Designing Denuclearization:
Learning from the 1940s and from Recent Experience

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Summary

The Maud Committee report [2 July 1941]:

> Even if the war should end before the bombs are ready the effort would not be wasted, except in the unlikely event of complete disarmament, since no nation would care to risk being caught without a weapon of such decisive possibilities.[1]

The Franck Report [11 June 1945], by a group of project scientists and engineers, urging

> that the use of nuclear bombs in this war be considered as a problem of long-range national policy rather than of military expediency, and that this policy be directed primarily to the achievement of an agreement permitting an effective international control of the means of nuclear warfare.[2]

The Key Questions: Keeping Denuclearization in Focus?

1943-1949

1. *should the bomb be built?*
2. *should the bomb be used?*
3. *should the bomb be retained?*
4. *should the bomb's role be confined to nuclear deterrence?*
5. *should the bomb be deployed and ready?*
6. *should ZNW be a serious goal?*
7. *is there a declared readiness to seek ZNW? actions?*
8. *is there readiness to plan collective security under ZNW?*

1995-2003

As for 1943-1949, except

1a. should new bombs be designed, built, and tested?

Assessment: The Problematique *in 1995-2003*

Nuclear Proliferation: Iraq & North Korea in Spring 2003

• Prepared for the ISODARCO Summer Course 2003, 16-26 June 2003, Candia, Italy.

1 http://www.nuclearfiles.org/redocuments/1941/41-maud.html

2 *Ibid*., pp. 569-572.

Tokyo, 11 June 2003
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Designing Denuclearization:
Learning from the 1940s and from Recent Experience

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The point of this paper is to recall the topography of the political scene in which nuclear weapons came forth. And then to compare that with recent experience. As the title suggests, I believe we can learn from these comparisons. I also believe that denuclearization, as a political project, requires design, and that it is useful to recall the obstacles of the 1940s and their effects..

We must learn from recent experience—it presents us with our current tasks—but there are many uncertainties, about facts, and about the intentions of key governments and individuals. There are some things we can assert with confidence, however, and others which, though just good guesses, can guide contingent assertions. We face a complex and unpromising time for reasoned political action. But like any people in such circumstances, must do the best reasoned job we can.

This paper concludes with the sketch of a project of 'designing denuclearization'.

Much of the material presented in this paper will be familiar to you, either from the standard historical accounts of the1940s or your own familiarity with events of the recent past. What I hope to add—what has been useful for me in interrogating this material—is a framework identifying the key questions which policy-makers did face, or ought to have faced, the form of those questions and their analogs today, and what appear to have been the principal sites of resistance to denuclearization and its prerequisites.

• Prepared for the ISODARCO Summer Course 2003, 16-26 June 2003, Candriai, Italy.

Beginnings

For our purposes we can skip the insights of those physicists who grasped that explosive power lay in the atom and begin with two political steps, which set bomb programs in motion. Einstein's 2 August 1939 letter to Roosevelt made the case:

> In the course of the last four months it has been made probable—through the work of Joliot in France as well as Fermi and Szilard in America—that it may become possible to set up a nuclear chain reaction in a large mass of uranium, by which vast amounts of power and large quantities of new radium-like elements would be generated. Now it appears almost certain that this could be achieved in the immediate future.
>
> This new phenomenon would also lead to the construction of bombs, and it is conceivable—though much less certain—that extremely powerful bombs of a new type may thus be constructed. A single bomb of this type, carried by boat and exploded in a port, might very well destroy the whole port together with some of the surrounding territory. However, such bombs might very well prove to be too heavy for transportation by air.[3]

In October Roosevelt established a Committee on Uranium, which first met on 21 October 1939. On 1 November the committee reported to Roosevelt that "if the reaction turns out to be explosive in character, it would provide a possible source of bombs with a destructiveness vastly greater than anything now known" and calling for "adequate support for a thorough investigation." Roosevelt is said to have read the report, but no action was taken for several months.[4]

On 2 July 1941 the Maud Committee, organized in April 1940, reported that a bomb was possible and could be built in 30 months. On 30 August Churchill proposed that a bomb research program be begun, and on 3 September 1941 his advisors recommended it be given the highest priority.[5]

In mid-1940 Roosevelt appointed Vannevar Bush to head a National Defense Resource Committee, and it was Bush, in a meeting with Roosevelt on 9 October 1941, who told Roosevelt

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3 The text is widely available, for example at http://www.pbs.org/wgbh/amex/truman/psources/ps_einstein.html
A subcommittee of the Committee for the Scientific Survey of Air Warfare, it was formally the M.A.U.D. Committee. Origin of the name at Margaret Gowing, *Britain and Atomic Energy 1939-1941* (London: Macmillan, 1964), p. 45.

4 http://www.childrenofthemanhattanproject.org/HISTORY/H-04a.htm.

5 Andrew J. Pierre, *Nuclear Politics: The British Experience with an Independent Strategic Force, 1939-1970* (London: Oxford University Press, 1972), pp. 9-10, p. 15.

about the Maud Committee report[6] and possibility that Germany could be undertaking a bomb project. Roosevelt approved research and planning, but no development was to begin without his consent.[7]

It was not until August 1942 that the Manhattan Engineer District was established, its principal initiative—the bomb program— becoming known as the Manhattan Project.

The British program, including British personnel, were subsequently merged into the joint US-UK-Canadian venture which produced the first atomic bomb. Britain did not obtain an actual weapon as a result of that program.

In one sense, both in Britain and the United States the bomb program was impelled by war with Germany. But for the larger questions which we are taking up in this paper, what is crucial is one brief remark in the Maud Committee report:

> Even if the war should end before the bombs are ready the effort would not be wasted, except in the unlikely event of complete disarmament, since no nation would care to risk being caught without a weapon of such decisive possibilities.[8]

This raw capability of nuclear weapons bedevils proposals for abolition.

With this in mind, I will introduce what seem to me to have been, and to continue to be, the key questions.

The Key Questions: Keeping Denuclearization in Focus?

1943-1949

1. should the bomb be built?

The contemporary form of this question is

1a. should new bombs be designed, built, and tested?

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6 A Pugwash footnote: Joseph Rotblat attributes the American notice of the Maud Committee report to Mark Oliphant, subsequently a Pugwash figure:

> While on a trip to the United States on radar business, in 1941, Oliphant discovered that no work was going on in the USA on the atom bomb, although the Report of the MAUD Committee had been sent to the relevant authorities. He immediately told a few friends about the British findings. The setting up of the Manhattan Project can be said to be the outcome of Oliphant's indiscretion!
>
> Oliphant vehemently opposed the use of the atom bomb on the Japanese cities. He never overcame his feelings of guilt about the part he played in the Manhattan Project, and he frequently expressed his views publicly. He also took an active part in international campaigns against nuclear weapons, particularly in Pugwash. He fully shared the Pugwash precept that scientists have a moral duty to be concerned about the social impact of their work. Describing himself as a 'belligerent pacifist'; he asserted his conviction that war itself is evil and should not be tolerated by humanity.
>
> http://www.pugwash.org/reports/pim/pim22.htm

Margaret Gowing comments that "The British always believed that the report of Pegram and Urey after their visit to England played a decisive part in the American decision to pursue the project with the utmost vigour. But the decisive influences were those of the Maud Report itself upon Dr Bush and Dr Conant and of Professor Oliphant on Professor Lawrence." Britain and Atomic Energy 1939-1945, p. 121.

7 Doug Long at http://www.doug-long.com/bush.htm, citing Bush-Conant Files, RG 227, microfilm 1392, roll 1, folder 1, *Memorandum For Dr. Conant, Oct. 9, 1941* , National Archives; Harrison-Bundy Files, RG 77, microfilm 1108, roll 4, folder 58, Bush letter to FDR, March 9, 1942, National Archives.

8 http://www.nuclearfiles.org/redocuments/1941/41-maud.html

Those aware of the US-UK bomb program were a few in government, and those in the project who needed to know its purpose. War with Germany, the outcome profoundly uncertain in 1940 and 1941, and fear of a German program were sufficient to justify, even for those with qualms, that the program be pursued. It is famously understood that only one participant withdrew from the project on learning that there was no analogous German program. "When it became evident, toward the end of 1944, that the Germans had abandoned their bomb project, the whole purpose of my being in Los Alamos ceased to be, and I asked for permission to leave and return to Britain." [9] But Joe Rotblat was forbidden to speak to others at Los Alamos about his decision, and there seems to have been no proposal to halt the program at that time, or upon Germany's surrender in May 1945.

2. should the bomb be used?

Two distinct bomb designs were approaching readiness in mid-1945. One would lead to the bomb dropped on Hiroshima, using ^{235}Uranium as the fissile material. The second, using Plutonium, would be tested at Alamogordo on 16 July 1945, proving the bomb which would be dropped on Nagasaki.

But *was it sound policy—was it right—to use the bomb against a city? to use the bomb at all?*

Among scientists and engineers working in the bomb project were some who believed that it should not be used. There was also one person in government, Undersecretary of the Navy Ralph A. Bard, who urged warning prior to use: " … before the bomb is actually used against Japan … Japan should have some preliminary warning for say two or three days in advance of use."[10]

Sequencing: First Talk with Russia, Prior to Use

A Scientific Panel had met in Los Alamos in June, and recommended, according to Oppenheimer, that "before a firm decision on the use of the bomb, our Government talk of the future to our allies."[11] But the Interim Committee recommended on 1 June that "the bomb should be used against Japan as soon as possible," and the Scientific Panel itself, on 16 June, wrote of those wishing "to outlaw the use of atomic weapons" who proposed a demonstration of the bomb, that "we can propose no technical demonstration likely to bring an end to the war; we see no acceptable alternative to direct military use."[12] So these questions traveled in parallel: should the bomb be used? should the future—how nuclear weapons would be managed—be discussed with the Russians and others? And in what *order* would steps be taken?

In November 1945 the leaders of Britain, Canada, and the United States agreed to propose the United Nations discuss control, and to approach the Soviet Union to join them in doing so. But between June and November the bomb had been used. It's power had been shown. Could this have significantly altered the possibilities of control?

