op. cit. The problem of responding to an limited nuclear attack which avoids American cities received its first public discussion in Bernard Brodie, Strategy in the Missile Age (Princeton/N.J. 1959). The thinking of RAND strategists in the 1950's about the problems of nuclear war is described in Fred Kaplan, The Wizards of Armageddon (New York 1963). Kahn's views in 1960 are expressed in On Thermonuclear War (Princeton/N.J. 1960). For a violent but not untypical negative reaction to Kahn's book see James R. Newman's review of On Thermonuclear War in Scientific American (March 1961). Newman wrote: "This is a moral tract on mass murder: how to plan it; how to commit it; how to get away with it; how to justify it."

A major collection of articles expressing the opposition of strategists and political scientists to Massive Retaliation circa 1960 is Donald Brennan, Arms Control, Disarmament, and National Security (New York 1961).

## 6. Moral Criticisms of Massive Retaliation

Though the details of American nuclear war-fighting plans in the 1950's were top secret, their general features could be inferred from an examination of American weapons and a survey of the statements of John Foster Dulles. By late 1954, moral criticism of the direction of American (and Soviet) nuclear weapons policy began to be voiced, for example, in a Christmas 1954 radio message by Bertrand Russell and in a document, signed by Russell, Albert Einstein and others scientific luminaries.

The first wave of criticisms centered on the notion of nuclear war as an instrument of policy. Stressing the immense damage expectable from nuclear war, Russell and others argued that no gain from the standpoint of national interest could compensate for the losses suffered by mankind as a result of nuclear war. The discovery of radioactive fallout and its effects drove home the point that nuclear wars could injure future generations and many came to believe that whatever nation (if any) won a nuclear war,

mankind at large would be the loser. The threat of nuclear weapons to mankind at large demanded, more than ever before, that nations resolve their differences by peaceful means. Furthermore, the gross immorality of using nuclear weapons demanded, some argued, that nations that possess them simply give them up, even if their potential enemies did not follow suit.

Sources and Texts: The text of the Russell-Einstein statement is reprinted in B. Russell, Has Man a Future? (London 1961). Russell's views on nuclear warfare are expounded at greatest length in his Common Sense and Nuclear Warfare (New York 1959). One book which greatly influenced thinking about radioactivity and the long term effects of nuclear war is Linus Pauling, No More War! (New York 1958). Few American authors endorsed the position of unilateral nuclear disarmament (UND), but UND was a commonly defended position in Britain after the founding of the Committee for Nuclear Disarmament in 1958. One eloquent defense of unilateral nuclear disarmament in the late 1950's is Philip Toynbee's The Fearful Choice (Detroit 1959). Of all the books about the effects of nuclear war written in the late 1950's, none was more influential than Nevil Shute's novel On the Beach, which assumed, and convinced many, that a nuclear war must have the effect of extinguishing the human species.

In 1960 the United States launched the first nuclear ballistic missile submarine, and each nuclear power began to issue announcements, or at least innuendoes, that it did not intend to use strategic nuclear weapons first, but that it was prepared to use them second, in response to a nuclear attack. Beginning in the late 1950's, then, moral analysts began to turn their attention to the problem of the moral permissibility of second strike threats. These threats, as the philosophy of massive retaliation dictated, were rightly presumed to be threats of massive second strikes.

One point on which many of the moral critics agreed was that, if deterrence failed, it would not be morally permissible to launch a second strike. The whole point of threatening a second strike is to prevent a first strike; if the first strike occurs, the second strike serves no pupose besides useless revenge. But, if it was not morally permissible to launch a nuclear second strike, was it morally permissible to threaten to launch such a strike?

Many thinkers who analyzed this problem in the early 1960's concluded that if second strikes were not morally acceptable then threats to launch second strikes were not morally acceptable either. In England, professional philosophers like G.E.M. Anscombe, the eminent logician Peter Geach, and Anthony Kenny, all argued that if X is an evil act, then forming an the intention to do X must also be evil. From this it followed that if it is immoral to launch a nuclear second strike, it must also be immoral to intend to launch such a strike. Now, since the philosophers all agreed that launching a second strike would be immoral, they agreed that

threatening to launch a second strike must also be immoral. Nuclear deterrence, like nuclear war, stood morally condemned.

In the United States, the Catholics divided on the moral acceptability of deterrence, but the prominent moral theologian, John Courtney Murray, condemned Massive Retaliation in the influential article, Theology and Modern War, published in 1959. By far the most penetrating critique of second strike threats of the 'massive retaliation' variety came from the Protestant ethicist Paul Ramsey, in his War and Christian Conscience, published in 1961. Like the British philosophers, Ramsey concentrated his attention on the intention to launch a second strike against Soviet cities in response to a Soviet first strike against the United States. Such an act, Ramsey wrote, (p. 170) "would be the most unloving act in the history of mankind", violating standards of proportionality and discrimination developed over centuries in the theory of just war. But if the second strike is unloving, the threat to issue such a strike must be unloving as well. As Ramsey and many others pointed out in these years, a threat to kill Soviet civilians in order to prevent an attack on oneself uses other human beings as means, contrary to the moral rule that people should always be treated as ends in themselves. The use of people outside the United States to secure the safety of Americans, many argued, is like seizing hostages in order to secure some goal. But Ramsey argued that it is always immoral to seize hostages, even for the purpose of saving innocent life. If small babies were tied on the bumpers of automobile, people would drive more carefully and, on balance, the greater number of innocent lives would be saved. But that would not make it morally permissible to tie babies on to the bumpers of automobiles.

Sources and Texts: The criticisms of deterrence by Anscombe Geach, and other British Catholics are collected in Nuclear Weapons: A Catholic Response, edited by Walter Stein (London 1961). The American Catholics debate on massive retaliation in the late 1950's, kicked off by John Courtney Murray's 'Theology and Modern War', in: Theological Studies 20 (1959) can be studied in two anthologies, Morality and Modern Warfare, edited by William J. Nagle (Baltimore 1960) and The Moral Dilemmas of Nuclear Weapons, edited by William Clancy (New York: Council on Religion and International Affairs, 1961). Ramsey's War and the Christian Conscience was published by the Duke University Press (Durham/NC 1961).

## 7. McNamara and Flexible Response

The Kennedy administration arrived in the White House in 1961 determined to rectify the flaws in Massive Retaliation - at least the strategic flaws. Secretary of Defense McNamara set Daniel Ellsberg and others to rewriting the Eisenhower SIOP, and the new plan was ready by the end of the year. The new plan, named SIOP 63 for its year of activation, replaced the single strategic option of the earlier SIOP with graduated options for the

use of nuclear weapons, from a strike against enemy strategic nuclear weapons (and nothing else) to a strike against enemy military forces, strike against support facilities, a strike against economic and industrial targets, and a strike against enemy cities. Targeting plans were revised to connect each option with a differentiated group of targets, although a complete separation of targets for each attack option proved to be technically impossible. The strategy behind the new attack plans was called 'Flexible Response'. When McNamara sketched the plan in a public address at Ann Arbor, Michigan in June 1962, he mentioned the earlier attack options while neglecting to mention the later ones:

"The U.S. has come to the conclusion that to the extent feasible basic military strategy in a possible general nuclear war should be approached in much the same way that more conventional military operations have been regarded in the past. That is to say, principal military objectives, in the event of a nuclear war stemming from a major attack on the Alliance, should be the destruction of the enemy's military forces, not of his civilian population."

Most strategists believed that McNamara's SIOP provided the United States with a more credible form of deterrence than massive Retaliation had provided. In the event of a less-than-total strike against the United States, McNamara's SIOP provided for a less-than-total response, and many felt that a less-than-total response was a more rational and therefore more likely response than Massive Retaliation. Others felt that McNamara's plans still had not solved the central puzzle of nuclear deterrence. Even with the 'flexible' second strikes of the McNamara SIOP, nuclear second strikes in almost all circumstances would still be suicidal for the United States. A threat to launch a second strike, therefore, was a threat to commit suicide, and some strategists felt that threats to commit suicide were still incredible threats.

