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Apocalypse Then: Aspects of Nuclear Weapons-Acquisition Policy Thirty Years Ago[1]

This being my first public utterance since my arrival at Dalhousie last September, I want to take the opportunity to thank the Killam Trust, the University in general, and its political science department in particular for making it possible for me to spend the year in writing and reflection at Halifax—a city I have come to know and to admire since I was first here thirty-five years ago, as an ordinary seaman in the crew of HMCS *Comox*, when, early each day, we would slip our moorings and steam to the approaches of the harbour, where we would sweep for mines.

But it is another type of weapon, and another anniversary that engage my attention now. On 31 January 1950—exactly thirty years ago today—President Harry S. Truman issued this statement:

> It is part of my responsibility as Commander in Chief of the Armed Forces to see to it that our country is able to defend itself against any possible aggressor. Accordingly, I have directed the Atomic Energy Commission to continue its work on all forms of atomic weapons, including the so-called hydrogen or super bomb.

At the time that statement was made, the dimensions of destruction already at the disposal of the American Commander in Chief were even then prodigious. Consider: about three hundred nuclear weapons were in the atomic stockpile by 1950. Most of the bombs in this arsenal had the destructive characteristics of the weapon dropped on Naasaki—the equivalent of 21,000 tons of TNT—but some were twenty times as destructive: a half-megaton atomic monster had been test-detonated in 1949. One such weapon could have destroyed any city in the Soviet Union except for its five largest, which would have taken two. As early as 1947, American planners had begun to prepare for the eventuality of war with the Soviet Union by assuming that they would be able to count on having at their disposal nuclear firepower

Truman told Stalin at Potsdam of possessing a weapon of unusual destructive power, the Generalissimo, displaying no interest, later ordered his physicists to "hurry things up".[6] The minister in charge of the United Kingdom's contribution to the Manhattan Project told the prime minister of Canada in 1943 that the atomic bomb "would be a terrific factor in the post-war world as giving an absolute control to whatever country possessed the secret".[7] Winston Churchill was if anything even more convinced of the atom's power to compel as well as to destroy. "It is the second Coming", he told a confidant, blasphemously. "Fire was the first discovery; this is the second."[8] In December 1947, Churchill propounded to the prime minister of Canada a policy for putting the Soviet Union in its place:

> America . . . should tell the Russians just what the United States and the United Kingdom were prepared to do in meeting them in the matter of political boundaries, seaports, etc., but let them understand that if they were not prepared to accept this, their cities would be bombed within a certain number of days. He said if they were told this plainly enough, they would retreat.[9]

Churchill, being out of office then, could not put this policy to the test. That is just as well.

The Americans, for their part, were equally enamoured of their atomic acquisition, of which they had determined to remain monopolists (wartime undertakings notwithstanding, likewise post-war negotations for international control). In April 1945, the U.S. Secretary of State, briefing President Truman about the atomic bomb (of the development of which Truman had been unaware), told him that it would put the United States government "in a position to dictate our own terms at the end of the war."[10]

Nothing, it turned out, would be further from the truth. So far from the Truman administration's being able to translate its nuclear monopoly into political settlements to its liking, it met with severe reversals to its foreign policy objectives: the consolidation of Soviet power in Eastern and Central Europe, Kremlin bullying in Western Europe, the so-called "loss of China" to a communist regime, and—above all, and worst of all—the breaking of its monopoly by, of all people, "those Asiatics" (as Truman called the Russians when he first heard the bad news).

Word of the Soviet detonation on 29 August 1949, conveyed indirectly but incontrovertibly by radioactive particles blowing on the wind and monitored around the world, when reaching Washington in

early September, created a consternation there that was close to panic. "There was even vague talk [among members of the U.S. Congressional Joint Committee on Atomic Energy] of the possible need for military reprisals" write the official historians of the U.S. Atomic Energy Commission. ". . . [C]louds of anxiety gathered in the hearing room just as storm clouds outside piled up . . . . When a clap of thunder startled the legislators . . . , someone exclaimed, 'My God, that must be Number Two! . . . ' "[11]