Potsdam: Prior Warning, Negotiated Surrender Possible

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9 Joseph Rotblat, "Leaving the Bomb Project," in Kai Bird and Lawrence Lifschultz [eds], *Hiroshima's Shadow* (Stony Creek, Connecticut: The Pamphleteer's Press, 1998), pp. 253-257, p. 256.

10 Bard memorandum to Secretary of War Stimson,, 27 June 1945. http://www.dannen.com/decision/bardmemo.html [seen 21 January 2003]. Source: U.S. National Archives, Record Group 77, Records of the Chief of Engineers, Manhattan Engineer District, Harrison-Bundy File, folder #77, "Interim Committee, International Control".

11 J. Robert Oppenheimer, "Niels Bohr and Atomic Weapons," *The New York Review of Books*, 17 December 1964.

12 Quoted by Henry L. Stimson, "The Decision to Use the Atomic Bomb," reproduced in Kai Bird and Lawrence Lifschultz [eds], *Hiroshima's Shadow* (Stony Creek, Connecticut: The Pamphleteer's Press, 1998), pp. 197-210, pp. 201-202. Originally in *Harper's Magazine*, February 1947. See also, in bird & Lifschultz [eds], Barton J. Bernstein, "Seizing the Contested Terrain of Early Nuclear History," pp. 163-196, esp.n 69 p. 193.

The Franck Report, 11 June 1945, drafted by a committee at the Metallurgical Laboratory, argues explicitly for demonstration rather than sudden use. It proposes a demonstration "before the eyes of representatives of all the United Nations, on the desert or a barren island." If then used against Japan the bomb's use should be preceded by an ultimatum to surrender or "at least" a warning to evacuate target regions.[13] They explicitly link this more complex, calibrated sequence to the 'conditions' for negotiated post-war controls. Other countries will build nuclear weapons after "a few years." They judge "the use of nuclear bombs for an early unannounced attack against Japan inadvisable":

> Much more favorable conditions for the eventual achievement of such an agreement could be created if nuclear bombs were first revealed to the world by a demonstration in an appropriately selected uninhabited area."

Finally, the authors of the Franck Report urge

> that the use of nuclear bombs in this war be considered as a problem of long-range national policy rather than of military expediency, and that this policy be directed primarily to the achievement of an agreement permitting an effective international control of the means of nuclear warfare.[14]

Prior warning—a surrogate for non-use, provided Japan capitulated—was at this crucial time, in July 1945, an issue in the language of the Potsdam Declaration. A statement to be made publicly to the Japanese was drafted in preparation for Potsdam, but at the conference itself, after Truman was joined by the new US Secretary of State James F. Byrnes, the warning language was dropped.

Byrnes had emerged from private life to center stage on 3 July 1945, as newly-appointed Secretary of State. But he was fully informed on the nuclear policy issues, having been a member of the Interim Committee. Byrnes then intervened in two ways to center the bomb in traditional power terms, and set negotiated futures to the side. There were powerful figures around Truman, including drafters of the Potsdam Declaration, who believed negotiated surrender possible. Byrnes appears to have brought about removal from the Potsdam Declaration of a draft provision that the Emperor could remain monarch after surrender. Bird and Lifschutz explain that the day after the nuclear test at Alamogordo, with Byrnes at Potsdam,

> Stimson made a final plea to Byrnes for an explicit warning regarding the capability of the bomb and a precise assurance to the Japanese that unconditional surrender did not mean end to the Emperor. Byrnes cut him off and unequivocally rejected both ideas, saying he spoke for the President. The plausible alternative to both an invasion and the bomb was now dead at Potsdam.[15]

Bird and Lifschutz also contend that Byrnes was preoccupied by the Soviet Union, a prospective challenger in Asia. They cite Leo Szilard as saying that Byrnes assumed "rattling the bomb might make Russia more manageable."[16] He did not expect, and did not seek, cooperative nuclear discussions with the Soviet Union.[17]

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13 Franck Report, in Smith, above, pp. 566-567.

14 *Ibid*., pp. 569-572.

15 Kai Bird and Lawrence Lifschultz, p. lxi.

16 *Ibid*., p. lxiii.

17 In the same volume, Barton J. Bernstein, p. 184, quotes the Stimson diaries: "He [Byrnes] quite radically opposed … any approach to Stalin [on control of atomic energy]. He was on the point of departing for the foreign ministers' meeting [in London in September 1945] and wished to have the implied threat of the bomb in his pocket during the conference.

Oppenheimer's Account

Twenty years later J. Robert Oppenheimer offered an overview of the last weeks of the war, useful as a narrative of events, but also intriguing as Oppenheimer's account of his own role, and in part for that reason I quote at length. He places Bohr at the center of things, but ultimately disappointed. Oppenheimer wrote that

> With Roosevelt's death, Bohr's memoranda were given by Bush to Stimson. Shortly thereafter Stimson appointed a committee in which Karl Compton, Bush, and Conant were the technical members, and in which State, War, Navy, and the Office of the President were represented. It was called the Interim Committee, and its purpose was to advise the Secretary of War and the President on the future of atomic energy.
>
> In a sense Bohr was not alone at all. Bush and Compton and Conant were clear that the only future they could envisage with hope was one in which the whole atomic development would be internationally controlled. Stimson understood this; he understood that it meant a very great change in human life; he understood that the central problem at that moment lay in our relations with Russia. The authors of the Franck Report in Chicago were clear that this was the course of hope, and so wrote. So too were the scientists who banded together after the war to form the Federation of American Scientists. So were countless others. But there were differences: Bohr was for action, for timely and responsible action. He realized that it had to be taken by those who had the power to commit and to act. He wanted to change the whole framework in which this problem would appear, early enough so that the problem would be altered by it. He believed in statesmen; he used the word over and over again; he was not very much for committees.
>
> The Interim Committee was a committee, and proved itself by appointing another committee, the scientific panel, of which Arthur Compton, Fermi, Lawrence, and I were members. We met with the Interim Committee on the 1st of May. We talked just about the question of relations with Russia, secrecy, openness, the future of science, the future of atomic enterprises. Some remember talking about the use of the bomb; that no doubt occurred, but not in Committee session. I was very deeply impressed with General Marshall's wisdom, and Secretary Stimson's; I went over to the British mission and met Bohr and tried to comfort him; but he was too wise and too worldly to be comforted; he left for England soon after, quite uncertain about what, if anything, would happen.
>
> In June the scientific panel met at Los Alamos. We recommended that, before a firm decision on the use of the bomb, our Government talk of the future to our allies. The Interim Committee met on the 21st of June; it agreed that this talk should be initiated at the meeting of the President, the Prime Minister, and Stalin, which was planned for the 16th of July at Potsdam.
>
> We had to make a test of the bomb on technical grounds. We hoped to get it done by the 16th of July, so that the President and the Secretary of War might have some notion of whether it worked. It did. But there was not much talk with the Russians. Stimson was horrified when he saw what the Red Army was; as he wrote, he rather lost his nerve. Byrnes had been against talking to the Russians; Churchill was against saying anything. But they all agreed that if the President said something to Stalin, and used the Trinity explosion as the occasion, it would at least relieve us of the worst reproaches for double-dealing. When the news came in from New Mexico, very much more lurid then than it would seem now, the President dismissed his interpreter, Charles Bohlen, in order to keep things casual, and went over to talk to Stalin. Truman remarked that we had a new weapon which was quite powerful, and which we were thinking of using against Japan. According to Truman, Stalin said he wished us luck and hoped it would work. That was carrying casualness rather far. [18]

The Scientific Panel prepared a memo for Stimson on the post-war problem, delivered just after Japan's surrender. At Oppenheimer's urging they declared that "the safety of this nation … can be based only on making future wars impossible." Every step should be taken,

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[On September 4] I found that Byrnes was very much against any attempt to cooperate with Russia. His mind is full of his problems with the coming meeting of foreign ministers and he looks to having the presence of the bomb in his pocket, so to speak, as a great weapon to get through the thing."

[18] Robert Oppenheimer, "Niels Bohr and Atomic Weapons," *The New York Review of Books*, 17 December 1964, a "much abbreviated account of lectures given between August, 1963 and May, 1964 at the Brookhaven National Laboratory, at the University of California, at the California Institute of Technology, and at Los Alamos, New Mexico."

"all necessary international arrangements be made, to this one end." But Secretary of State James F. Byrnes rejected the group's approach as "not practical."[19]

There are other points at which there *might* have been an chance to slow or halt the ongoing expectation that the bomb would be used. But in the end there was no 'great debate' on the subject. After all, within government only a few even knew of the bomb.

3. should the bomb be retained?

Some project scientists and engineers believed that the issue of post-war control of nuclear weapons should be an urgent subject, which meant in effect that it should be discussed with the Soviet Union.

But without some explicit judgment to the contrary, momentum and General Leslie Groves' position would ensure that the bomb be retained. Again, there was no 'great debate'.

Nonetheless, the issue of control comes onto the international agenda. The sheer dangers inherent in nuclear weapons were reason to do this. The Washington Declaration of 15 November 1945, issued by Clement Attlee, Harry S. Truman, and Mackenzie King, called on the United Nations to create a Commission which would in turn draft proposals. They approached Moscow; the Soviet Union joined them in bringing this to the United Nations. It was an important step, but one creating a forum, not a commitment to any specific measures.

It may be useful to recall the text agreed in late 1945 by the three governments.[20]

> VII. THE ESTABLISHMENT BY THE UNITED NATIONS OF A COMMISSION FOR THE CONTROL OF ATOMIC ENERGY
>
> Discussion of the subject of atomic energy related to the question of the establishment of a commission by the General Assembly of the United Nations. The Ministers of Foreign Affairs of the Union of Soviet Socialist Republics, the United States of America, and the United Kingdom have agreed to recommend, for the consideration of the General Assembly of the United Nations, the establishment by the United Nations of a commission to consider problems arising from the discovery of atomic energy and related matters. Their have agreed to invite the other permanent members of the Security Council, France and China, together with Canada, to join with them in assuming the initiative in sponsoring the following resolution at the first session of the General Assembly of the United Nations in January 1946:-
>
> Resolved by the General Assembly of the United Nations to establish a Commission, with the composition and competence set out hereunder, to deal with the problems raised by the discovery of atomic energy and other related matters.
>
> I. Establishment of the Commission
>
> A Commission is hereby established by the General Assembly with the terms of reference set out under Section V below.
>
> II. Relations of the Commission with the Organs of the United Nations (a) The Commission shall submit its reports and recommendations to the Security Council, and such reports and recommendations shall be made public unless the Security Council, in the interests of peace and security, otherwise directs. In the appropriate cases the Security Council should transmit these Reports to the General Assembly and the members of the United Nations, as well as to the Economic and Social Council and other Organs within the framework of the United Nations.