In his Ann Arbor address, McNamara made it appear that the United States had given up its intention to deter a Soviet attack on the United States by planning to launch a nuclear counterattack against Soviet cities. The truth was that the United States had only given up its plan to attack Soviet cities in the event of a Soviet nuclear attack that spared American cities. It still planned to attack Soviet cities after a Soviet attack that hit American cities. Nevertheless, many critics accepted McNamara's 'no cities' announcement at face value and had concluded that the United States had shifted, in all of its strategic targeting, from the 'countervalue' pattern of nuclear targeting (associated with Massive Retaliation) to a new pattern of 'counterforce' targeting (associated with Flexible Response). Some moral analysts began to debate whether the new strategy (as it was construed) removed the moral objections that had been raised against Massive Retaliation.

Ramsey was confident that McNamara and his team had indeed removed most of the problems. In Ramsey's view, under Flexible Response, innocent people in the Soviet Union (and elsewhere) were no longer held as hostages to American strategic weapons. True, if the United States used its nuclear weapons to launch a counterattack, many innocent people in the Soviet Union would die. But by Ramsey's standards the deaths of people that would result from an American counterforce nuclear attack were side-effects that fell outside the intentions of the plan. The deaths of Soviet civilians in an American nuclear attack, under Flexible Response, were regrettable concomitants of a necessary policy of national self-defense: creating risks for civilians was no longer the means by which the United States sought to obtain its security. Just War theory, Ramsey felt, could tolerate deterrence in this form.

Other moral philosophers who subscribed to the same moral principles as Ramsey were not so sure that nuclear deterrence had suddenly become morally respectable. After all, if the Soviet Union did attack the United States, it would still be a bad idea for the United States to launch a nuclear counterattack - even a limited counterattack - because many innocent people would die in such an attack, and the gain to the United States from a limited counterattack would probably be slight: it might deter further attacks, but then again it might provoke further attacks. When the British Catholic philosopher Anthony Kenny analysed the permissibility of nuclear deterrence in 1965, he still found that a nuclear second strike, even a counterforce second strike, would be an immoral action. Kenny proceeded to argue that if counterforce second strike were immoral, the intention to launch counterforce second strikes must be immoral as well.

Sources and Texts: The best accounts of the transition from Massive Retaliation to Flexible Response are Desmond Ball, Politics and Force Levels: The Strategic Missile Program of the Kennedy Administration (Berkeley/CA 1980) and Desmond Ball, Targeting for Strategic Deterrence, op. cit. See also the accounts in Fred Kaplan, The Wizards of Armageddon, op. cit., Peter Pringle and William Arkin, SIOP: The Secret U.S. Plan for Nuclear War (New York 1984). For a memoir by one of the principal architects of Flexible Response, see William Kaufmann, The McNamara Strategy (New York 1964). For arguments that nuclear deterrence remained irrational even after the McNamara reforms see Philip Green, Deadly Logic (Columbus/Ohio 1966). Paul Ramsey's endorsement of McNamara's counterforce deterrence is registered in Paul Ramsey, The Just War (New York 1968). Anthony Kenny's arguments are in the appendix of the second edition of Walter Stein's Nuclear Weapons: a Christian Response (London 1965).

## 8. Arms Races and Arms Control

The rapid development of American strategic forces, principally in the form of strategic bombers and hydrogen bombs, was challenged by the development of the hydrogen bomb in the Soviet Union and by the Soviet introduction of intercontinental ballistic missiles in 1957. Though the United States had in these years a substantial lead in strategic forces, a number of strategic thinkers in 1957 began to question the wisdom of indefinite expansion in strategic arsenals. The surprisingly rapid development of nuclear weapons in the Soviet Union and the orbiting of Sputnik made it obvious, at least to some, that the United States could not expect to maintain any permanent lead in nuclear weapons technology. It was also obvious that the United States could not maintain any permanent lead in numbers of nuclear weapons and nuclear weapons launchers. But if no lead in quality or quantity could be maintained, what was the point of acquiring more and more weapons? In these circumstances, many argued, the sole reason to acquire new weapons would be to secure second strike capacity - the ability to counterattack in the event of a first strike. The Navy had pointed out as early as 1958 that second strike capacity could be secured against massive strikes with a small fleet of nuclear submarines. For some, simple budgetary considerations argued that the United States should forgo the acquisition of any weapons beyond the invulnerable minimum needed for second strike.

I have already described how the Navy's scheme for Minimum Deterrence was politically sabotaged by the American Air Force. But in 1961, demands for Minimum Deterrence and efforts at arms control were equally undercut when McNamara installed the new doctrine of Flexible Response. SIOP 63's multiplication of attack options and the targeting of well defended military facilities required substantial increases in both the size and quality of American strategic forces. McNamara maintained the American B-52 bomber fleet, built up the Minuteman ICBM force from 0 to 1000 and increased the American force of submarine launched ballistic missiles to 656. Many analysts wondered whether these vast increases in nuclear weaponry were really necessary, even if part of the rationale for these increases in weapons was an attempt to avoid attacks on Soviet cities. McNamara attempted to justify the increases in 'cost-benefit' terms, arguing that increases in American weaponry were justified up to the point where increased expenses for weapons could not be justified in terms of increasing destruction wrought by those weapons in an attack on the Soviet Union.

In 1967, when American strategic forces reached the quantitative targets set by McNamara's cost-benefit analyses, the great expansion leveled off. The United States had a secure second strike capacity, and it was only a matter of time before the Soviet Union developed the same capacity as well.

Since increases in weapons could not alter these facts, the stage was set for negotiation of bi-lateral arms control agreements.

In the years preceding the SALT I agreements, a number of American scholars attempted to analyze the East-West confrontation in terms of the mathematical theory of games, invented by John von Neumann in 1923. One important game theoretical distinction is that between games in which gains for one player are counted as losses for another ('strictly competitive' or 'zero sum' games) and games in which gains for one player are not necessarily losses for the other ('partially cooperative' or 'variable sum' games). The study of zero sum games had already proved itself fruitful in the study of convoy formations in World War II. In the Cold War years immediately following World War II, it was common for observers to analyze East-West relations in zero sum terms, inferring that anything good for the Soviet Union must necessarily be evil for the United states (a habit revived by analysts in the Reagan administration). In the late 1950's a number of game theorists noted that the United States and the Soviet Union were not engaged in total war and that it might be better to analyze East-West relations in variable sum rather than zero sum terms.

Two variable-sum games that proved useful in analyzing nuclear issues are 'Chicken' and 'Prisoner's Dilemma'.

'Chicken' is named for a game in which each player speeds his automobile head-on towards the other player's car. The first player to swerve to safety is humiliated and called 'chicken'. Chicken is thought by many to represent the structure of nuclear deterrence, in which nuclear nations approach each other and make nuclear threats, the implementation of which both sides would regret. (The implied American threats during the Cuban Missile crisis in 1962 are thought to have this character.) The sad fact about Chicken is that it seems to reward irrationality: the player who refuses to swerve, or who ties down the steering wheel so that he cannot swerve, always wins out over the reasonable player that swerves away from danger. Some theorists, taking the chicken analogy seriously, argued that successful American deterrence required that the United States adopt actual or seemingly irrational postures towards the Soviet Union. Such suggestions, popular in the strategic community, never caught hold among American military leaders. And outside the strategic community there were many who argued that the morally appropriate action is not to win the Chicken game but to avoid playing it.

A 'Prisoner's Dilemma' is a variable sum game in which each of two players faces a choice between two options (call them option C and option D) and four outcomes (DC, CC, DD, CD) such that each player prefers DC to CC, CC to DD, and DD to CD (where the first member of each pair represents the first player's choice, the second his opponent's choice). Given

these preferences, it is better for both choose C than if both choose D, but better for each if he chooses D, regardless of what the other does. In arms race situations when each nation can duplicate the arms acquisitions of the other, each nation would prefer to disarm rather than arm, but each nation would prefer to arm regardless of what the other does. (Each nation wants to be armed if the other arms, for purposes of defense, and wants to be armed if the other is disarmed, to be strong at the bargaining table.) Thus arms races are Prisoner's Dilemmas: both nations are better off if they manage to cooperate, but each is tempted to arm and exploit any tendencies to cooperation exhibited by the other side.