Many tribal societies (so anthropologists have found) possess a fearful image of the god of war, from which derives, they believe, their power over rivals. Along with the image goes an obsession that it may be lost, or stolen, or copied. To prevent such a calamity, "a temple is built, ringed about by walls and guarded by untiring sentinels. Those whose function it is to attend the deity are carefully chosen and subjected to purification rites; they are forbidden ever to look upon the whole image or to speak of what they have seen. They are guarded with unceasing vigilance and at the slightest sign of defection condign punishment is meted out to them."[12] Are these not the rites as well of the tribe of atomic monopolists from 1945 to 1949? The atomic stockpile was their god of war, the laboratories at Oak Ridge and Los Alamos their temples, the nuclear physicists their sentinels: it is not fanciful to think so. The biographer of a leading sentinel recalls that, before the image had been stolen and copied, he was summoned by the tribal chief:

> "When will the Russians be able to build the bomb?", asked Truman.
> "I don't know", said Oppenheimer.
> "I know".
> "When?"
> "Never".

As this exchange took place, "Truman's face as [Oppenheimer] . . . remembered it, impressed him as serene, lit by mystic inner confidence." "Never" would last three more years. Then the sentinel returned to the White House to tell the chief that the deity had been copied by the rival tribe. "Truman simply could not believe him." Congressmen, too, remained incredulous. Eventually, "half convinced, most decided that the news if true confirmed what they had known all along: Security should have been given greater control of scientists."[13] The sentinels had let them down. As punishment, Oppenheimer was stripped of his security clearance and hence barred from his laboratory.

The tribe that lost its deity was a tribe that lost its head.

The American sociologist Edward A. Shils imaginatively recaptures the mood of his compatriots as they faced the calamity of this, to them, enormous loss. By 1949, Shils points out, their world was not turning out as they had hoped, indeed expected.

> The Soviet Union was obviously not allowing itself to be moved by dreams of a world of peace and mutual aid. The Soviet vetoes began to pile up in the Security Council . . . . The country was forced to make more and more explicit its alliance with Great Britain , and this did not please those who, while hating the Soviet Union, also hated Great Britain . . . . In this crisis, the possession of a vital secret became the straw of the drowning man. The retention of the vital secret became the focus of the phantasies of apocalypse and destruction, of the battle between the children of darkness . . . .[14]

Suddenly, on 23 September 1949, the American people were told by their chief that the vital secret had been lost. As is common in cases of shock, reaction was delayed but severe when it set in. "The atomic bomb was a bridge over which the phantasies ordinarily confined to restricted sections of the population,—hole-and-corner nativist radicalism, religious fundamentalism; and revolutionary populism—entered the larger society which was facing an unprecedented threat to its continuance," Shils notes of the effect of the loss of the nuclear monopoly upon his country's public life. "The phantasies of apocalyptic visionaries now claimed the respectability of being a reasonable interpretation of the real situation."[15]

And where else in America did such fantasy interpretations of history thrive but in Wisconsin, Missouri, Kansas—the middle western heartland, and the home states, respectively, of McCarthy, Truman and Eisenhower, the three key politicians of the period? In the near hysteria to which they catered, each in their own way of course, by their rhetoric and by their deeds, at least two lives were claimed—those of Ethel and Julius Rosenberg, indicted and electrocuted for having allegedly transmitted information about atomic bomb manufacture and design to officials of the Soviet Union. It fell to President Eisenhower, early in his first administration, to decide whether to commute the Rosenbergs' death sentence to one of life imprisonment. Eishenower refused, on the grounds that, as his statement of 11 February 1953 asserted, "[t]he nature of the crimes for which they have been found guilty and sentenced far exceeds that of taking the life of another citizen. It involves the deliberate betrayal of the entire nation and could very well result in the death of many,

many thousands of innocent citizens." A further statement of 19 June put the number of the Rosenbergs' potential victims at "tens of millions".[16] Yet, so far from making atomic war more likely, the Rosenbergs (who, it should be recalled, went to the electric chair protesting not their fidelity to a higher patriotism than love of country, but their innocence of the charges brought against them), may be said to have furthered the cause of the attainment of that "Mutual Assured Destruction" which became the objective of United States strategy in years to come.

Deprived of the tribal deity, those in charge of manifest destiny cast about for a replacement. They found one readily at hand—more brutish and more awesome than that which had been taken from them. Edward Teller, the hydrogen bomb's progenitor, now became its lobbyist and, flanked by Ernest Lawrence, beseeched the U.S. government to mount a crash programme to build the Super as the American answer to the Soviet Union's atomic capability. In this effort, Teller and Lawrence were opposed by the majority of their peers for whom the thought of going thermonuclear was morally repugnant. The views of this majority were amply and ably represented on the General Advisory Committee of the U.S. Atomic Energy Commission, seven of whose eight members, all scientists, met over the weekend of 28 October 1949 to register an opinion on the advisability of attempting to build a hydrogen bomb.