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19 Herken, *Brotherhood of the Bomb*, p. 141, citing Oppenheimer to Secretary of War, August 17, 1945, no. 77, Harrison-Bundy file, Records of the Manhattan Engineer District, RG 77, National Archives, College Park, Maryland.

20 In Moscow, 27 December 1945, by Foreign Minister V. M. Molotov, Foreign Secretary Ernest Bevin, and Secretary of State James F. Byrnes. http://www.yale.edu/lawweb/avalon/decade/decade19.htm [Seen 7 June 2003.]

(b) In view of the Security Council's primary responsibility under the Charter of the United Nations for the maintenance of international peace and security, the Security Council shall issue directions to the Commission in matters affecting security. On these matters the Commission shall be accountable for its work to the Security Council.

III. Composition of the Commission

The Commission shall be composed of one representative from each of those states represented on the Security Council, and Canada when that state is not a member of the Security Council. Each representative on the Commission may have such assistants as he may desire.

IV. Rules of Procedure

The Commission shall have whatever staff it may deem necessary, and shall make recommendations for its rules of procedure to the Security Council, which shall approve them as a procedural matter.

V. Terms of Reference of the Commission

The Commission shall proceed with tile utmost dispatch and inquire into all phases of the problem, and make such recommendations from time to time with respect to them as it finds possible. In particular the Commission shall make specific proposals:

(a) For extending between all nations the exchange of basic scientific information for peaceful ends;

(b) For control of atomic energy to the extent necessary to ensure its use only for peaceful purposes;

(c) For the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction;

(d) For effective safeguards by way of inspection and other means to protect complying states against the hazards of violations and evasions.

The work of the Commission should proceed by separate stages, the successful completion of each of which will develop the necessary confidence of the world before the next stage is undertaken.

The Commission shall not infringe upon the responsibilities of any Organ of the United Nations, but should present recommendations for the consideration of those Organs in the performance of their tasks under the terms of the United Nations Charter .

In one sense, all they had done was to create a commission which would make proposals. But they called for *specific proposals to achieve and sustain a ban on nuclear weapons.*[21]

4. should the bomb's role be confined to nuclear deterrence?

The other large state emerging victorious from WWII with a large army was the Soviet Union. And by mid-1945 Soviet forces were in the heart of Europe. Should the United States shape its military contingency plans to include threatening nuclear weapons against the Soviet Union?

After a terrible war against Germany and Japan, and rapid post-war demobilization, the western victors of WWII included those, of whom Byrnes was one, who saw them as a 'trump card.'

[21] The door left open to nuclear weapons under *non-national* control, or joint control, and the ambiguity in elimination from 'national armaments', as distinguished from some other form of national control, and not important here. This is a proposal, not an agreement. It reasonably appears as a ban on nuclear weapons in the hands of states.

But deterrence in 1945, and until 1949, was deterrence of *conventional* war. So the question "should the bomb be held *only* to deter others' use of nuclear weapons?" was not posed.

5. should the bomb be deployed and ready?

The answer given to his question, until the Korean War, was 'no': they were not 'ready', since weapons would have to be moved from the United States to locations from which aircraft could reach the Soviet Union or China. The US built very few nuclear weapons in 1945 and 1946.[22] After bombs were dropped on Hiroshima and Nagasaki it did not immediately deploy nuclear weapons abroad, although moving assemblies to the Pacific for subsequent possible use was in train. B-29s were deployed to RAF Lakenheath, 32 km from Cambridge, in August 1948, at the height of the Berlin crisis,[23] but were not provided nuclear weapons. It was not until the first Soviet test of August 1949 that the weapons program was markedly accelerated, and only with the Korean War and growing Cold War that nuclear weapons were based abroad.[24]

About the Berlin Blockade we know that the Secretary of Defense sought Presidential approval to release nuclear weapons. But Truman refused to do so. He did agree to dispatch aircraft to Britain which would be seen as nuclear capable: an implicit nuclear threat was made. But Truman insisted on retaining Presidential control.[25]

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22 At the end of 1945 it had 5; at end 1946, 11. Even by the end of 1949 there were 'only' 235; but ten years after that it held more than 15,000. NRDC, Archive of Nuclear Data, http://www.nrdc.org/nuclear/nudb/datab9.asp

23 But RAF Lakenheath had been designated for US forces in July 1948. It was the 2nd Bomb Group of the Strategic Air Command which arrived the next month. In January 1951 six B-36 bombers were based at RAF Lakenheath. Lakenheath Action Group, "US Military in East Anglia." http://www.motherearth.org/lakenheathaction/usmil.php3

24 See Robert S. Norris, William M. Arkin, and William Burr, "Where They Were," *Bulletin of the Atomic Scientists*, November-December 1999. http://www.thebulletin.org/issues/1999/nd99/nd99norris.html

They explain that non-nuclear components ('assemblies') were prepositioned abroad before 'capsules'—the nuclear core or pit of plutonium or uranium—or complete weapons. The smaller, lighter 'capsules' could be moved quickly if needed. But it was not until 11 June 1950 that Truman authorized prepositioning 89 'assemblies' in the United Kingdom. They were there by the end of July. [Citing L. Wainstein et al., *The Evolution of U.S. Strategic Command and Control and Warning, 1945-1972* (Arlington, Va.: Institute for Defense Analysis, June 1975), p. 31.] A week after the Korean War began Truman authorized 'assemblies' to be sent to Guam and, aboard ship, in the Mediterranean, and nine 'capsules' were moved to Guam in late June 1951, territory under US control. It was only in 1954 that Eisenhower authorized deploying complete nuclear weapons, to Britain and Morocco, where the US maintained strategic bomber bases. And so, Norris et al. point out, the first US nuclear weapons deployed on foreign soil were deployed in Morocco, that is, in Africa, and not until 1954.

An earlier NRDC account offers a somewhat different chronology, which Norris et al. may have abandoned when they obtained the US government study on which their *Bulletin of the Atomic Scientists* November-December 1999 article is based. In 1998 Norris, Arkin, and Joshua Handler wrote that:

> It is not publicly known precisely when the first U.S. nuclear weapons were introduced to Europe on a permanent basis. About 40 specially modified atomic-capable B-45 bombers were sent to Royal Air Force Base, Sculthorpe in the U.K. between May and mid-June 1952. The planes were configured to carry Mark 5, Mark 6, and Mark 8 fission bombs. The first nuclear bombs were probably deployed permanently overseas in the United Kingdom in 1953.
>
> Earlier, Strategic Air Command (SAC) B-29 bombers began to operate from the United Kingdom beginning in April 1949. B-36 bombers began flights to Morocco in 1951, and B-47 bombers, in great numbers, would begin rotational flights to Europe and elsewhere in 1953. In October 1953, the first nuclear weapons were deployed to the continent of Europe when mammoth Army 280mm nuclear artillery guns and projectiles arrived in West Germany.

William M. Arkin, Robert S. Norris, and Joshua Handler, *Taking Stock: Worldwide Nuclear Deployments 1998* (Washington, DC: Natural Resources Defense Council, March 1998), p. 17. But the point remains that 'ready' forces were in place only several years after Hiroshima.

25 Avi Schlaim, *The United States and the Berlin Blockade, 1847-1848: a Study in Crisis Decision-Making* (Berkeley, California: University of California Press, 1983).

6. should ZNW be a serious goal?
7. is there a declared readiness to seek ZNW? actions?

Accounts agree that the person most focused on the dangers of nuclear weapons was Niels Bohr. Not only did he speak to colleagues, but he also submitted a letter to Roosevelt on 3 July 1944 and, on 24 March 1945 a 'supplementary memorandum' which sketched the main features of a post-war international control system.

There were among scientists and engineers privy to the bomb project those who argued for 'control'. Of course, 'control' could have consigned a stockpile to an international body, or placed national stockpiles under supervision. But it could also have meant a ban. The Jeffries Report, delivered on 18 November 1944, called for

> an international administration with police powers which can effectively control at least the means of nucleonic warfare.[26]

Its authors foresaw other nations developing nuclear weapons, in turn compelling the United States to develop 'nucleonics' with "maximum intensity." But " … without a worldwide organization for the maintenance of peace, [the development of 'nucleonics'] will hasten the coming of the most destructive war in history."[27]

The Franck Report, seven months later, looks to international control. Its authors offer two proposals on control *in sensu strictu*: rationing raw materials—mainly uranium ore—or allowing unlimited production but keeping close track, what we would now call 'controls and accounting'. But measures must be effective: "any international agreement on prevention of nuclear armaments must be backed by actual and efficient controls." Other countries will build nuclear weapons after "a few years." Most central to their view, linking the issues of a 'demonstration' and post-war international agreement, they judge "the use of nuclear bombs for an early unannounced attack against Japan inadvisable": [28]

> Much more favorable conditions for the eventual achievement of such an agreement could be created if nuclear bombs were first revealed to the world by a demonstration in an appropriately selected uninhabited area."

Finally, the authors of the Franck Report urge

> that the use of nuclear bombs in this war be considered as a problem of long-range national policy rather than of military expediency, and that this policy be directed primarily to the achievement of an agreement permitting an effective international control of the means of nuclear warfare.[29]

The United Nations Atomic Energy Commission

Such negotiations as there were on 'control' took place in the UN Atomic Energy Commission, which we introduced above. To prepare a US submission to this negotiation the Acheson-Lilienthal

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[26] The Jeffries Report—titled "Prospectus on Nucleonics"—was written by a committee of project participants at the Metallurgical Laboratory, University of Chicago: Zay Jeffries (Chairman), R. S. Mulliken, Enrico Fermi, James Franck, T. R. Hogness, R. S. Stone, and C. A. Thomas. It was submitted to Arthur Holly Compton on 18 November 1944. Sections I, V, VI, and VII are reprinted as Appendix A in the hardcover version of Alice Kimball Smith, *A Peril and a Hope* (Chicago: University of Chicago Press, 1965), pp. 539-559; it does not appear in the MIT Press paperback edition (1971).