To stop the nuclear arms race is to solve a Prisoner's Dilemma. But if each player is rational, in the sense of trying to maximize the satisfaction of his interests, there is an irresistable argument for acquiring arms. Work on the Prisoner's Dilemma in the early and middle 1960's seemed to find no way out of the impasse. But those who developed arguments on moral principles pointed out that on well known moral grounds, we should do unto others what we wish them to do unto us. By that principle, the correct choice in the Prisoner's dilemma is C, not D; in an arms race, disarm, not arm.

Sources and Texts: Persons interested in game theory should consult Duncan Luce and Harold Raiffa, Games and Decisions (New York 1957). The earliest book to stress that U.S. Soviet relations are not zero sum games is Anatol Rapaport, Fights, Games, and Debates (Ann Arbor/MI 1960). The relation between Chicken and nuclear deterrence was first noticed by Bertrand Russell in Common Sense and Nuclear Warfare, op. cit. The notion that the deliberate introduction of lack of control and the use of "threats that leave something to chance" was explored in the late 1950's in very influential papers by Thomas Schelling, collected in The Strategy of Conflict (Cambridge/MA 1960). For explicit application to deterrence and arms control see Schelling's later Arms and Influence (New Haven 1965). One early study of international relations uses game-theoretical models is Glenn Snyder, 'Prisoner's Dilemma and Chicken Models of International Politics', in: International Studies Quarterly 17 (March 1961). The state of mid-60's knowledge of the Prisoner's Dilemma is found in Anatol Rapaport, Strategy and Conscience (New York 1964) and Anatol Rapaport and Albert M. Chammah, Prisoner's Dilemma (Ann Arbor 1965).

## 9. ABMs and MIRVs

Once the Minuteman and Polaris forces had reached target levels, McNamara set out to convince the American public that no further increases in strategic weapon systems were necessary. In a number of well-known public addresses, McNamara noted that American missile silos were hardened and American nuclear submarines were invulnerable. Should the Soviet Union, Pearl-Harbor style, launch all of its strategic weapons in a surprise attack on the United States, enough American strategic weapons would survive to destroy one quarter of the Soviet population and one half

of its industry. To some observers, McNamara's remarks on destroying one quarter of the Soviet population were indications that the government had chosen to abandon the Flexible Response policy of 1962 and had somehow returned to the policy of Massive Retaliation. Others thought that McNamara was mentioning the destruction of one quarter of the Soviet population not as part of 'action policy', i.e., military plans, but as part of 'force acquisition policy'. (The Pentagon distinguishes four defense policies: action policy, acquisition policy, arms control policy, and declaratory policy, i.e. what the public is told about the other three policies. It is indicative of American technical genius that these four policies rarely coincide.) The truth is that McNamara was indeed referring to action policy, but only that part of action policy that would be implemented in the case of an all out Soviet attack on the United States. McNamara's later speeches represented such a striking turnaround from his earlier public presentations that commentators gave a new name to American strategic policy from 1968 to 1974: Assured Destruction.

The McNamara limits on strategic forces did not sit well with the armed services, especially the Air Force, who were particularly infuriated by McNamara's decision no to proceed with a new strategic bomber to replace the B-52. As technical possibilities inexorably presented themselves in the 60's, the armed services represented each innovation as necessary for national security. Two particularly controversial innovations were anti-ballistic missiles, or ABMs, and Multiple Independently Targeted Re-Entry vehicles, or MIRVs. (The ABM is a missile designed to shoot down an incoming intercontinental ballistic missile. MIRVs are vehicles attached to ICBMs or SLBMs such that hydrogen bombs from a single missile can be delivered accurately to widely separated targets.)

The controversy about the ABM was a mixed scientific and moral controversy. The scientific controversy concerned whether or not any ABM could actually succeed in blunting an incoming missile attack before American cities were destroyed (assuming that the incoming attack was directed at cities.) No one claimed that all incoming missiles could be struck down; the problem was whether or not enough could be knocked down to make a strategic difference. Advocates argued that if a single incoming missile was struck down, millions of American lives would be saved. Detractors noted that if a single missile got past an ABM defense, millions of American lives would be lost.

ABM. On the moral scales, advocates of the ABM argued that it was morally proper to try to save American lives from Soviet weapons, that threatening the Soviet population with second strikes was immoral if an alternative method for protecting the American population was available, and that the traditional theory of just war sanctioned defensive measures, like ABM, over offensive innovations like ICBMs. Detractors argued that

the moral advantages of defense could only sanction defenses that actually worked, and that ABM diverted money from legitimate social causes. But the most important moral argument advanced against the ABM was that the best guarantee of peace was the ability of each side to retaliate decisively in the event of a first strike. Since an American ABM would erode Soviet capacity to deliver a retaliatory strike, the ABM threatened the stable peace-through-deterrence that was emerging in the late 1960's.

Despite the problems, the Soviets in 1967 set about constructing an ABM system around Moscow. Since in the United States it is never politically permissible for the Soviets to have anything that the United States does not have, Lyndon Johnson in the end decided with a small ABM, for the purpose, according to an announcement that stupefied the critics, of blocking incoming Chinese ICBMs!

MIRV. The decision to construct an ABM provoked a nationwide public debate. The decision to install MIRVs on American missiles, a far more serious armaments decision, was debated only among specialists.

Advocates of MIRV argued that the time that these great increases in American nuclear warheads did not threaten the Soviet Union with an American first strike. Soviet submarines remained invulnerable, enabling the Soviets to inflict great damage on the United States despite the best American efforts to wipe out Soviet strategic weapons in an American first strike. (Interestingly, many of the advocates of MIRV were the first to argue, six years later, that the deployment of Soviet MIRVs did pose a threat of a Soviet first strike against the United States.) But the installation of MIRV would allow for more sophisticated war plans, and would keep the United States ahead of the Soviet Union, and therefore in a position to not be bullied by Soviet power.

Those who opposed MIRV argued that the installation of MIRVs upset the strategic balance so expensively arrived at by the late 1960's. If a missile carries MIRVs, then one missile can destroy many missiles, and an American sneak attack might wipe out the bulk of the Soviets' long range missile force. Analogously, when the Soviets got around to installing their own MIRVs, American long range missile forces, at least those placed based on land, would be at peril. Thus, the threat posed by MIRVs would encourage each side to seek out and destroy enemy MIRVs before being assaulted by them, and would pressure each side to fire off its own MIRVs before they are destroyed on the ground. In short, MIRV was 'destabilizing', provoking an arms race and increasing the risk of nuclear war. For the detractors of MIRV, nuclear peace was the highest goal, and strategic stability, without MIRV, was the shortest road to peace.

Though McNamara had set rough limits on the number of launchers, he set no limits on the quality of American strategic forces. When the opportunity came to install MIRV, McNamara endorsed it, claiming that MIRV would enable the United States to overwhelm the new Soviet ABM system. Since the Soviet ABM was hardly capable of blocking anything, McNamara's real reasons must have lain elsewhere. The fact was that the installations of MIRV was completely consistent with the philosophy of Flexible Response, which McNamara had never abandoned. Thus in the early 1970's the Minuteman III (three warheads) began to replace the Minuteman II (one warhead) and the Poseidon (fourteen warheads) began to replace Polaris A3 (three warheads, not independently targetable). While the ABM debate raged from 1968 to 1971, the quiet installation of MIRVs caused an explosive growth in the number of deliverable American nuclear warheads.

Sources and Texts: McNamara's later views are well represented in his collection, The Essence of Security (New York 1968). For the 'transition' from Flexible Response to Assured Destruction see Ball, Targeting for Strategic Deterrence, op. cit. For support of the American ABM see Donald Brennan, 'The Case for Population Defense', in Why ABM? edited by John Holst (New York 1969) and 'The Case for the ABM', in: Anti-Ballistic Missile: Yes or No? (New York 1969). For an attack on the ABM see Richard Garwin and Hans Bethe, 'Anti-Ballistic Missile Systems', in: Scientific American (March 1968). McNamara's decision to build the ABM is analyzed in James Roherty, Decisions of Robert S. McNamara (Coral Gables/Fla. 1970). Sources for the MIRV debate are scarcer, but one important opposition statement is Herbert York, Race to Oblivion (New York 1970).