They first addressed the question: could they do it if they tried? Their answer: Despite existing theoretical imperfections and harrowing technological difficulties, "we believe that an imaginative and concerted attack on the problem has a better than even chance of producing the weapon within five years." In what kind of weapon, then, would successful production result? Their answer:

> [O]nce the problem of initiation [of fusion] has been solved, there is no limit to the explosive power of the bomb itself except that imposed by requirements of delivery . . . . [I]t has generally been estimated that the weapon would have an explosive effect some hundreds of times that of present fission bombs. This would correspond to a damage area of the order of hundreds of square miles, to thermal radiation effects extending over a comparable area, and to very grave contamination problems which can easily be made more acute, and may possibly be rendered less acute, by surrounding the deuterium with uranium or other material . . . .

It is clear, they concluded, "that the use of this weapon would bring about the destruction of innumerable human lives; it is not a weapon

which can be used exclusively for the destruction of material installations or semi-military purposes. Its use therefore carries much further than the [atomic] bomb itself the policy of exterminating civilian populations . . . ."[17]

That a hydrogen bomb would be genocidal in effect did not lead ineluctably to a decision to refrain from producing it. The Super's unprecedented potential for destruction on the vastest scale was considered by its advocates to be its beneficial and redeeming feature, making it the ultimate deterrent. There was no more rabid advocate than old Sir Winston Churchill, returned to office one more time. "He really let himself go on the H-bomb," a visitor recorded after listening to him talk about it:

> His sweeping imagination and range of mind has sensed that this discovery has made all the old concepts of strategy and defence as out of date as the spear or the Macedonian phalanx. He is horrified and comforted at the same time; by the immensity of the bomb, and by its value as a deterrent. He finds solace in the fact that the Moscow men are cold-blooded realists who know what power means and don't wish to be destroyed. So he thinks the bomb may be the destruction of war, not of humanity.[18]

None of the seven scientists of the General Advisory Committee had thought that. They found no comfort, only horror. They opposed the project to engineer the hydrogen weapon. They expressed their opposition in two statements: one for a majority of five, the other for the minority.

The majority statement (which Oppenheimer signed) reads in part:

> We base our recommendation on our belief that the extreme dangers to mankind inherent in the proposal wholly outweigh any military advantage that could come from this development. Let it be clearly realized that this is a super weapon; it is in a totally different category from an atomic bomb. The reason for developing such super bombs would have to be the capacity to devastate a vast area with a single bomb. Its use would involve a decision to slaughter a vast number of civilians. We are alarmed as to the possible global effects of a few super bombs of conceivable magnitude. If super bombs will work at all, there is no inherent limit in the destructive power that may be attained with them. Therefore, a super bomb might become a weapon of genocide.
>
> The existence of such a weapon in our armoury would have far-reaching effects on world opinion; reasonable people the world over would realize that the existence of a weapon of this type whose power of destruction is essentially unlimited represents a threat to the future of

> the human race which is intolerable. Thus we believe that the psychological effect of the weapon in our hands would be adverse to our interest.

The signers of this statement rejected the argument, used by Roosevelt ten years earlier, that the weapon should be acquired as a deterrent to its use or threatened use by an enemy power. "Should they use the weapon against us, reprisals by our large stock of atomic bombs would be comparably effective to the use of a Super."[19]

A minority statement, signed by Enrico Fermi and Isidor Rabbi, while not disputing the reasoning of their colleagues, went further than they in their condemnation. "It is clear that the use of such a weapon cannot be justified on any ethical ground which gives a human being a certain individuality and dignity even if he happens to be a resident of any enemy country," they affirmed. "The fact that no limits exist to the destructiveness of this weapon makes its very existence and the knowledge of its construction a danger to humanity as a whole. It is necessarily an evil thing considered in any light."[20]