[27] Jeffries Report, in Smith, *A Peril and a Hope*, pp. 553-554.

[28] Franck Report, in Smith, above, pp. 566-567.

[29] *Ibid*., pp. 569-572.

Report (*A Report on the International Control of Atomic Energy*) was commissioned by the US Secretary of State. The proposal actually placed on the table by the United States—the "Baruch Plan", identified with the chief US negotiator, Bernard Baruch—departed in salient respects from the Acheson-Lilienthal report; and it is the interplay between the "Baruch Plan" and Soviet counterproposals which ultimately results in deadlock. The Commission reports, but the majority lacks Soviet assent.

One question about both the Acheson-Lilienthal Report and the Baruch Plan is whether they were designed to fail: what were their authors' intentions? I take the Acheson-Lilienthal Report at face value, as a good faith effort to design a scheme which would accomplish and sustain weapon denuclearization, but also carry the US political establishment. The Baruch Plan is suspect, because terms added—and not necessary for US security under weapon denuclearization—made it less palatable to the Soviets.

This is not the only view possible. Some look askance at the Acheson-Lilienthal Report because its main author, Robert Oppenheimer, had directed the bomb project, and because they judge the weight placed on demonstrated Soviet performance too great.

Others relieve Baruch of blame, arguing either that Soviet conduct required the more stringent terms of the Plan or that it doesn't matter because the Soviets would have rejected any reasonable plan, at least until they had tested a nuclear weapon and achieved parity with the United States.

It's an old problem in politics to distinguish intentions from lies. What is incontestable, however, is that there were Bomb Lobbies in both the Soviet Union and the United States. And there were deep suspicions of the other. And—strengthening resistance to a ban—there was no way in which advocates of control could show that the other party would not cheat. Enormous stakes, deep suspicions, and an uncertain future would plague even a good faith negotiation. And if either side, or both, were intent on blocking an agreement, it could surely do so. The final incontestable fact is that agreement was not reached.[30]

8. is there readiness to plan collective security under ZNW?

The UN Charter provided that each member state should negotiate an agreement with the Security Council, providing the military forces and facilities it would put at the Council's call to keep the peace. One could have collective security *ad hoc*, but an ongoing commitment to collective security would seem to require some *planning*.

The Charter also calls for a Military Staff Committee, the chiefs of staff of the Permanent Members or their surrogates, to advise the Security Council. Does it exist? Yes. Has the Security Council called upon it for advice? To my knowledge, never. It is an entity in name only. So in 1946, or 1947, was there any planning for collective security under ZNW? Not to my knowledge.

Assessment

Just as enemies can—and often do—collude to start a war, so the hostile and suspicious can collude to deny themselves significantly better outcomes. Game theorists have long said so. As long as Moscow insisted 'disarm first' and Washington insisted 'inspect first', the 1946 negotiations were bound to fail. Could some arrangement have been devised which met Moscow's fear of US advantage but made adequate assurances for Washington as well? Perhaps. Would it have passed muster in either capital? Probably not.

30 The text of the Baruch Plan is at http://www.nuclearfiles.org/redocuments/1946/460614-baruch.html.

Recall that the British and Americans kept Stalin in the dark—officially—until Potsdam. Recall that they had built an unprecedented weapon, not available to the Soviet Union. Recall that the Soviet Union, but not the United States, had been stretched to exhaustion by war. Recall—for the Russians certainly did—that allied aid in WWII was superimposed on the memory of British, Japanese, and American troops in Russia 20 years earlier. Whether telling Stalin more, or telling him earlier, or foregoing use of the bomb against Japan (which was on the verge of surrender in any case) would have changed Moscow's perceptions enough to make agreement on control possible cannot be known. But profound suspicions would have remained. What we know for sure is that inclusion was not attempted.

We should also remember that in 1945 no one knew with any certainty where the atomic revolution would lead. Would refinements lead to yet more powerful weapons? (They did: it is called the H-bomb.) Would new physical principles be discovered which were yet unknown? Would the promise of abundant cheap energy so change economies that advantage would race to those with nuclear knowledge? (It has not: instead we've discovered that nuclear power is expensive and Chernoblesque.) The point is that Russia could not know what it might be being asked to give up. Neither could the United States. Distrust and timidity prevailed.

The Key Questions: Keeping Denuclearization in Focus? 1995-2003

We'll now carry our eight questions to the present. What are the recent, and impending, directions?

1a. should new bombs be designed, built, and tested?

The US Congress' 2004 Defense Appropriations Bill includes a provision to revoke an earlier Congressional ban on designing small nuclear weapons. Bush and his Republican confreres want the Congressional ban to go away.

In the January 2002 Nuclear Posture Review the DoD made its case for both small nuclear weapons and weapons to attack deep underground bunkers. They would also shorten the time required to restart nuclear explosive test facilities in Nevada.

So the answer is "Yes, they wish to do so." Is there a good case for these new designs? None that I can see.

2. should the bomb be used?

The Cheney-Rumsfeld group is gnawing at the 'nuclear threshold'. For five decades and more responsible opinion has held that nuclear weapons should not be 'normalized'. There should be, in that view, the highest threshold against use. The present US administration's claims for missions other than nuclear deterrence are the subject of point 4.

During the Reagan presidency (1981-1989) its officials stressed the 'immorality' of deterrence. 'Star Wars' missile defense would provide a moral alternative.

The GW Bush group, too, is committed to missile defense and, like the Reagan administration, concurrently commits to deterrence.

An always-on deterrent force could be used by error, willful disobedience, or accident. That is: *logically* keeping a force for deterrence requires maintaining an insistence that it *could* be used.

Everyone understands this. What it means is that the two, three, or more states which practice mutual deterrence *jointly underwrite the possibility of use*, and do so in the conviction that having nuclear weapons serves their interests. They create *the possibility of use* even if they profess, and believe, that they would not use them first.

3. should the bomb be retained?

Current US posture presumes indefinite retention of nuclear weapons, deployed and ready.

4. should the bomb's role be confined to nuclear deterrence?

Current US policy posits purposes other than deterrence for which nuclear weapons should be ready. The occasions for which use is advocated, or openly considered, other than nuclear deterrence, have changed since the Cold War:

Cold War

- prevent defeat by 'conventional' attack in Europe or Korea
- as 'tactical' or 'battlefield' weapons, enhancing firepower
- as the anti-missile warhead in some ABM systems
- counter use of chemical or biological weapons

Post-Cold War

- counter use of chemical or biological weapons
- as 'tactical' weapons against BW or CW capabilities
- to attack underground facilities

The main purpose of these proposals today, however, is to insist that nuclear weapons do have uses, and that the system which provides and supports them should be funded, staffed, and active.

Most startling is the program to enable authorization for use of an aircraft-delivered weapon to be made *while the aircraft is in flight.* This new capability means that a target *not on prior authorized lists* could be identified, added to the lists, a decision made to attack it with a nuclear weapon, and the attack carried out in a matter of hours.[31] What—in an era of precision guided 'conventional' systems—can be the need for such unreflective use?

5. should the bomb be deployed and ready?

The N5—and almost certainly Israel—maintain nuclear systems that are 'ready'. Exactly how far India and Pakistan have taken militarisation of nuclear devices is not clear, but analysts assume an aircraft-deliverable weapon is available to both. No evidence of a militarised, deployable, or deployed North Korean bomb has been offered.

There are a number of sub-issues implied by 'deployed and ready', and it is in examining these that the contrast with the period 1945-49 is greatest:

Numbers

[31] Hans Kristensen described this capability in a recent talk.

Despite the SALT and START processes, and the 'mutual unilateral measures' of September-October 1991, the numbers remain very large, and the Moscow Treaty—despite hype about cuts—codifies US refusal to commit to a process of negotiated reductions.

Britain, France, and China appear to have found stable equilibrium positions at 'minimum deterrence'. Critics point out that the 'minimum deterrence' nuclear weapons which Britain and France put to sea are sufficient to destroy hundreds of cities. Despite repeated US references to Chinese ambitions, China's moves are gradual, and China's submarine program so plagued by engineering and operational issues that China cannot match the modern forces of France and the UK, but may have concluded—correctly—that there is no good reason to do so.

Launch on Warning, Launch Under Attack

"It is not the policy of the United States to launch on warning, and it is not the policy of the United States not to launch on warning." With these words, US Secretary of Defense Harold Brown defined a deliberately ambiguous policy. But to the extent that either launch on warning or launch under attack were policy, it implies that an authoritative decision to launch could be made within (say) thirty minutes of the launching of the presumed original attack, and less time if the attack originated offshore. No reflective judgment of the meaning of the 'information' that such an attack was underway could be made in the available time.

The problem is that, within the deterrence paradigm, a wrong answer is being given to the question 'what is needed to deter?' So-called 'prompt response' is not needed, because with just a little planning a small fraction of the nuclear systems available to the United States and to Russia could reliably escape destruction in any imaginable 'first strike' attack, and be available—days, weeks, or even months later—to deliver the payback.

By this logic, proposals for de-alerting nuclear forces, and other measures to ensure time and judgment before nuclear weapons were used, address an urgent need. Unwise, mistaken, unauthorized, and accidental use will be possible as long as 'prompt response' is policy.

While the N5 insist that their command and control of nuclear forces is coherent, responsible, and robust, the tension between being 'ready' and being 'safe' remains a cause of profound concern.

Power of Example

If the N5 and Israel seem to place so much weight on having nuclear weapons 'deployed and ready', why shouldn't other states?

There are good answers. Still, the new readiness of the United States to ignore international obligations, and to persist in long-term retention of its nuclear systems, contradicts its commitment to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

6. should ZNW be a serious goal?

§15 of the 2000 NPT Review Conference conclusions are a vigorous assertion of steps which need to be taken, and an endorsement of the aim of denuclearization. It explicitly confirms the plain meaning of Article VI of the NPT. This was not an NGO meeting. This was the every-five-years required Review Conference mandated by Treaty, and attended by Governments which had signed

and ratified the NPT. The designated representatives of each of the N5 concurred in the Conference conclusions.