## 10. The 70's, and SALT

In the early 1970's, American thought about nuclear weapons was pushed in two contradictory directions. On the one hand, the development of great nuclear submarine fleets on both sides made it clear that each side would maintain second strike capacity for many years to come. Further purchases of weapons could not alter this fact, and further purchases could not buy strategic superiority. ("What in the name of God is strategic superiority?" Henry Kissinger remarked at a press conference in 1973, "What can you do with it?") Thus the United States and the Soviet Union had every reason to negotiate limitations on the growth of offensive forces, and these negotiations began in 1969. On the other hand, the Flexible Response doctrine required that the United States target Soviet nuclear and conventional military forces, and as Soviet passive defenses grew better, Flexible Response required more and more sophisticated weaponry on the American side. The result of these two contrary pressures was (1) an agreement to limit offensive forces, coupled with a limitation on ABM systems so that strategic offenses could continue to overcome any strategic defense (SALT I and the ABM Limitation treaty, signed 1972), and (2) a

rapid qualitative improvement of American strategic systems, consistent with the launcher limitations imposed by SALT. (1) resulted from the search for strategic stability and the desire to escape the Prisoner's Dilemma of the nuclear arms race. (2) resulted from the putative strategic and moral advantages of Flexible Response.

The advantages of the SALT and ABM treaties were so manifest to the majority of Americans that few genuine arguments were raised against it in the United States. The American right wing complained bitterly that the Soviets, in plain numbers, were alloted more strategic launchers than the United States, but in fact the United States gave up nothing that it was planning to build, and whatever numerical advantages the Soviets had in launchers were cancelled out by tremendous American preponderance in strategic bombers. By agreeing to limit ABMs, the United States stopped spending on a system that would probably never work.

Had the superpowers escaped the force of the Prisoner's Dilemma? Moralists said the problem had been overcome by the development of trust between the superpowers, and that the development of mutual trust signified a moral advance in international relations. But the American right objected that any agreement based on trusting the Soviets was bound to be subverted and bound to be bad for the United States. If the race in strategic arms were a Prisoner's Dilemma, then the fears of the right were not completely irrational, since parties that cooperate in a Prisoner's Dilemma feel great pressure to defect from cooperation before the other party defects. In an analysis published by the present author in 1975, I suggest that the ability of the superpowers to sign and stick to the provisions of SALT I is proof that by 1972 the nuclear arms race had ceased to be a Prisoner's Dilemma. In a genuine Prisoner's Dilemma, when two parties are co-operating, the benefits of unilateral defection (to the defector) are greater than the benefits to each of mutual cooperation, while the penalty of being the second to defect is worse than the penalty for mutual noncooperation. In 1972, the advantages of defecting from cooperation (building more offensive missile launchers, building an ABM before the other side does) were in fact less than the benefits of mutual cooperation, while the penalty for being second to defect (not having as many missiles than the opponent, not having an ABM when the opponent has one) were in fact less than the penalties to both if both built more ABMs and more offensive missiles.

Sources and Texts: There are many accounts of the SALT I negotiations and agreements, for example, John Newhouse, Cold Dawn: the Story of SALT (New York 1973). Douglas Lackey's analysis of Prisoner's Dilemma and SALT is in 'Ethics and Nuclear Deterrence', in: Moral Problems, edited by James Rachels (New York 1975).

## 11. Schlesinger and the Rise of Counterforce

The great increase in nuclear warheads brought about by the introduction of MIRVs in the early 1970's forced a change in the nuclear war fighting plans of the United States. Every warhead had to have a target, and for a while it appeared that there might be more American warheads than Soviet targets. (In those years interest in Chinese targets was on the decline.) Now, in the 1970's while the number of cities in the Soviet Union remained constant, the number of Soviet strategic weapons, especially ICBMs, was rapidly increasing. American nuclear war planners found it was natural to target their new warheads on the new Soviet missile silos. By 1972, so many targeting changes had been introduced by the proliferation of American warheads that strategic specialists called for a revision in the entire nuclear war-fighting plan.

The time was ripe for a new war plan, warheads or no warheads. Compared with the Eisenhower SIOP of 1960, the McNamara SIOP of 1962 was relatively flexible, giving the President five nuclear attack options instead of just one. By 1972, however, experts were complaining that the McNamara SIOP was too 'inflexible', relative to the technical possibilities available in the 1970's. The smallest attack option in the McNamara SIOP directed 2000 megatons of warheads at targets in the Soviet Union, so that in terms of destruction, the 'smallest' attack in the McNamara war plan was a very massive attack indeed. Furthermore, though the earlier attack options in the McNamara SIOP made some attempt to avoid the maximum possible destruction of life and property in the Soviet Union, the earlier options were directed at targets that were often in or near cities. Thus, even if the 'city avoiding' options were exercised, many Soviet cities would suffer near total destruction nevertheless. Such effects were criticizable from the moral point of view, as attacks on the innocent, and criticizable from the strategic point of view, as it gave the Soviets no reason to spare American cities in the hope that their own cities might be spared.

The revisions in the McNamara SIOP were introduced between 1972 and 1974. Since the 1974 SIOP (named SIOP 5) corresponds closely to the current nuclear war-fighting plans of the United States, details about SIOP 5 are hard to come by. (The current American SIOP, instituted 1 October 1983, is only SIOP 6.) But from circumstantial evidence, it seems that the 1974 SIOP differed from the McNamara SIOP in at least three respects.

(1) The new SIOP gave the President a far greater range of attack options than the McNamara SIOP. In particular, the new SIOP allowed the President to launch a small strike in response to a small strike, something not easily done with the 1962 plan. These small strikes were called 'limited nuclear options', or LNOs.

(2) In the event of a large scale nuclear exchange between the United States and the Soviet Union, instead of the all-out 'spasm' attack described in the McNamara SIOP, the new war plan called for an attack intended "to destroy the Soviet Union as a 20th century society". Targets were chosen with the intent of destroying the entire industrial and economic base of the Soviet Union. Though tens of millions of persons would die in such an attack, many fewer people would be killed by such an attack than the number of people in the Soviet Union who would be killed if the United States chose an attack plan intended to maximize death and destruction.

(3) Cities and certain command and control centers are placed - so the sources say - "on withhold". It is difficult to interpret what the words "on withhold" mean. Since the phrase is new, it implies that there is some extra measure of protection given to cities in the 1974 SIOP that was not present in the 1962 SIOP. An optimistic interpretation might be that, in the event of a nuclear war, no American nuclear weapons will land on Soviet cities unless some special, extraordinary command is issued by the President and the Secretary of Defense. On the other hand, a more pessimistic interpretation might be that "placing cities on withhold" means merely that no American nuclear weapons will fall on Soviet cities unless it is aimed at some military or industrial target within the city.

The trend to counterforce established in the 1974 SIOP continues down to the present, guiding the thought of American war planners despite the deep differences in attitude towards defense issues exhibited by Presidents Ford, Carter and Reagan. President Ford sanctioned the new SIOP in 1974. Pursuing the counterforce trend, the Carter administration improved the accuracy and force of the Minuteman warhead, supported the development of the MX missile, (a land based ICBM intended to replace a large part of the Minuteman force) and pursued the development of the Trident submarine, a submarine intended to replace the Poseidon and one which would eventually carry the powerful and accurate D-5 missile. In decisions the significance of which was little grasped at the time, Carter vigorously endorsed the development of three sorts of cruise missiles, and sanctioned a new intermediate range missile, the Pershing II. Both the cruise and the Pershing II had 'terrain-countour-matching' guidance systems which made them the most accurate of all American strategic launchers.

One way to grasp the import of the new American strategic systems is to consider the 'k-factors' of the new generation of weapons. The 'k-factor' is an index which indicates the ability of a strategic weapon to destroy a hardened target, like an ICBM missile silo. (Mathematically, the k-factor is the horizontal explosive force of the missile divided by the square of the missile's accuracy.) The k-factor of the Minuteman III is 34; the k-factor of its successor, the MX is 204; the k-factor of the Poseidon C-3 is 2; the k-factor of its successor, the D-5, is 24. The k-factor of the cruise

missile and the Pershing II is approximately 1,300. Since the bulk of Soviet strategic weapons were in land-based ICBMs in fixed locations, and since the Americans, by 1980, had the ability to locate and track the majority of Soviet strategic submarines, the new American weapons systems gave the President of the United States the ability to destroy a substantial percentage of Soviet strategic weapons, should he choose to launch a massive nuclear first strike.