Not all leading American scientists were of such minds as these. Along with Teller and Lawrence, there were others attracted to the Super for a reason unstated at the time. Oppenheimer hinted at it in a letter which contradicted his later position as a signatory of the majority statement: "It would be folly to oppose the exploration of this weapon. We have always known that it had to be done, and it does have to be done . . . ."[21] In subsequent testimony that would become famous, he explained why it had to be done: the Super bomb concept was "technically so sweet that you could not argue about that."[22] When Teller and Stanislaus Ulam invented the process which promised to convert the Super from the cumbersome and hence practically useless contraption it had been hitherto to a weapon actually deliverable to targets, Oppenheimer described their invention as "sweet and lovely and beautiful."[23] The chairman of the U.S. Atomic Energy Commission, no champion of the Super, wrote disparagingly in his diary of the scientists who were "drooling" at the chance to work on it.[24] One drooled more profusely than the rest. ". . . [O]ne of my main reasons for working on the hydrogen bomb was its novelty," Edward Teller candidly admitted years afterward. "Not knowing how it would influence the future, I wanted both as a scientist and also for practical reasons to see how it would work. Some," Teller added, "will perhaps consider this irresponsible. . . ."[25]

There was no dissent among the military. The U.S. Joint Chiefs of Staff were for the Super on every conceivable score, none more so

than for the consideration that Soviet possession of such a weapon "without possession by the United States would be intolerable."[26] An admiral on the U.S. National Security Council observed: "It's either we make it or we wait until the Russians drop it on us without warning."[27] The qualms of the General Advisory Committee were brushed aside on the grounds that "It is folly to argue whether one weapon is more immoral than another." On the other hand, it was the Joint Chiefs' view that "properly used" in strategic bombing of Soviet cities, the Super could be decisive in general war, and additionally had "high tactical value . . . against such targets as . . . massed enemy forces."[28]

The former infantry captain from Missouri was much impressed by these arguments, telling an aide on 19 January 1950 that they "made a lot of sense." On 31 January 1950—thirty years ago today—President Truman met with the chairman of the U.S. Atomic Energy Commission, who had hoped to present a summary of its report recommending that further effort should be made to reach agreement on international control before proceeding with the hydrogen bomb. The President cut the presentation short, saying that he had already decided to go ahead. The whole meeting lasted seven minutes.[29]

The hydrogen bomb has at least one property in common with the atom bomb: to be sure you know you have one, you have to test one. And testing can be hazardous to your health.

One of the members of the Los Alamos team has told how, on the eve of the first test of an atom bomb, "the dinner-table conversation . . . centred around the possibility that the bomb explosion might detonate the atmosphere by causing nitrogen and oxygen atoms to fuse together . . . with the further possibility that fusion in the atmosphere might set off fusion in the sea."[30] It didn't, and the assumption thereafter became that atomic bombs might be tested with impunity, which they were. Livestock died in consequence, but only recently has leukemia showed up among the God-fearing folk of Utah and Nevada who became exposed to fall-out, and among former members of the U.S. army who were marched close to ground zero to see what would happen to them.

The official historians of the U.S. Atomic Energy Commission do not have much to say about whether concern for possible adverse effects on health and life inhibited its enthusiasm for testing nuclear and thermonuclear weapons. During the spring of 1949, one of its scientists theorized about the number of atomic bombs that would

have to be detonated to contaminate their crops; he arrived (it would be cynical to say predictably) at the comforting conclusion that three thousand atomic bombs would have to be exploded during a single growing season to cause a serious hazard. A follow-up study concluded that ten thousand weapons, each of 20,000 TNT equivalent, could be detonated without undue danger from side-effects. The conclusion drawn from such studies was that "fallout posed a definite potential danger, but not an immediate one in terms of existing stockpiles or test plans. Apparently," the Commission's official historians add, "no one raised the question of genetic defects . . . ."[31] The Commission's safety factors were flawed by its assumption that a healthy person can withstand without harm exposure to a dose of twenty-five roentgens of wholebody gamma radiations, whereas scientists now tell us that exposure should be limited to ten roentgens during the first thirty years of our lives.