In this context it is helpful to keep in mind the key words of the NPT, the World Court Advisory Opinion on the NPT (sought by the UN General Assembly), which is often cited but rarely read, and relevant language in §15.

NPT Article VI

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

Advisory Opinion of the International Court of Justice [Excerpts] (8 July 1996)

99. In these circumstances, the Court appreciates the full importance of the recognition by Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons of an obligation to negotiate in good faith a nuclear disarmament. This provision is worded as follows: "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control." The legal import of that obligation goes beyond that of a mere obligation of conduct; the obligation involved here is an obligation to achieve a precise result nuclear disarmament in all its aspects by adopting a particular course of conduct, namely, the pursuit of negotiations on the matter in good faith.

100. This twofold obligation to pursue and to conclude negotiations formally concerns the 182 States parties to the Treaty on the Non-Proliferation of Nuclear Weapons, or, in other words, the vast majority of the international community. Virtually the whole of this community appears moreover to have been involved when resolutions of the United Nations General Assembly concerning nuclear disarmament have repeatedly been unanimously adopted. Indeed, any realistic search for general and complete disarmament, especially nuclear disarmament, necessitates the co-operation of all States.

101. Even the very first General Assembly resolution, unanimously adopted on 24 January 1946 at the London session, set up a commission whose terms of reference included making specific proposals for, among other things, "the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction". In a large number of subsequent resolutions, the General Assembly has reaffirmed the need for nuclear disarmament. Thus, in resolution 808 A (IX) of 4 November 1954, which was likewise unanimously adopted, it concluded "that a further effort should be made to reach agreement on comprehensive and co-ordinated proposals to be embodied in a draft international disarmament convention providing for: . . . (b) The total prohibition of the use and manufacture of nuclear weapons and weapons of mass destruction of every type, together with the conversion of existing stocks of nuclear weapons for peaceful purposes." The same conviction has been expressed outside the United Nations context in various instruments.

102. The obligation expressed in Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons includes its fulfilment in accordance with the basic principle of good faith. This basic principle is set forth in Article 2, paragraph 2, of the Charter. It was reflected in the Declaration on Friendly Relations between States (resolution 2625 (XXV) of 24 October 1970) and in the Final Act of the Helsinki Conference of 1 August 1975. It is also embodied in Article 26 of the Vienna Convention on the Law of Treaties of 23 May 1969, according to which "[e]very treaty in force is binding upon the parties to it and must be performed by them in good faith". Nor has the Court omitted to draw attention to it, as follows:

"One of the basic principles governing the creation and performance of legal obligations, whatever their source, is the principle of good faith. Trust and confidence are inherent in international co-operation, in particular in an age when this co-operation in many fields is becoming increasingly essential." (Nuclear Tests (Australia v. France), Judgment of 20 December 1974, I.C.J. Reports 1974, p. 268, para. 46.)

103. In its resolution 984 (1995) dated 11 April 1995, the Security Council took care to reaffirm "the need for all States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons to comply fully with all their obligations" and urged "all States, as provided for in Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons, to pursue negotiations in good faith on effective measures relating to nuclear disarmament and on a treaty on general and complete disarmament under strict and effects international control which remains a universal goal". The importance of fulfilling the obligation expressed in Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons was also reaffirmed in the final document of the Review and Extension Conference of the parties to the Treaty on the Non-Proliferation of Nuclear Weapons, held from 17 April to 12 May 1995. In the view of the Court, it remains without any doubt an objective of vital importance to the whole of the international community today.

and the Court's unanimous conclusion:

F. Unanimously, There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.

2000 NPT Review Conference. Conclusions. §15

15. The Conference agrees on the following practical steps for the systematic and progressive efforts to implement Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons and paragraphs 3 and 4 (c) of the 1995 Decision on "Principles and Objectives for Nuclear Non-Proliferation and Disarmament": …

6. An unequivocal undertaking by the nuclear weapon states to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament to which all States parties are committed under Article VI. …

10. Reaffirmation that the ultimate objective of the efforts of States in the disarmament process is general and complete disarmament under effective international control.

Not only are there some countries committed to ZNW, but *all* countries, except for those which are not adherents to the NPT,[32] are committed to ZNW. But we all know that ZNW is not around the corner, the problem to which we now turn.

7. is there a declared readiness to seek ZNW? actions?

Among some non-nuclear weapon states, there is certainly a wish for ZNW. The New Agenda Coalition strives for this end. On 9 June 1998 the foreign ministers of eight countries met and issued a Joint Declaration on nuclear weapon abolition. The eight represented Brazil, Egypt, Ireland, Mexico, New Zealand, Slovenia, South Africa, and Sweden.[33] Their declaration was titled "A Nuclear-Weapons-Free World: The Need for a New Agenda."

The main impetus for their action was expressed in one paragraph of the declaration:

4. We can no longer remain complacent at the reluctance of the nuclear-weapon States and the three nuclear-weapons-capable States to take that fundamental and requisite step, namely a clear commitment to the speedy, final and total elimination of their nuclear weapons and nuclear weapons capability and we urge them to take that step now.[34]

They acknowledge that "the actual elimination of nuclear arsenals, and the development of requisite verification regimes, will of necessity require time," but they insist there are

32 Israel, Pakistan, India and—arguably—North Korea.

33 Slovenia subsequently withdrew from the New Agenda Coalition, reportedly having been the object of orchestrated pressure by some of the N5. The United States reminded Slovenia of its NATO intentions.

34 Joint Declaration, ¶ 4.

practical steps which states "can, and should, take immediately."[35] In that vein, they urge adherence to the NPT, signing and ratifying the CTBT, effecting a fissile material cutoff, non-proliferation precautions, no-first-use undertakings, and nuclear-weapon-free zones. David Andrews, Irish Minister of Foreign Affairs, spoke to the issues, stating that

> The nuclear-weapon States are required to eliminate their nuclear arsenals under the Non-Proliferation Treaty. Their failure to fulfill their legally binding obligations under the Treaty is not the result of any inadequacy in the Treaty itself. It is the result of the lack of political will.[36]

Against the plainly argued position on the New Agenda Coalition, and the conclusions of the 2000 NPT Review Conference, is the fact that the N5 (and Israel, Pakistan, and India) give no sign of moving toward weapon denuclearization, or even agreeing to *discuss* weapon denuclearization as a goal to be sought.

Within days of the end of the 2000 NPT Review Conference, British and US officials distanced their governments from §15. And that was during the Clinton Administration.

Nuclear weapon states have rejected proposals to create a forum within the Conference on Disarmament in which denuclearization could be discussed.

Of course, heads of state and government of the N5 have made repeated statements of deference to ZNW. China's official policy is to seek "complete prohibition and thorough destruction" of nuclear weapons.

Former officials have sometimes been more outspoken, clearly advocating weapon denuclearization, not just blathering. The Report of the Canberra Commission exemplifies such views.

8. is there readiness to plan collective security under ZNW?

None of the N5 is taking ZNW seriously. None is asking "what would we need to do to secure our interests and make for 'international peace and security' in a world without nuclear weapons?" Not having put that question, they have certainly not undertaken the more focused task of planning collective security.

On the other hand, undertaking joint planning, as in NATO and coalition operations requires thinking about coordinated efforts by a multi-national force. Similarly, the post-Cold War rash of intra-state and border conflicts which prompted calls for UN peacekeeping, peacemaking, and enforcement actions led the United Nations Secretary-General to urge creating some standing force on which the United Nations could call urgently if required. Regional multi-national schemes were devised, and employed, to prepare contingents which could be deployed to a troubled region on fairly short notice, but this still falls far short of a UN Security Council enforcement capacity.

One irony of the US Revolution in Military Affairs, and in particular its Global Command and Control System, is that it poses the issue of coalition operations insistently, and promotes some militaries to endeavor to mimic, to some degree, the US system.

But the basic answer to this question is 'no'.

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35 *Ibid.*, ¶ 10.

36 On the Occasion of the Launching in Dublin of a Joint Ministerial Statement "A Nuclear-Weapon-Free World: The Need for a New Agenda'", Statement as prepared for delivery by Irish Foreign Minister David Andrews, Dublin, 9 June 1998

Assessment: The Problematique *in 1995-2003*

What could we say as a concise description of our *problematique* in 2003? What issues are posed, what facts in place, what changes foreseen?

- political authority in Washington—at least for the time being—is in the hands of right-wing ideologues, unilateralists, incautious about the use of force, disdainful of 'old Europe', and dedicated as much to economic and social counter-revolution *within the United States* as to breaking down fabrics of global cooperation woven with great patience since 1945;
- neither the N5 nor Israel, nor Pakistan, nor India shows any real interest in bringing about an end to nuclear weapons; and the US administration, in addition to withdrawing from the ABM Treaty and abandoning the START process, may attempt to break from the CTBT;

- long-standing trends in technology and its practical applications reward complex, vulnerable systems of food processing and distribution, factory production, transportation, communications, and services: vulnerability, especially of large urban populations, increases;

- just as prisons teach crime, so widely-portrayed terrorism teaches terrorism;

- knowledge about 'dangerous technologies', including biotechnologies, is increasingly accessible, as are the technical requirements to exploit them; nonetheless, in the last decade every significant 'terrorist act' except two has relied on guns or *conventional explosives*. The exceptions: Aum Shinrikyo's nerve gas attacks in Japan, and al Qaeda's 9.11 attacks. [The anthrax attack in the United States has not yet been explained. The attempted Stinger attack in Nairobi failed.]

- the Israeli-Palestinian imbroglio centers on mutual terrorism, by the Israeli state against Palestinians, and by the Palestinian underground against Israel and Israelis;

- the fact that Israel is a nuclear weapon state is germane;

- in large and populous parts of the world—China, India, and Europe (even including Russia)—economic institutions and practices suited to sustained economic growth and enhanced access to social goods are increasingly in place, despite complaints about slowdowns in established economies;

- distribution of global social goods—opportunity, longevity, health care, information—remains uneven and unjust.