The Carter administration consolidated all of these developments in a nuclear war plan described in Presidential Directive 59 (PD-59), issued 25 July 1980. PD-59 gave Presidential blessing to the concepts of counterforce targeting and limited nuclear options. But the new directive not only required that the United States have a specific nuclear response for each act of Soviet aggression, it also required that the United States have sufficient weaponry to prevail at each level of violence in possible nuclear war. This new requirement, called Escalation Dominance, was allegedly designed to improve American deterrence. For example, should the Soviets find themselves losing a war in which only conventional weapons have so far been used, Escalation Dominance by the United States would prevent them from attempting to win the war by escalating to the use of tactical nuclear weapons. This combination of counterforce targeting, limited nuclear options, and escalation dominance was named 'The Countervailing Strategy'. The costs of the Countervailing Strategy were considerable. The Carter Administration's projected military budget for 1981-85 was one trillion dollars.

Despite the immense expenditures for weapons planned by the Carter administration, the American public in 1980 was gripped by the feeling that the United States was growing progressively weaker in the face of its adversaries. The oil price increases of 1974, the fall of Saigon in 1975, Soviet-Cuban adventures in Africa in 1978, the seizure of American hostages by Iranian students in 1979, and the Soviet invasion of Afghanistan that same year, all combined to give Americans a sense of helplessness in the face of world events. Furthermore, for over four years numerous American right wing political and religious organizations had been issuing warnings about a 'massive nuclear arms build-up by the Soviet Union'. The Soviet build-up was in fact nothing but the MIRVing of Soviet ICBMs, parallel to the MIRVing of American ICBMs in the early 1970's, but many Americans felt outgunned nevertheless. Their overwhelming support for Reagan in the election of 1980 was a mandate for military expenditures beyond Carter's $1 trillion.

Reagan endorsed and funded all the strategic programs supported by Carter - the Trident, the MX, the Pershing II and the three types of cruise missiles - and revived the B-1 bomber, the one strategic weapons program that Carter had dropped. In nuclear strategy, he accepted (or

his advisors accepted) the trend to counterforce, the development of limited nuclear options, and the requirement of escalation dominance. But Reagan's Secretary of Defense, Caspar Weinberger, added one further requirement to the heavy burden of deterrence. Schlesinger had demanded that the United States have a specific military response to every sort of initial Soviet aggression. Carter had demanded that the United States have a specific reply at every level of violence. Weinberger demanded that the United States be able to 'prevail' at every stage of a multi-stage nuclear war. For example, if the Soviet Union were losing on day N of an extended nuclear war, they must be persuaded by American weaponry that they have no chance of winning by extending the war to some later day. In October 1981, the Readan administration issued National Security Decision Directive 13 (NSDD-13), calling for the creation of command and control facilities capable of directing forces in nuclear wars lasting for as long as sixty days. Needless to say, planning and preparing for a 60 day nuclear war, and developing plans that would give the United States 'victory' in such a war, rather than merely assuring defeat for the Soviet Union, was a complicated process, and attempts to meet the Weinberger specifications required unprecedented increases in military expenditures. The price tag for the Reagan version of the Countervailing Strategy was $1.5 trillion in the first five years.

Sources and Texts: For strategic criticisms of the 'inflexibility' of the McNamara SIOP, see Richard M. Nixon, U.S. Foreign Policy for the 70's: A New Strategy for Peace (Washington/D.C. 1970). For a moral critique of the McNamara SIOP which makes it sound as if the 1962 SIOP was an exercise in Massive Retaliation and that McNamara was a protege of John Foster Dulles, see Fred Iklé, 'Can Nuclear Deterrence Last Out the Century?', in: Foreign Affairs 51,2 (1972/73). For developments between 1972 and 1974 see Desmond Ball, Deja Vu: the Return to Counterforce in the Nixon Administration (California Seminar on Arms Control and Foreign Policy, 1975) and Targeting for Strategic Deterrence, op. cit. For public announcement of Countervailing Response, see James Schlesinger, Report of the Secretary of Defense James R. Schlesinger on the FY 1975 Defense Budget (Washington/D.C.: Superintendent of Documents, 1974).
For developments in strategic doctrine during the Carter administration see Harold Brown, Report of the Secretary of Defense Harold Brown to the Congress on the FY 1980 Defense Budget (Washington/D.C.: U.S. Government Printing Office, 25 January 1979) (Note: in the 1970's the budget request from the U.S. Department of Defense to the U.S. Congress, the 'Annual Report' of the Secretary of Defense, became a useful source of information concerning the disposition of U.S. strategic forces and the strategic thinking of the Defense Department. In the 1980's the document was degraded into a propaganda exercise.) Tendencies to counterforce in the late 1970's are described and analyzed in Robert Aldridge, The Counterforce Syndrome (Washington/D.C.: Institute for Policy Studies, 1978). On behalf of President Carter it must be said that he combined support for counterforce programs with serious efforts at arms control. For the defeat of Carter's attempts at arms control by the American right see Strobe Talbott, Endgame (New York 1979) and Arthur Macy Cox, Russian Roulette: The Superpower Game (New York 1982).
For Presidential Directive 59 and its relationship to the Schlesinger

changes see William Beecher, 'U.S. Drafts New N-War Strategy vs. Soviets', in: Boston Globe (27 July 1980); Walter Slocombe, 'The Countervailing Strategy', in: International Security 6/1 (Spring 1981), and Milton Leitenberg, 'Presidential Directive 59 and American Nuclear Weapons Targeting Policy', Journal of Peace Research 18 (1981).
For the views of Reagan and his associates on nuclear war see Caspar Weinberger, Report of the Secretary of Defense Caspar W. Weinberger to the Congress on the FY 1984 Defense Budget (Washington/D.C.: U.S. Govt. Printing Office, 1 February 1982). For Weinberger's views on 'prevailing' in an extended nuclear war see Richard Halloran, 'Pentagon Draws Up first Strategy for Fighting a Long Nuclear War', New York Times, 30 May 1982, 'Weinberger Defends His Plan to Fight Long Nuclear War', New York Times, 10 August 1982. This article quotes Weinberger as saying "Show me a Secretary of Defense who's planning not to prevail and I'll show you a Secretary of Defense who ought to be impeached."
For general surveys of Reagan administration nuclear policy see Robert Scheer, With Enough Shovels: Reagan, Bush, and Nuclear War, (New York 1983), and Strobe Talbott, Deadly Gambits (New York 1984). The best account of current U.S. nuclear war fighting plans is William M. Arkin and Richard W. Fieldhouse, Nuclear Battlefields (Cambridge/MA 1985), Chapter 5, "Going To War".

## 12. Criticisms of the Countervailing Strategy

The new counterforce programs - the MIRVed Minuteman, the MX, the Trident - were not without their critics. Some felt that the new systems might improve American deterrence but that the improvements were not worth the money. Other critics felt that the new systems were not only expensive but provided the United States with no improvements in deterrence over earlier systems. The most serious critics argued that the new programs substantially increased the chance of nuclear war. The following are typical criticisms of counterforce developments and the Countervailing Strategy as they accumulated from the late 1960's.

1. If a nation's primary goal is the maintenance of second strike capacity, (i.e. the ability to strike back after riding out a nuclear first strike), then survivability of strategic forces is essential. Survivability can be obtained in three ways: (a) concealment, (b) defense, and (c) dispersion. Now, the MX missile is larger than the Minuteman and the Trident submarine is larger than Poseidon. Hence, given the SALT limitations on total offensive forces, the MX and Trident programs marked a trend towards concentration of force, rather than dispersion. Supporters of the Trident program argued that the superior diving capacity of the Trident submarine made it easier to conceal; supposedly each submarine is more survivable even if the submarine force were smaller. Even if this (somewhat dubious) rationale is accepted for the Trident, finding a corresponding improvement in concealment for the land based MX missile is difficult. In its final years the Carter administration suggested that the MX be housed on railroad cars in long underground tunnels, a remedy the desperation of which

simply highlighted the strategic deficiencies of the MX. The new counterforce weapons were simultaneously threatening and vulnerable.