Behind the scenes, officials had been concerned—not with the possibility that testing might be harmful, but with the possibility that an aroused public might compel the curtailment of testing or switching of the site. On 23 February 1953, the U.S. Atomic Energy Commission pondered a letter from the chairman of the congressional Joint Committee on Atomic Energy, in which he suggested that the Nevada proving ground—the chairman was a senator from Nevada—might have to be abandoned. The commissioners were strenuously opposed. "I think that this will set the weapons program back a lot to go to the Pacific," one commissioner remarked, adding: "People have got to learn to live with the facts of life, and part of the facts of life is fall-out." To which the Commission chairman responded: "Fall-out . . . is all right, they say, if you don't live next door to it." And another commissioner chimed in: "Or under it." The sense of the meeting was expressed by Commissioner Murray: "We must not let anything interfere with this series of tests—nothing." The protesting senator from Nevada was put off by a letter from the Commission stating that it was considering switching the site from Nevada to Alaska, which was not true.[32]

On 27 May 1953, President Eisenhower authorized the Commission to conduct a further series of tests at the Nevada site. The President "expressed some concern, not too serious," about local protests, the Chairman of the Commission wrote in his diary, and "made the suggestion that we leave 'thermonuclear' out of press releases and speeches. Also 'fusion' and 'hydrogen' . . . . The President says 'keep them confused about "fusion" and "fission" ' ."[33] Presidents have

been impeached for less iniquity than is evident in that remark. Ike's intent to deceive the public is obvious, but there was no fusion testing in Nevada or elsewhere in the United States.

The report of the General Advisory Committee recommending against developing the hydrogen bomb had taken note of the fact that "we are faced with a development which cannot be carried to the point of conviction without the actual construction and demonstration of the essential elements of the weapon in question," and they had further stressed that "many tests may be required before a workable model has been evolved." As early as 1946, their views on the effects of fall-out from a ten megaton Super had been put on record, although in secret:

> The most world-wide destruction could come from radioactive poisons. It has been estimated that the detonation of 10,000 to 100,000 fission bombs would bring the radioactive content of the Earth's atmosphere to a dangerously high level. If a Super were designed containing a large number of U-238 to catch its neutrons and add fission energy to that of the thermonuclear reaction, it would require only in the neighbourhood of 10 to 100 Supers of this type to produce an equivalent atmospheric radioactivity.

"Presumably," they had added, "Supers of this type would not be used in warfare for just this reason."[34] Five years following this warning, and two years after their further warning of 1949 that detonation of such a weapon would produce "thermal radiation effects" over "hundreds of square miles," the U.S. Atomic Energy Commission was preparing for the Ivy-Mike shot—the first thermonuclear explosion on 1 November 1952, with its TNT equivalent of 10,000,000 tons. The central Pacific Ocean island on which the device was detonated disappeared.

The Commission then prepared for the testing of the first hydrogen bomb—that is, a deliverable weapon. The explosion on Bikini Atoll on 1 March 1953 was twice that which had been calculated—not seven megatons, fifteen. A shift in the wind, also uncalculated, spread radiation particles around the Marshall Islands. American technicians, trained for such a mishap, swabbed themselves and stayed in tents until the dust had dissipated. The Marshall Islanders, untrained, suffered radiation burns and sickness, especially the eighty-two inhabitants of the island most severely affected; fortunately for them, they lived in the southern part of it, which received 100 roentgens, rather than in the northern, which received 1,000. Not so

fortunate were the twenty-three members of the crew of the fishing trawler which had inadvertently entered the test area. All became severely ill and some were in hospital for months. On 23 September 1953 Aiticki Kuboyama died—the U.S. Atomic Energy Commision claimed of hepatitis. But it had been radiation sickness which put him into hospital, and Kuboyama is rightly regarded as the first fatality of the hydrogen bomb. Like the first fatality of the atomic bomb, he was Japanese.

No longer could the U.S. Atomic Energy Commission ignore the effects of fall-out as "part of the facts of life": they had become part of the facts of death. It sought, instead, to minimize the effects of fall-out. It stated publicly in 1955 that "the average amount of radiation exposure received by residents of the United States from all nuclear detonations to date has been about the same as the exposure from one chest x-ray."[35]

That may well have been the case. But one chest x-ray does not affect the reproductive organs; it does not enter the womb of a pregnant woman to cause foetal damage; and if the average American had received the equivalent of a single chest-ray's dosage, those living down-wind of the Nevada test site had received much more. Not to speak of 15,000 Marshall Islanders exposed to fall-out from tests of hydrogen bombs deemed too dangerous to run in the United States.