Is the NPT/IAEA anti-proliferation regime healthy? Clearly not. It has been shown inadequate or ineffective in five instances:

first: in Iraq's conducting a nuclear weapon program to 1991;

second: in North Korea's failure to meet and respect the conditions under which it had joined the NPT have been a source of persistent non-compliance to this day;

third: in India and Pakistan's testing in 1998;

fourth: in the breakdown of UNSCOM/UNMOVIC and IAEA inspections in Iraq in 1998;

fifth: in the inability of the UN Security Council to sustain renewed inspections in Iraq after 18 March 2003, because of the unilateral US attack and invasion against Iraq.

[On 8 June 2003 newspapers reported a 'secret' 1.8 tonne shipment of uranium to Iran in 1991. It remains to be seen whether Iran is substantially compliant with obligations under the NPT, or importantly non-compliant.]

Considering each of these cases:

[1] Iraq to 1991

The IAEA did not have a mandate or powers to search for clandestine nuclear programs. The 'lesson learned' led to UNSC Resolution 687 and IAEA inspections, and to an attempt—calling on voluntary undertakings by sovereign states—to close the door by enlarging IAEA's mandate.

[2] North Korea

See notes below. Even the basic facts in this case are not clear.

[3] India and Pakistan.

Of course, it was known—India announced its test in 1974—that India had earlier exploded a nuclear device. India and Pakistan had not acceded to the NPT. Their actions underscored that a less-than-universal regime was inadequate. It also showed that they were willing to go ahead despite political pressure from other countries, including threats of embargo.

This remains the most serious failure of the NPT regime.

[4] Breakdown of UNSCOM/UNMOVI and /IAEA Inspections in Iraq in 1998

The United States has neglected to stress that ouster of UNSCOM from Iraq in August 1998 followed Iraqi discovery of a US monitoring operation—an electronic spying operation—conducted under the guise of providing useful information to UNSCOM. Until 7 January 1999 the US denied charges that it had used UNSCOM in an attempt to bring down Saddam Hussein; it then claimed Washington was just helping UNSCOM do its job.[37]

[5] Inability of IAEA to Maintain Inspections of Iraq After 18 March 2003

This is not evidence of weakness in the IAEA or the Security Council. It is a simple wrecking effect of a US choice to undermine multilateral inspections in the process of enacting its script for Iraq. Of course, it confirms that if one of the Permanent Members acts with reckless disregard a system of verification and monitoring can be disrupted.

[37] Thomas W. Lippman and Barton Gellman, "U.S. Says It Collected Iraq Intelligence Via UNSCOM," *Washington Post*, 8 January 1999.

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The remaining section is draft, provisional text in which I'm trying to locate the main problems for denuclearization design presented by the cases of Iraq and North Korea. Iran lies ahead.

'Nuclear Proliferation': Iraq & North Korea in Spring 2003

Has Iraq War Changed the Nuclear Dynamic?

At this writing—early June 2003—the world remains unsure how the dialectic between 'UN and IAEA measures' and 'unilateral counterproliferation action' will play out.

For Iraq, UNSC Resolution 1441 of 8 November 2002 set in motion inspections by UNMOVIC and the IAEA. These were then preempted on 19 March 2003 by a unilateral decision of the United States to initiate war against Iraq, begun on that very day with an attempt to assassinate by bombardment senior Iraqi figures including Saddam Hussein.[38] The joint US-British campaign established their control of Iraq. By mid-April focus had shifted to post-war issues. No deployable chemical or biological weapons have been found [as of 8 June], though volunteers have come forward claiming, according to reports, knowledge that CW and BW material had been destroyed or dispersed in the weeks prior to the onset of war. These claims have not been publicly confirmed.

The United States appears insistent on retaining sole control of the search for BW and CW, despite readiness of UNMOVIC to return.

With senior personnel in its hands, the United States will seek to construct a picture of Iraqi BW, CW, nuclear and missile programs to complement—and it no doubt hopes extend and correct—the picture developed through 1998 by UNSCOM and IAEA, and then in 2002-2003 by UNMOVIC and IAEA. No doubt the United States would like to have a complete roster of personnel associated at any time with these programs, access to them, and the freedom to regulate their activities according to its lights. The aim of Israeli and US interest in Iraq's weapons programs will be to prevent their ever being restarted, and to ensure that no material or talent leaks from them to groups which might commit hostile acts. Possession of what may be an incomplete inventory of materials, or an uncertain record of asserted destructions, cannot ensure that no residuum exists. Opportunity to document and crossfile information about personnel from multiples sources, however, promises some probability that a nearly complete personnel roster could be compiled. With time, these same results could also have been achieved by UNSCOM and IAEA, with little likelihood—under the glare of systematic, large-scale inspection—that Iraq would have chosen to use any weapons in its hands or pass them to others. Of course, the US action prevents us from knowing with certainty that UNSCOM and IAEA would have succeeded, but it also prevents us from knowing, or having any evidenced reason to believe, that they would fail.

[38] Noting earlier ultimata by the United States, UNMOVIC and IAEA had days previously withdrawn inspectors for their own safety.

Did the United States deliberately withhold information from UNMOVIC and the IAEA? Or was the 'information', on which the United States based its claim that Iraq possessed stocks of CW and BW materials, faulty? Evaluating the 'search'-'preempt' dialectic will require endeavoring to answer those questions.

What does the Iraq case—from 2 August 1990 through April 2003—tell us, most importantly:

1 CW and BW programs are much more easily undertaken clandestinely than a nuclear program.

2 Vigorous multilateral on-site inspection, with powers to interview, can contain a weapons program below the threshold of military utility.

3 'Counterproliferation' by self-selected enforcers can also suppress unwanted weapons programs, but doing so confirms the use of unilateral violence and denigrates the role of collectively set norms and collective enforcement.

4 More thoroughly prepared 'whistleblower' techniques could have been of significant assistance to UNSCOM, UNMOVIC and IAEA.

5 The Iraq case does not disconfirm claims for 'societal verification' of countries whose nationals can freely come and go.

6 Some knowledge (how to make CW and BW agents, and nuclear weapons) exists in any large modern society, as do chemical precursors of CW and starters of [some] BW agents. But it appears difficult to convert this knowledge, or precursors, into a militarily significant capability.

7 The threats—real and hypothetical—which could actually endanger or destroy a city are few: nuclear weapons, anthrax, and some yet-not-designed designer pathogen. All other 'weapons of mass destruction' are limited in scope and lethality, certainly nasty and to be avoided if possible, but not society-destroying.

8 Nurturing collaborative enforcement of agreed multilateral counterproliferation measures requires cultivating a reputation for truth, respecting the participation of others, and acknowledging their need to conduct their ongoing deliberations and negotiations free of improper interference. US and UK charges exceeded the evidence, though the degree of that exaggeration, and how it came about are subjects of several investigations. We do know that US intelligence officials called for systematic surveillance of the communications of members of the UN Security Council, with the exception of Britain, at a time when the United States was offering bribes and threatening penalties in an effort to line up Security Council votes for its resolution.[39] Mutual respect is not built in this way.

[39] Martin Bright, Ed Vulliamy, and Peter Beaumont, "Revealed: US Dirty Tricks to Win Vote on Iraq War: Secret Document Details American Plan to Bug Phones and eMails of Key Security Council Members," *The Observer*, 2 March 2003 http://www.observer.co.uk/iraq/story/0,12239,905936,00.html ;Frank Koza, memorandum to [Recipients withheld], sent 31 January 2003, "Reflections of Iraq Debate/Votes at UN-RT Actions + Potential for Related Contributions," http://www.observer.co.uk/iraq/story/0,12239,905954,00.html; see Jeevan Vasagar and Richard Norton-Taylor, ":GCHQ Worker Held After Leak: Release of Memo Reflects Deep Unease in Whitehall," in *The Guardian*, 10 March 2003
http://politics.guardian.co.uk/whitehall/story/0,9061,911099,00.html; *Newsday*, 4 March 2003
http://www.newsday.com/news/nationworld/world/ny-wounit0304,0,427953.story?coll=ny-worldnews-headlines;

But has the Iraq War changed the nuclear dynamic? It has allowed the United States to practice new technologies, including information technologies. It may prove, but has not yet, that the United States has crafted a set of practical 'last resort' techniques which, applied together, can bring others' nuclear weapon programs to an end. But if the IAEA effectively achieved that result by 1998, the Iraq War will not have played a useful role in that respect.

Non-Proliferation Treaty provisions for 'safeguards' were shown, in the aftermath of the Gulf War (1990-1991), to be insufficient and miscast: they were unsuited to detecting a clandestine nuclear program undertaken by a determined, closed, ruthless police state. Two steps were taken. A rigorous inspection and destruction program was undertaken, initially under UNSC Resolution 687. A cumbersome process was begun to widen IAEA's effective role in assuring NPT compliance: a model for new compacts between IAEA and its members was drafted, and with member states' negotiation and signing of agreements the capacities of the IAEA are being gradually enhanced.

On the other hand, the United States—seemingly intent on sabotaging UNSC-mandated weapons inspections and IAEA's ability to work in Iraq—on 19 March 2003 began war against Iraq and substituted its own hunt for weapons. What may be found, and what its evidentiary status may be, remain to be seen. We do know, from early reports, that the US-British military presence has not secured suspect sites—which have been in some cases subject to access and looting after an initial inspection—and that US military inspectors have not been accompanied by independent evaluators who could testify to the archaeological integrity of the finds and the analytic integrity of laboratory analyses. Moreover, there may be alternative, non-'WMD' explanations for some 'finds', but no systematic source of local knowledge about practice nor any independent panel to evaluate the purpose of such 'finds' is in place. In short, a less-than-ideal but reasoned and careful UNMOVIC/IAEA inspection process has been replaced by an autochtonous US quest by men and women whose intentions may be pure and who have access to advanced technology but who have never previously conducted any exercise like that which they have been ordered to undertake in Iraq, who cannot guarantee the security of the sites, who do not control the process of self-criticism and evaluation of their findings, who do not control the physical integrity of samples, containers, papers, and other evidence, and who are denied the presence of independent guarantors of the professionalism and integrity of their work. To the extent that what is released about this process is governed by US policy choices, rather than a commitment to historical and scientific accuracy and completeness, the process itself will be suspect as crude and instrumental. Its 'findings' will be disputed, and any significance they might have had for judging the process of UN-mandated weapons inspections will be sacrificed.