2. For many, the introduction of counterforce systems signified that the United States was more interested in 'winning' nuclear wars than in preventing them from starting. Critics frequently posed the question: how were the new counterforce weapons to be used? Were they to be used only to retaliate against nations that launched nuclear attacks on the United States? Or were they to be used in preemptive first strikes by the United States against its enemies? To many critics it seems that the new counterforce weapons were more appropriate to a first strike strategy than to a second strike strategy. After all, the new weapons were relatively more vulnerable, and vulnerability is not a problem only if one intends to use the weapons first, rather than second. And what was the point in the extreme accuracies of the new weapons, and their 'counterforce' pattern of targeting, if one intended to strike second? Striking second, the new weapons would crash on empty missile silos in the Soviet Union. High accuracy and counterforce targeting only make sense against occupied missiles silos, and to strike occupied silos one must strike first.

Whether or not the new weapons were in fact part of an American plan for a possible preemptive strike against the Soviet Union, they could easily be perceived as part of a first strike plan. (Indeed, the introduction, in the mid-1970's, of the Soviet SS-18 and SS-19, which had 'silo-busting' capacity against the American Minuteman, was widely hailed by the American right as proof positive of Soviet plans for a preemptive nuclear strike against the United States.) The obvious way for the Soviets to protect their weapons against such a first strike threat is to set up plans to launch their missiles before the Americans did. The Soviets could also respond to the new American threat by shifting their missiles to a 'launch on warning' posture, rigging their missiles for launch as soon as an incoming American attack was identified. In turn, the Americans could respond to the Soviet responses by making plans to attack even sooner than the Soviets, and by putting their own missiles on 'launch on warning' status. Needless to say, the Soviet responses to the American threat and the American responses to the Soviet responses all made nuclear war more likely to occur. This is what the critics have in mind when they say that counterforce weapons and counterforce war plans are 'destabilizing'.

Did the United States have a plan for a first strike against the Soviet Union? Since one of the features of the Schlesinger SIOP was that it tried to develop 'options' for every conceivable contingency, it would be surprising if the SIOP did not contain some plans for a first use of strategic weapons against the Soviet Union. The important question is not whether or not there is a plan for a sneak attack on the Soviet Union, but what the probability is that the plan would be activated. Given the

immense uncertainties involved in such an attack, we can assume that the chances of activating any first strike plan are slim. At the same time, the development of the MX and the Trident certainly made it more likely that such a plan might be activated.

3. The Countervailing Strategy requires that the United States prevail at each level of violence and at each stage in an extended nuclear conflict. But these requirement presuppose that a nuclear war can be restricted to a given level of violence or a given duration. There are, however, many technical reasons for believing that nuclear war cannot be controlled and cannot be limited. In particular, it is difficult to control a nuclear war because the explosion of nuclear weapons will disrupt communications links between the military/political leadership and the nation's strategic forces. And it is difficult to limit a nuclear war because in a nuclear war limited to a particular level of violence, the losing side will always be tempted to retrieve victory from defeat by escalating to larger nuclear weapons and a higher level of violence.

The Countervailing Strategy also assumes that if a nuclear war is kept from escalating to the highest levels of violence, the level of destruction will be less than total. In the early 1980's, a number of studies suggested that the amount of damage from a 'small' nuclear war might be so great that the difference between the damage caused by a small nuclear war might approach than expected in a full scale nuclear war. In particular, if atomic weapons were targeted on forest areas or other places at which atomic explosions might produce large quantities of smoke, the resulting 'nuclear winter' might kill several billion people, the same number that the strategy of Massive Retaliation might have produced.

Sources and Texts: On the vulnerability of the new counterforce systems, see Hervert Scoville, MX: Prescription for Disaster (Cambridge/MA 1981). For the argument that the installation of counterforce weapons signals preparation for a nuclear first strike see Robert Aldridge, The Counterforce Syndrome, op. cit. For the argument that nuclear war cannot be controlled see Desmond Ball, Can Nuclear War Be Controlled? (London: IISS, 1981); Paul Bracken, The Command and Control of Nuclear Forces (New Haven 1983), and Dan Ford, The Button (New York 1985). For the most thoroughgoing attack on the thinking behind the countervailing strategy see Robert Jervis, The Illogic of Nuclear Strategy (Ithaca/N.Y. 1983).
For arguments that most thinking about nuclear war underestimates the amount of death and damage such a war would cause see Herbert Abrams and William von Kaenel, 'Medical Problems of Nuclear War', in: New England Journal of Medicine (12 November 1981); Don Hinrichsen and Jeannie Peterson, (eds.) Nuclear War: The Aftermath (New York 1982); (The essays in this book appeared originally as a special issue of AMBIO 11, 2/3 (Spring 1982.) R. Turco, O. Toon, T. Packerman, J. Pollack, and C. Sagan, 'Nuclear Winter: Global Consequences of Multiple Nuclear Weapons Explosions', in: Science (23 December 1983); Paul Ehrlich et al. 'Long Term Biological Consequences of Nuclear War', in: Science (23 December 1983) and The Cold and the Dark (New York 1984).

12. Star Wars

On 23 March 1983 President Reagan startled the American people and many of his closest advisors with a radical speech on military policy. Since the late 1950's, it had been American policy to prevent nuclear attack on the United States through deterrence, that is, through threats of nuclear counterattack. Reagan called for the development of defenses against nuclear attack that would make deterrence unnecessary:

"But since the advent of nuclear weapons, (military policy has) been increasingly directed towards deterrence of aggression through the promise of retaliation.
Over the course of these discussions, I have become more and more deeply convinced that the human spirit must be capable of rising above dealing with other nations and human beings by threatening their existence.
If the Soviet Union will join with us in our effort to achieve major arms reductions we will have succeeded in stabilizing the nuclear balance. Nevertheless, it will still be necessary to rely on the specter of retaliation ... Wouldn't it be better to save lives than to avenge them? What if a free people could live secure in the knowledge that their security did not rest upon the threat of instant U.S. retaliation to deter a Soviet attack; that we could intercept and destroy strategic ballistic missiles before they reached our own soil or that of our allies?
I know that this is a formidable technical task, one that may not be accomplished before the end of this century. Yet current technology has attained a level of sophistication where it is reasonable for us to begin the effort."

This speech introduced what the American government calls the 'Strategic Defense Initiative' but what everyone else calls the 'Star Wars' program. Though few experts took the program seriously at first, the government has committed several billion dollars a year for the first stages of research, and the program has begun to develop a bureaucracy and momentum of its own. In addition, several defense experts at key points on the Reagan national defense team are committed to the program with a quasi-religious intensity.

There are three possibilities for the Strategic Defense Initiative: it may turn out that no system can provide any kind of defense, or that some system can provide a partial defense, or that some system may provide a complete defense for American cities. Critics of the program find each of the three alternatives unfortunate.

Most scientists believe that no system can provide any kind of defense. The Soviets can launch some 2,000 missiles and some 7,000 warheads against the United States. There are at most 30 minutes in which these missiles must be struck down. Most 'Star Wars' suggestions plan to direct laser beams or particle beams against incoming missiles, but the job of successfully striking down so many missiles is very difficult, if not impossible, even under present conditions. But as the American Star War program goes forward, the Soviets can and will respond, and most experts

predict that Soviet offense, including more missiles, more bombs, dummy warheads, attacks on satellites, and so forth, will always outrun American defense. Similarly, if the Soviets press forward with a shield program of their own, the United States will seek to overwhelm it with an offensive buildup of its own. Thus the most likely result of the attempt to build strategic defenses will no real defense but much more offense.

But suppose that some as yet unknown technique provides the United States with a partial defense. Then it will not be possible for the United States to save its cities if the Soviets strike first, but it might be possible to save American cities if the United States strikes first, using its defense system to strike down the few remaining missiles coming over in a Soviet second strike. A partially effective defense system, then, would push the United States towards pre-emptive war, and would pressure the Soviet Union towards pre-emptive war, to "strike first before the Americans do". Thus, an American defensive system can serve the peace only if it is completely effective.