One does not have to be a scientist to arrive at such deductions. But scientists deduce with authority. They found the U.S. Atomic Energy Commission's evaluations to the effects of the blast at Bikini lacking in candour. A British physicist, writing in the *Bulletin for the Atomic Scientists,* concluded that the Bikini bomb, to have spewed so much radioactivity about the globe, must have been of the type of which the American scientists had warned in 1946, that which used both fission and fusion. " . . . [T]here is something particularly sinister," he wrote, "about a bomb which is so designed as to poison the whole world . . . ."[36]

By 1949, efforts to attain agreement between the United States and the Soviet Union on the international control of atomic energy—such as those efforts were—had all but been abandoned. Washington considered the project a lost cause and a dead duck. For one brief moment, however, a few American policy-makers thought it could and should be revived. The Soviet Union's nuclear detonation made them believe that the time was ripe for their government to deal with the Russians so as to head off, to their mutual advantage, an atomic

weapons arms race. The prime mover in this endeavour was the diplomat George F. Kennan, at that time in his last year at the U.S. State Department as the director of its Policy Planning Staff.

Before marshalling an argument to his own government, Kennan tried out his ideas on a Canadian colleague. The American plan for atomic energy control, which put fool-proof and therefore intrusive international inspection at the top of the requirements and the scrapping of its stockpile at the bottom, would never be acceptable to those who ran Stalin's police state. So let's put new proposals forward, Kennan urged. We should tell the Russians that the United States was prepared to abandon large-scale atomic weapons production, even to put a moratorium on the peaceful use of atomic energy—if the Russians were prepared to do likewise. The Americans would settle for inspection of raw material sites and declared facilities—if the Russians were prepared to do likewise. And the Americans would sequester their existing stockpile of atomic weapons with some international custodian—if the Russians were prepared to do likewise.

These ideas were gone over by experts in Ottawa, and they were not enthused by them. They were seen to bristle with difficulty. It would be unrealistic to expect the Russians to forego nuclear power for industrial purposes. The limited inspection which Kennan envisaged would not prevent the Russians from cheating if they wished—and they would so wish—to produce atomic bombs on the sly. To put nuclear weapons under international control was the kind of solution to a problem such that, if it could be implemented, there would have been no problem and no need for the solution. Kennan would give up the West's surest means for avoiding war with the Soviet Union for which purpose, as Ottawa's foremost authority on arms control pointed out, "the strategic use of the atomic weapon is an essential element . . . ."[37]

Kennan had failed to convince the Canadians, but that was not his main objective. His appeal to his own government is contained in a memorandum dated 20 January 1950, and called "International Control of Atomic Energy". As it appears in a volume of published state papers it runs to twenty-three pages of fine print, omitting more pages not vital to the argument. Kennan later described it as "one of the most important, if not the most important, of all the documents I ever wrote in government."[38]

In it, Kennan sought to persuade the U.S. administration to take up anew, on the basis of concessions to Soviet interest and sensibilities, the issue of international control of energy. But in the

paper, that is for him a secondary issue. The primary issue, on which all else turned, including atomic energy control, was the attitude of decision-makers towards weapons of mass destruction—the atomic bombs already acquired, the hydrogen bomb which had not yet been acquired. What he called "the crucial question" he formulates thus:

> Are we to rely upon weapons of mass destruction as an integral and vitally important component of our military strength, which we would expect to employ deliberately, immediately and unhesitatingly in the event that we become involved in a military conflict with the Soviet Union? Or are we to retain such weapons in our national arsenal only as a deterrent to the use of similar weapons against ourselves or our allies and as a possible means of retaliation in case they are used? According to the way this question is answered, a whole series of decisions are influenced, . . . particularly on what we do about the superbomb.

Kennan proceeds to plead, with all the eloquence at his command, that weapons of mass destruction should be weapons of last resort. Such weapons are different from conventional weapons which admit and recognize "the possibility of surrender and submission . . . . The weapons of mass destruction do not have this quality. They reach backwards beyond the frontiers of Western civilization . . . . They cannot really be reconciled with a political purpose directed to shaping, rather than destroying, the lives of the adversary." This is not a pacifist's position but a rationalist's. "It is entirely possible," Kennan admits, "that war may be waged against us again . . . under these concepts and by these weapons. If so, we shall doubtless be obliged to reply in kind, for that may be the price of survival." But that is the limit of their utility for him:

> I still think it is vital to our own understanding of what it is we are about that we not fall into the error of initiating, or planning to initiate, the employment of these weapons and concepts, thus hypnotizing ourselves into the belief that they may ultimately serve positive national purpose. I doubt our ability to hold the respective weapons in our national arsenal, to fit them into our military and political plans, to agree with our allies on the circumstances of their use, and to entertain the prospect of their continued cultivation by our adversaries, without backsliding repeatedly into this dangerous, and possibly mortal error.[39]