What is North Korea Doing?

If the clues to Iraq's actions are lost in the disarray of war, North Korea's intentions are concealed in deliberate uncertainties. Does North Korea possess nuclear weapons? Could it deliver them? Will it make more?

The main events in the eight months from October 2002 through May 2003 are:

- 4 October 2002: North Korean officials tell a US delegation in North Korea that Pyongyang is pursuing uranium enrichment [see below].

- 16 October 2002: the United States announced that it had told North Korea that it knew a uranium reprocessing program existed, and the North Korean interlocutor confirmed existence of the program.

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- 12 December 2002: North Korea announces that it is reopening its plutonium reprocessing facility at Yongbyon
- 27 December 2002: North Korea ordered IAEA inspectors to leave Yongbyon
- 10 January 2003: North Korea declared its intention to withdraw from the Nuclear Non-Proliferation Treaty (NPT).
- 6 February 2002: North Korea announces that the Yongbyon reprocessing facility is open.
- 23-24 April 2003: US and North Korean negotiators met in the presence of a Chinese participant/observer. On the 23rd North Korea told the US ambassador, according to reports, that it had 'nuclear weapons'. The meeting ended early the following day.[40]
- 13 May 2003: North Korea announced that its 1992 agreement with South Korea barring deployment of nuclear weapons on the Korean Peninsula was a dead letter.[41]
- 9 June 2003: North Korea said *publicly*—what had previously been said only in private conversations with US officials—that it needed a "nuclear deterrence" to counter the US "hostile policy" including a "nuclear threat" against North Korea.[42]

These events come at the end of a 17-year process to address North Korea's nuclear intentions. The closed and unpredictable nature of North Korea's government, and the fifty-year history of its armed standoff with South Korea in the wake of the Korean War, have prompted great concern about what a nuclear-armed North Korea might mean, not only for South Korea but also for Japan and, in turn, their ally the United States. On the other hand, a very different reading of North Korea's path stresses its leadership's wish to keep control despite economic failure and the global norm of 'reform', and takes its use of the nuclear weapons card as a tactic to extract deliveries of aid.

Is the North Korean government's contention that it is threatened by the United States sound? Would a 'reasonable man' believe that Washington would depose Kim Jongil by force? Perhaps not. The problem is that declarations by the GW Bush group are sufficiently threatening that a 'reasonable North Korean' could well believe that Bush et al. wish to bring Kim Jongil down. Bush's 29 January 2002 State of the Union message, citing North Korea among the 'axis of evil' is oft-cited. The Iraq War must have sent a shock through Pyongyang. And North Korean intelligence can read in the US

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40 The texts of actual exchanges are not available. According to the Associated Press, "A U.S. official said the North Koreans implied during the talks that they have nuclear weapons and that they may conduct a test. Another administration source said the North Koreans never used the word 'test'." AP, 24 April 2003.

41 Formally, the Joint Declaration of the Denuclearization of the Korean Peninsula. Signed 20 January 1992, and entered into force 19 February 1992. The text begins by stating that the Parties "declare as follows"

1. South and North Korea shall not test, manufacture, produce, receive, possess, store, deploy or use nuclear weapons.
2. South and North Korea shall use nuclear energy solely for peaceful purposes.
3. South and North Korea shall not possess nuclear reprocessing and uranium enrichment facilities . . .

Source, with comment on its link to the Agreed Framework, at the Nautilus Institute site: http://www.nautilus.org/pub/ftp/napsnet/special_reports/LinkDPRK.txt [Seen 19 May 2003].

42 *International Herald Tribune*, 10 June 2003, quoting the Korean Central News Agency.

press lines such as that "the United States says it wants to use talks to resolve the nuclear crisis, although American officials have not ruled out a military option."[43]

So North Korea asserts that its independence requires a nuclear deterrent force.

4 October 2002: A Uranium Program?

For ten years focus had been on *plutonium* which could be extracted from the 8000 spent fuel rods North Korea had accumulated from its reactor at Yongbyon. Then in October 2002 a second route to a nuclear weapon was declared: *uranium* enrichment. There are sharp scale and timing differences between the two paths, in North Korea's case, unless the uranium program is much further advanced than it appears. Once plutonium were extracted, which would be a matter of months once reprocessing were begun, it could be rather quickly fashioned into weapons, though still only a few. Pu extraction separates one element from others; gathering U^{235} is done by separating U^{235} from different isotopes of uranium, a harder task for chemist.

Nonetheless, North and South Korea agreed in 1992 that they would forego uranium enrichment. The 1994 US-North Korean Agreed Framework incorporated that commitment. Even if uranium enrichment were only being done on a laboratory scale, or in gram quantities, insufficient to build even a single nuclear weapon, it would be in violation of those texts.

It has not been divulged how the United States learned of the uranium enrichment program. Nor is it clear why North Korean interlocutors confirmed it.

North Korea Withdraws from the NPT: 10 January 2003

On 10 January 2003 North Korea declared its intention to withdraw from the Non-Proliferation Treaty [NPT]. The NPT provides a right of withdrawal.[44] However, in announcing its intentions, North Korea declared that its withdrawal would be effective on the following day, 11 January 2003.[45] IAEA head Dr. Mohamed ElBaradei, commenting on North Korea's action, observed that the NPT required three month's notice.[46]

The North Korean statement also said, however, that North Korea had no intention of producing nuclear weapons:

> North Korea blamed what it said was US aggression for its decision to withdraw from the treaty.
>
> "We can no longer remain bound to the NPT, allowing the country's security and the dignity of our nation to be infringed upon," the North Korean government said in a statement carried on KCNA, its official news agency.
>
> "Though we pull out of the NPT, we have no intention of producing nuclear weapons and our nuclear activities at this stage will be confined only to peaceful purposes such as the production of electricity," KCNA said.[47]

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43 Associated Press, in *International Herald Tribune*, 14 May 2003. The reference is to remarks by Colin Powell on 24 April.

44 Treaty on the Non-Proliferation of Nuclear Weapons. U.N.T.S. No. 10485, vol. 729, pp. 169-175:
Article X. 1. Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

45 Christopher Torchia, Associated Press, 10 January 2003.

46 Text of IAEA press release, 10 January 2003.

47 Guardian Unlimited, 10 January 2003.

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The 22-24 April 2003 US-North Korean Negotiations, in China's Presence, in Beijing

Did the North Korean negotiator tell his US counterpart James Kelly that North Korea had nuclear weapons, or not? According to CBS, a senior US official said that

> North Korea said for the first time during that meeting that it had nuclear weapons and was contemplating exporting them, depending on U.S. actions.

but

> In Beijing, Chinese Foreign Ministry spokesman Liu Jianchao questioned whether North Korea had actually made such an assertion. He said that as far as he knew, they have "not made such a statement."[48]

The difference might be reconciled if it is understood, as one report had it, that Kelly was told this over lunch.

The 13 May 2003 Renunciation of the1992 North-South Agreement

North Korea explained its 13 May 2003 renunciation of the 1992 North-South denuclearization agreement as required by need for a deterrent force:

> The Iraqi war taught the lesson that "nuclear suspicion," "suspected development of weapons of mass destruction" and suspected "sponsorship of terrorism" touted by the U.S. were all aimed to find a pretext for war and one would fall victim to a war when one meekly responds to the IAEA's inspection for disarmament.
>
> Neither strong international public opinion nor big countries' opposition to war nor the UN Charter could prevent the U.S. from launching the Iraqi war.
>
> It is a serious lesson the world has drawn from the Iraqi war that a war can be averted and the sovereignty of the country and the security of the nation can be protected only when a country has a physical deterrent force, a strong military deterrent force capable of decisively repelling any attack to be made by any types of sophisticated weapons.
>
> The reality indicates that building up a physical deterrent force is urgently required for preventing the outbreak of a nuclear war on the Korean Peninsula and ensuring peace and security of the world, now that the U.S. does not show any political intention and will to renounce its hostile policy toward the DPRK.[49]

They cite press reports that the January 2002 US Nuclear Posture Review anticipated use of nuclear weapons in a 'contingency' on the Korean peninsula.

Questions in the North Korean Case

What *don't* we know? We do not know a number of the key facts on which policy choices would be made. Perhaps *we* don't know, but US officials know, or believe they know. However, after Iraq US official credibility is in tatters: many believe Washington lied. If US officials actually have a better picture than they reveal in public, we hope that information is fully taken into account in forming policy. However, if the issue is explaining a chosen policy to people outside government, in the United States and elsewhere, then mere claims unsubstantiated by evidence will be viewed with skepticism.

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48 CBS News. http://www.cbsnews.com/stories/2003/05/05/world/main552322.shtml [Seen 14 May 2003.]

49 Korean Central News Agency (KCNA) [North Korea], "U.S. to Blame for Derailing Process of Denuclearisation on the Korean Peninsula," 13 May 2003.

We can identify these key technical and political questions. It is not that there are no claims, no sources to cite, no newspaper references to 'intelligence sources', but that assertions have been made which have not been confirmed by persuasive evidence in the public realm:

Technical Questions

[1] *Plutonium reprocessing*. Has it begun? Is weapon-suitable plutonium being accumulated? In what quantities and at what rate?

[2] *Plutonium production*. Are the 8000 spent fuel rods at Yongbyon the limit of North Korea's reprocessing stock? Or is a reactor in operation, promising further stock?

[3] *Nuclear weapons.* Are there in fact 'two' nuclear weapons already in a North Korean stockpile?

[4] *Uranium enrichment.* What is the scale and production of the uranium enrichment program? How much 90% ^{235}U can be made in a year?

[5] *Miniaturisation.* Is North Korea able to make a nuclear warhead light and small enough to be mounted on a missile?

[6] *Range*. What targets could a missile, carrying a warhead of that size and weight, strike?

[7] *Preemption and preclusion*. Does the United States have the technical capacity to identify preparations to launch a nuclear-armed missile and, promptly, intercede to prevent the launch? Does it effectively monitor against aircraft delivery of a nuclear bomb? And does it surveil ocean traffic thoroughly enough to preclude delivery of a device by sea?