But now suppose that the Americans develop a completely effective defensive shield. Then the world would return to 1948, when the United States was in a position to launch nuclear attacks without fear of being destroyed by nuclear reprisals. That this situation would not automatically be a blessing for the world might be inferred from the feelings that Americans would experience if the Soviet Union developed such a shield when the United States had none. These melancholy reflections on even a 'perfect' shield are not lightened by the realization that no shield could remain impenatrable forever. When the day arrives that the American shield become penatrable, when the American public suddenly finds itself transported from a situation of complete security to a situation of complete insecurity, rectifiable only by a pre-emptive attack on suddenly threatening enemy nuclear weapons, and when the Soviets recognize that the United States and its government feels this way, then the chances of war may be higher than they were when the United States had no shield at all.

Sources and Texts: The political origins of the Stars Wars program are described in Jonathan Stein, From H-Bomb to Star Wars (Lexington/KY 1985). One of the most articulate defenses of the program is Colin Gray, 'Strategic Defense, Deterrence and the Prospects for Peace', in: Ethics 95,3 (April 1985). For technical criticism see Kosta Tsipis, 'Laser Weapons', in: Scientific American (December 1981), and 'Particle Beam Weapons', in: Scientific American (April 1977). The argument that work on defense will provoke increased offense is in Gregory Kavka, 'Space War Ethics', in: Ethics 95,3 (April 1985). The argument that a broken shield is worse than no shield at all is Charles L. Glaser, 'Why Even Good Defenses May Be Bad', in: International Security 9,2 (Fall 1984). For other aspects of Star Wars see Ashton Carter and David Schwartz (eds.), Ballistic Missile Defense (Washington/D.C. 1984), and the two issues of the magazine Daedalus devoted to 'War in Space' - Spring 1985 and Summer 1985.

## 13. The Philosopher's Debate on Nuclear Weapons

Philosophers in the United States, even those specializing in political philosophy and ethics, were not deeply involved in the initial debates about nuclear weapons policy. While their British colleagues in the late 50's published copiously on morality and nuclear weapons, the American moral debate in the 50's and 60's was conducted by persons working from an essentially religious orientation, not persons rooted in philosophical ethics. Their discussions were dominated by the traditional categories of religious ethics and moral theology, including the just war tradition.

If there was a common theme in these early American discussions, it was the moral unacceptability of directing attacks on 'enemy' civilians in order to influence the decisions of enemy governments - the sort of policy the United States undertook in its bombing of Japanese cities in World War II. For some, the immorality of terror bombing implied the immorality of threats of terror bombing, that is, the immorality of adopting a policy of planning to retaliate against enemy cities in response to an attack on the United States. Some suggested that this result implied that the United States should forswear the use of nuclear weapons. Others suggested that this argument condemned the threat to retaliate against enemy cities but did not condemn retaliation against enemy military installations, even if such attacks killed many civilians as well as destroying the military targets that were direct objects of attack.

In the late 60's and early 70's, the attention of American philosophers focused on issues arising from the war in Vietnam, and the nuclear problem was largely left to specialists. Two exceptions to this neglect were Douglas Lackey's article Ethics and Nuclear Deterrence, (1975) and Gregory Kavka's article Some Paradoxes of Deterrence (1978). Lackey argued that the policy of deterring nuclear attacks with threats of nuclear counter-attack was not acceptable because it required the use of persons - presumably persons in the U.S.S.R. - as means to an end (contrary to Kantian ethics), and because it posed an unacceptably high level of danger to persons living in nonaligned nations. Kavka, in his article, argued that it was morally permissible to threaten to do what it would be immoral to do, provided that one does not carry out the threat and provided that the consequences of making the threat are morally good. In a later article, (Deterrence, Utility, and Rational Choice, 1980) Kavka went on to argue that nuclear threats were morally justifiable on these grounds: they have not been carried out, and so far they have had the good effect of preventing nuclear attacks on the United States and helping to limit Soviet power in the world.

Though these two articles are now fairly well known, they were largely neglected at the time. The moral debate began in earnest only with the

election of President Reagan in 1980. Reagan's policies as regards nuclear weapons were largely inherited from Jimmy Carter, but Carter's policies, combined with Reagan's irrepressibly hostile attitude towards the Soviet Union, made it seem to many that nuclear war was imminent. Many philosophers began publishing about nuclear war and nuclear deterrence, basing their analyses on the prevailing moral systems discussed by American philosophers, especially utilitarianism, moral rights theory, and the theory of justice. Three nuclear weapons policies were especially debated: nonpossession (i.e. unilateral nuclear disarmament in the case of nuclear states), finite deterrence (i.e. use of nuclear threats only to deter nuclear attack) and extended deterrence (i.e. use of nuclear threats to prevent aggression, whether nuclear or non-nuclear). If the three moral theories are used to assess each of the three policies, there are nine distinct questions about nuclear ethics, and American philosophers have surveyed all nine of them.

Utilitarian moral philosophers concerned themselves with deciding which nuclear weapons policy best serves the common good of mankind. In 1982, in a widely read book, Jonathan Schell argued that nuclear deterrence did not serve the common good, since nuclear deterrence risked nuclear war, and nuclear war risked the annihilation of the human species, a result Schell judged to be infinitely bad. Schell's argument, however, made little impression on American philosophers - even utilitarian philosophers - because Schell failed to demonstrate (a) that nuclear deterrence was not the best available means of preventing nuclear war, (b) that nuclear war, if it occurred, could indeed destroy the human species, (c) that the extinction of the human species should be considered infinitely bad and (d) that all chances of human extinction must also be considered infinitely bad, even if the chances are in fact quite small.

In 1982, Douglas Lackey provided a different utilitarian argument against nuclear deterrence, whether finite or extended. Lackey argued that non-possession served the common good best, since the number of people who might be killed in a Soviet attack on the United States, given an American choice of non-possession, would be less than the number of people who might be killed in a war between the superpowers, given an American choice of either finite deterrence or extended deterrence. Lackey's arguments were attacked by Gregory Kavka, who argued that the common good consists of more than simply lives lost or lives saved, and by Russell Hardin, who argued that unilateral disarmament precluced bi-laterial disarmament, and that attempts at bi-lateral disarmament were not only better for the common good but also within the realm of political possibility, as unilaterial nuclear disarmament is not. Among deterrent policies, Kavka and Hardin both leaned towards finite deterrence. Arguments that extended deterrence serves the common good best were produced by Secretary of Defense Weinberger, in a speech in 1982.

For those philosophers for whom human rights is the primary moral concern, the debate about nuclear weapons policies has revolved around the right to self-defense versus the right of persons not to be subjected to nuclear risks. For some, the right to self-defense obviously justifies both finite and extended American deterrence. Others note that the right to self-defense is usually construed as a right to use violence against aggressors and only against aggressors. If so, it is difficult do justify nuclear deterence one grounds of self defense, since deterrence inflicts risks on innocent nonaggressors as well as aggressors.

What about the risks inflicted by American nuclear systems on other nations, especially nonnuclear nations? For some, the magnitude and type of these risks, - in effect, American nuclear systems hold the Soviet people as hostages - prove that any policy of deterrence is morally intolerable. For others, the quantity of risk inflicted by finite deterrence is morally tolerable. As for the 'hostage holding' issue, supporters of deterrence note that the United States can be accused of holding the whole world hostage only if it directs its nuclear weapons at enemy (i.e. Soviet) cities. If it directs its retaliatory forces at enemy military installations, then the deaths of civilians would be foreseen but unintended consequences of legitimate military operations, justifiable by the laws of war and by the traditional doctrine of moral theology called "the doctrine of double effect".

There has been considerable discussion among American philosophers about the relationship between nuclear weapons policies and concepts of justice. For some, justice consists in fairness and fairness in reciprocity. On this view, if the Soviet Union imposes a risk of nuclear attack on the United States, then it is fair for the United States to impose a risk of nuclear attack on the Soviet Union. Other philosophers turn this argument around and note that since nonnuclear countries do not impose a risk of nuclear war on the United States, it is not fair for the United States to impose the risks of nuclear war on them.

For other philosophers, the notion of justice is closely linked not to reciprocity but to rationality. For these analysts, the debate centers on the rationality of nuclear deterrence. Can it be rational to attempt to prevent nuclear war with threats of nuclear reprisals? Different philosophers answer in different ways. Some argue that since it is irrational to engage in nuclear war, it must be irrational to make nuclear threats. For these philosophers, deterrence is irrational. Others argue that since it is rational to make nuclear threats (at least threats designed to prevent nuclear attacks) it must also be rational to engage in nuclear war. For such thinkers, deterrence is rational. Still others argue that there is no relationship whatsoever between the rationality of nuclear threats and the

rationality of actually carrying out those threats. For them deterrence may be rational even if nuclear strikes are never rational.