As Kennan had failed to win over Ottawa, so he failed to win over Washington. "It appears," our ambassador there reported, "that Mr. Kennan's ideas have not won support in the Administration."[40] Truman's answer to them—go for the hydrogen bomb, and go for it

for broke—was soon forthcoming. When Kennan learned of the President's statement on 31 January, he writes in his memoirs, "I knew that my labour had been . . . in vain."[41]

Could he have expected that his labour would prove productive? Probably not: He admits that "to ask that these views find general acceptance in this Government is asking a great deal."[42] Why then did Kennan squander so keen an intellect on so forlorn a cause? The answer is best given in his own words. "It may be adduced, with regard to the above discussion," Kennan writes in the concluding paragraphs of his memorandum,

> that it charts out a course replete with a whole series of difficulties and obstacles and that there is extremely little likelihood . . . that we would ever successfully make our way to the end of it, which would be an agreement on international control. From this, it may be argued that it could hardly be worthwhile for us to embark upon it.
>
> This is a respectable argument; and if the progress of world events in our time were slower, simpler, and easier to foresee, it might be unanswerable. But St. Paul's observation that "We know in part and we prophesy in part" was never truer than it is of the time ahead of us, particularly in respect to the development of the international situation, the meaning of war and the function of weapons. In such a time there is only one thing a nation can do which can have any solid value: and that is to see to it that the initial lines of its policy are as close as possible to the principles dictated by its nature, and that where it is necessary to depart from these lines, people are aware that this *is* a departure and understand why it is necessary. . . .[43]

Those words of thirty years ago speak to peoples everywhere today, as they stand by, puzzled and bewildered, while their governments prepare to propel them around yet another lap of the arms race. Were we but to act on them, they might help avert apocalypse to come.

NOTES

1. This essay was delivered as a public lecture at Dalhousie University, 31 January 1980.
2. Quoted in Richard G. Hewlett and Francis Duncan, *A History of the United States Atomic Energy Commission*, II, *Atomic Shield, 1947/1952* (University Park, Pa., 1969), 393.
3. Quoted in David Alan Rosenberg, "American Atomic Strategy and the Hydrogen Bomb Decision", *The Journal of American History*, 66, I, June 1979, 67.

4. Quoted in Richard G. Hewlett and Oscar E. Anderson, Jr., *A History of the United States Atomic Energy Commission*, I, *The New World, 1939/1945* (University Park, Pa., 1962), 17.
5. Freeman Dyson, *Disturbing the Universe* (New York, 1979), 51-2.
6. Quoted in Anthony Cave Brown and Charles B. MacDonald (eds.), *The Secret History of the Atomic Bomb* (New York, 1977), xvi.
7. Quoted in J.W. Pickersgill (ed.), *The MacKenzie King Record*, I, *1939-1944* (Toronto, 1960), 532.
8. Quoted in C.E.S. Franks, "The Development of Peaceful Nuclear Energy: Three Configurations of Knowledge and Power", *International Journal*, xxxiv, 2, Spring 1979, 189.
9. Quoted in J.W. Pickersgill and D.F. Forster (eds.), *The MacKenzie King Record*, IV, *1947-1948* (Toronto, 1970), 117.
10. Quoted in Thomas T. Hammond, "Atomic Diplomacy Revisited", *Orbis*, xix, Winter 1976, 1427.
11. Hewlett and Duncan, *A History* . . . . 368.
12. Quoted in Margaret Gowing, *Independence and Deterrence: Britain and Atomic Energy, 1945-1952*, I, *Policy Making* (London, 1974), 321.
13. Nuel Pharr Davis, *Lawrence and Oppenheimer* (New York, 1968), 260, 294.
14. Edward S. Shils, *The Torment of Secrecy: The Background and Consequences of American Security Policies* (New York & London, 1956), 67.
15. *Ibid.*, 70-1.
16. *Public Papers of the Presidents of the United States: Dwight D. Eisenhower, 1953* (Washington, D.C., 1960), 40, 447.
17. Quoted in Herbert F. York: *The Advisors: Oppenheimer, Teller and the Superbomb* (San Francisco, 1976), 50-1.
18. Quoted in *Mike: The Memoirs of the Right Honourable Lester B. Pearson*, 2, *1948-1957* (Toronto & Buffalo, 1973), 80.
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