In addition to studies of the rationality of deterrence, philosophers have been involved in studying the rationality of the arms race, once again confronting the problem of the Prisoners' Dilemma. Work in this area has been stimulated by studies of the iterated Prisoners' Dilemma conducted by Robert Axelrod in 1981, the results of which seem to imply, in the case of arms race, that the rational course of action in a world of multiple nuclear powers is (a) never to be the first to increase nuclear armaments, and (b) always to increase armaments (or take some other punitive action) if the other side does. More recently, some attention has been given to a theoretical result derived by Professor Steven Brams, showing that nations trapped in a Prisoner's Dilemma that prevents them from achieving arms control can extricate themselves by improving their ability to predict each others actions, improvements that can be obtained without prior cooperation with better signal intelligence, surveillance satellites, and so forth.

Finally, there are those philosophers for whom the principles of justice are the principles that parties arrive at through a process of negotiation and agreement. For these 'Social Contract' theorists, the just nuclear policy is a policy that nations would arrive at if they began from a position of equality and negotiated rationally. Some philosophers believe that nations starting from a position of equality would agree not to possess nuclear weapons at all. Others argue that the social contract theory supports deterrence - at least finite deterrence. Still other philosophers maintain that since the superpowers cannot reach an agreement, the principles of justice simply cannot be applied to their relations, and that therefore considerations of national interest should determine the choice of policies.

It is clear from these remarks that American philosophers have not invented any new nuclear weapons policies, nor have they devised any new moral theories with which to judge them. Instead the philosophers have provided new arguments for and against each of the three main policy options: nonpossession, finite deterrence, and extended deterrence. Though many different philosophical and moral positions are represented, it seems that not many philosophers argue for the moral necessity of nonpossession or for the moral permissibility of extended deterrence. The majority seem to support finite deterrence: the retention of a minimum number of nuclear weapons in order to deter, and only to deter, nuclear attacks on American cities. Since present American policy is a policy of nonminimum extended deterrence, the majority of American philosophers believe that morality demands substantial changes in the defense policies of the United States.

Sources and Texts: The views of British philosophers on nuclear questions, which usually miss the distinction between finite and extended deterrence, can be found in two volumes edited by Nigel Blake and Kay Pole, Dangers of Deterrence (London 1983) and Objections to Nuclear Defence (London 1984). The American philosophers' views are presented in three books, The Security Gamble, edited by Douglas Maclean (Totowa/NJ 1984), The Ethics of War and Nuclear Deterrence, edited by James Sterba (Belmont/CA 1985), and Nuclear Weapons and the Future of Humanity edited by Avner Cohen and Steven Lee (Totowa/NJ 1985), and also in three special issues of American philosophy journals: Ethics 95,3 (April 1985), Philosophy and Social Criticism 12 (April 1985), and Social Theory and Practice (October 1985). The special issue of Ethics is particularly wide reaching and contains articles by social scientists and strategists as well as philosophers.

Lackey's 1975 attack on deterrence is found in the collection Moral Problems, edited by James Rachels (New York 1975). Kavka's 1978 analysis of deterrence is in the Journal of Philosophy 75 (June 1978). Kavka's, 'Deterrence, Utility, and Rational Choice', is in Theory and Decision 12 (1980).

Schell's attack on the risks of deterrence is in The Fate of the Earth (New York 1982). Lackey's utilitarian attack on deterrence was published as 'Missiles and Morals', in: Philosophy and Public Affairs 11,3 (Summer 1982). Kavka's criticism was published as 'Doubts About Unilateral Disarmament', in: Philosophy and Public Affairs 12,3 (Summer 1983), and Hardin's criticisms as 'Unilateral vs. Mutual Disarmament', in: Philosophy and Public Affairs 12,3 (Summer 1983). Caspar Weinberger's views are given in his Shattuck Lecture: 'Remarks of the Secretary of Defense to the Massachusetts Medical Society', in: New England Journal of Medicine 307,2 (16 September 1982).

Some of the problems concerning the relation between the right to self-defense and deterrent strategies are discussed in Cheyney Ryan, in: 'Self Defense, Pacifism and the Morality of Killing', Ethics 93 (October 1983). Arguments that the magnitude of risks inflicted by the United States are too great to be morally justifiable are given in D. Lackey, 'Immoral Risks', in: Social Philosophy and Policy 3,1 (October 1985). The counter-argument that the risks of finite deterrence are tolerable is given in G. Kavka, 'Nuclear Deterrence: Some Moral Perplexities', in: The Security Gamble, op. cit. The argument that the risks are tolerable if the United States adopts counterforce targeting are given in a recent version by W.V. O'Brien, The Conduct of Just and Limited War (New York 1981). For an analysis of the relation between current policy and 'hostage holding' see Steven Lee, 'The Morality of Nuclear Deterrence: Hostage Holding and Consequences', in: Ethics 95,3 (April 1985).

The idea that fairness between nuclear powers should be based on reciprocity is implied in J. Joffe, 'Nuclear Weapons, No First Use, and European Order', in: Ethics 95,3 (April 1985). The argument that the rationality of nuclear second strikes follows from the rationality of nuclear threats is in David Gauthier, 'Deterrence, Maximization, and Rationality', in: Ethics 94,3 (April 1984). The argument that the irrationality of actually launching second strikes proves the irrationality of nuclear threats is given in many places, for example, by A. Kenny in Objections to Nuclear Defence, op. cit. The argument that the rationality of threats must be kept separate from the rationality of threat execution is in Kavka, 'Some Paradoxes of Deterrence', op. cit. For a defense of deterrence in terms of the social contract theory, see Christopher Morris, 'A Contractarian Defense of Nuclear Deterrence', in: Ethics 95,3 (1985). The idea that in the absence of binding agreements, the 'rules of justice' between nation

states are merely conventions which need be observed only in the expectation of compliance on the other side is in George Mavrodes, 'Conventions and the Laws of War', in: Philosophy and Public Affairs 4,2 (Winter 1975).

## Bibliography

Since a great many books and articles have been cited in this article, it might be helpful to supply my own choice of the most influential and interesting analyses of nuclear weapons policy. The following, of course, are just one person's preferences.

### The Best Works on Nuclear Strategy

Brodie, B./P. Corbett/T.R. Fox/A. Wolfers (1946), The Absolute Weapon, New York

Kaufmann, W. (1956), The Requirements of Deterrence, in: W. Kaufmann (ed.), Military Policy and National Security, Princeton/N.J.

Snyder, G. (1961), Deterrence and Defense, Princeton/N.J.

Schelling, T. (1966), Arms and Influence, New Haven/CT

Intriligator, M. (1967), Strategy in a Missile War: Targets and Rates of Fire, Los Angeles

Jervis, R. (1983), The Illogic of Nuclear Strategy, Ithaca/NY

### Important Books on the Ethics of Nuclear Weapons Policy

Ramsey, P. (1961), War and The Christian Conscience, Durham/NC

Stein, W. (ed.) (1961) Nuclear Weapons: A Catholic Response, London

O'Brien, W.V. (1967), Nuclear War, Deterrence, and Morality, Westminster

All of the preceding books analyze nuclear weapons policies on the basis of moral principles derived from various religious ethics. The only comprehensive critiques of nuclear weapons policies from the standpoint of non-religious moral principles are:

Lackey, D. (1984), Moral Principles and Nuclear Weapons, Totowa/NJ

Kenny, A. (1985), The Logic of Deterrence, London/Chicago

Nye Jr., J. (1986), Nuclear Ethics, New York

Historical Analyses

Those wishing to analyze more closely the actual history of American nuclear weapons development and strategy should consult particularly the following works:

Rosenberg, D.A. (1983), The Origins of Overkill, in: International Security 7,4

Ball, D. (1983), Targeting for Strategic Deterrence, London (Institute for Strategic Studies)

Arkin, W./W. Fieldhouse (1985), Nuclear Battlefields, Cambridge/MA