Political Questions

[a] *North Korean intentions.* Is North Korea bent on achieving and deploying a deterrent nuclear force? or could North Korea be satisfied by political guarantees—and then just what guarantees, how extensive, by whom, and how made credible—against attack?

[b] *White House intentions*. Is the Bush Administration bent on refashioning the North Korean system by force, as it removed Saddam Hussein in Iraq? or would it participate in political guarantees in exchange for North Korean abandonment of nuclear weapon and missile programs?

[c] *'Missile defense' synergism.* A North Korean 'missile threat' lends impetus to White House plans for 'theater missile defense' and 'national missile defense'. Is persistence of this 'threat' in the White House's domestic political interest?

[d] *US-Japan synergisms*. Conservative political forces in Japan and the United States both profit politically from the appearance of threats to security. Does this diminish their will to find a peaceful resolution to the Korean affair?

[e] *Korean unification*. Does any government, other than that of South Korea, view Korean unification as a goal?

[f] *North Korean reform?* Under what circumstances would North Korea's leadership adopt a 'Chinese solution' to its systemic economic failure, with strong incentives—in turn—for resolution of the nuclear issue?

[g] *Japan*. Is there any serious move in Japan toward an independent nuclear weapon capability?

Assessment

Just setting out the questions so directly suggests how difficult the 'North Korean question' may prove to be. It reduces to two problems: North Korea's concealment of nuclear facts and expectations, and opaque White House 'policy'. Perhaps both Kim Jongil and 'Dick' Cheney believe they gain by the *status quo*.

Although it would be easy to claim that the dramatic events of 2002-2003 in Iraq and North Korea have significantly changed the calculus of nuclear proliferation and non-proliferation, that would be wrong. US policy choices have been flawed, but the combination of insistent inspection and deliberate restraint, developed through the 1990s first with respect to Iraq and then in response to North Korea's hedging on its commitments, remains absolutely right.

Sanctions and talk of sanctions, on the other hand, have not helped. Greater security and stability lie in peoples' moving back and forth between these countries and others, typically in pursuit of economic aims.

White House Iraq policy does not show that the UNSC and IAEA were wrong. On the contrary, it shows that there is no reason to believe inspections, if allowed to continue, would not have worked. The North Korean case does not show that the Agreed Framework—however flawed—was the wrong move at the time; it may show that the United States wounded itself by failing to deliver on commitments under the Agreed Framework during the Clinton and GW Bush administrations; but the Bush Administration's unreadiness to talk with North Korea, and its humiliation of South Korea's leadership and its 'sunshine policy', can only be judged reckless.

So the two foremost questions are these. In Iraq: how can the results of inspection and interrogation be made *credible* to non-US doubters? In North Korea: what does North Korea want which others can reasonably offer, in return for adhesion and adherence to the NPT?

So What Policy Should the Principals Adopt Toward North Korea?

A number of highly-qualified students of the nuclear *problematique* have wrestled with the 'North Korean problem' and been willing to share their judgments. Rose Gottemoeller, suggesting we learn from experience with Ukraine, identifies three key factors: the 'unequivocal goal' to get nuclear weapons out of Ukraine, unstinting attention from the White House, and "clear demands on all parties, with deadlines and penalties." Ukraine was given security assurances, aid in eliminating weapons, and energy assistance. She carefully notes that North Korea presents a different case than that of Ukraine, but concludes that a program like that used in Ukraine's case could work.[50]

IAEA Director-General Mohamed ElBaradei, whose work to accomplish the mandated inspection of Iraq was dismissed by the United States, recommends six steps to achieve a system of collective security to bar weapons proliferation. First, modernize the Charter, bringing new powers into the Security Council, and readying a force the Security Council could use to intervene. Second,

[50] Rose Gottemoeller, "North Korean Nuclear Arms: Take Ukraine As a Model." *The New York Times*, 28 April 2003.

limit use of force to self-defense and UNSC-mandated enforcement: 'pre-emptive strikes' risk entering dangerous territory. Third, delegitimise acquisition and use of WMD. Fourth, prevent WMD reaching terrorists. Fifth, address "decisively" chronic disputes: establish "a region free from WMD" in the Middle East which, though he does not mention Israel, would include the surrender of Israel's nuclear weapons. Sixth, address social and economic sources of insecurity and instability.[51]

ElBaradei's prescription may strike one as broad and inspecific, but he calls for a number of politically difficult yet essential measures to achieve justice and contain unbridled force. They suggest criteria to apply to proposals on North Korea.

Nautilus Institute founder Peter Hayes addressed the issue of North Korea on 27 May 2003, sketching with colorful mnemonics six alternative strategies, only one of which could achieve the US aim of denuclearizing North Korea without war:

> A 'scalpel' strategy of surgical attacks on their nuclear facilities cannot ensure we are hitting their fissile materials. A 'nutcrucker' strategy that tries to induce a military coup against the Kim regime may fail or, worse, result in an even more reactionary regime escalating to a civil war. A 'sledgehammer' strategy to crush North Korea by all-out military attack would work, but involves vast destruction and possible use of weapons of mass destruction. A 'black hole' strategy that squeezes North Korea until it collapses is very dangerous because control of its nuclear capacities could be lost altogether, with untold consequences for Seoul or elsewhere. Simply ignoring and keeping our distance from the White Hot Deathstar won't work either--they will simply proceed to acquire nuclear weapons. That leaves only the 'boa constrictor' strategy--embracing North Korea and transforming it by unleashing precision-guided markets and non-governmental organizations to transform North Korea slowly, inside out. That strategy might work provided it is buttressed with strong external deterrence.[52]

Three of Hayes' scenarios describe paths to 'regime change'. The fourth is coercive as well, bombing nuclear facilities. The fifth is to do nothing, which he believes would lead to a North Korean nuclear capability. But that, of course, is what policy is to avoid. The sixth, which Hayes advocates, is a strategy of transformation by loving embrace.

As Hayes points out, 'regime change' is not the objective, in and of itself. The aim is denuclearization without war. And that can only be achieved with the cooperation of the North Korean authorities, whether Kim Jongil or someone else. It doesn't seem likely that cooperation can be achieved by declaring North Korea part of an 'Axis of Evil', however make-believe the 'axis' may be. And what of 'pressure'? At the end of May 2003 the Japanese press is full of the formula 'dialogue and pressure'. But 'pressure' is not some abstract thing: it is deliberate coercions intended to make some wanted paths more difficult and some unwanted paths more necessary. Rose Gottemoeller's citing "clear demands on all parties, with deadlines and penalties" in the Ukraine experience identifies a specific type of pressure, one related exactly to a performable demand, so that the question whether the penalty will be imposed is put into the hands of the party whose action is sought. Bush's 'pressure' and Koizumi's 'pressure' may not be identical, but they seem to be different from 'non-performance penalties', since they seem to go forth spontaneously, *ab initio*, and to have a more general coercive purpose. The difference appears to lie in the fundamental framing of the episode: is it framed as a *coercion* or is it framed as a *negotiation?* Because however strenuously coercers may try to pass off their moves as 'negotiation', the coerced will know better. And their cooperation, in turn, will be withheld, the least of their responses.

Hayes has long been interested in North Korea's energy requirements, and he has the further merit of believing that 'appropriate technology' could bridge part of the gap. Almost all analysts who reject war believe that North Korea requires some boost out of its energy-poor, food-poor,

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[51] Mohamed ElBaradei, "Seek Alternatives to Pre-Emptive Strikes," *Asahi Shimbun*, 28 May 2003.

[52] Peter Hayes, speaking at the Commonwealth Club, San Francisco, 27 May 2003. http://www.nautilus.org/ [Seen 31 May 2003] Nautilus convened a workshop on North Korea on 29-30 May 2003. The report of its work was not yet available at this writing.

technology-poor circumstances. That will require renewing—rebuilding from scratch—the North Korean energy grid, which could not accommodate the output of reactors underway if they were to be completed; supplies of energy, including fuel to produce electricity; direct supply of electricity from South Korea; and a performable plan to achieve indigenous North Korean electricity production at levels required to meet present and future needs.

Precaution, Emergency Response, and Denuclearization Design

Arms limitations, non-proliferation under safeguards, technology and precursor transfer control, and 'counter-proliferation' are discursively dissimilar, and rely upon distinct practices.

Each may, however, contribute to immediate security. Used to freeze the *status quo*, they would give states time to devise politically acceptable means of weapon denuclearization, from which abolition and prohibition(ZNW: zero nuclear weapons) would ensue, As practiced, however, they support long-term nuclear dominance, whatever other ends are served. The tension between weapon and non-weapon states in the NPT is mirrored in ongoing anti-proliferation measures. 'Counter-proliferation' could be a negotiated practice, undertaken by the Security Council, a shift in means but not in acknowledged authority. But 'counter-proliferation' by a state acting alone shifts both means and decision. It contradicts the Charter, and it undermines the quest for consensually agreed voluntary restraint.

As in the 1940s, there is today no agreement on agenda. Do nuclear weapons make for peace, or for intrinsic unprecedented hazard? Should stockpiles be maintained, or destroyed? Is the goal *management* or *abolition*? Is civil nuclear power consistent with safety from nuclear war? Should the sanctioned uses for nuclear weapons be more, or fewer? What governments judge useful to discuss with other governments, what unilateral and negotiated measures they might take, are governed by their answers to these questions.

In 1945 the process was overshadowed by a war in its fourth year. The war was an 'emergency'; the response was Hiroshima and Nagasaki. There was disagreement, and uncertainty, about what prudence required: controlling the atom, or keeping a cudgel to use against Stalin. In this vein, it is useful to distinguish precautions, emergency responses, and designs for denuclearization.

	EXAMPLES: TREATIES, PROPOSALS, AND ACTIONS
• precaution	PREVENTION: Outer Space Treaty, SALT II, NPT, IAEA Safeguards. [Comprehensive precautions are envisaged in the Acheson-Lilienthal Report and a proposed Nuclear Weapons Convention.]
• emergency response	*AD HOC* RESPONSES: Cooperative threat reduction measures, securing fissile material, UNSC Resolution 687, creation of Nuclear Emergency Response Teams and their analogues.
• denuclearization design	PLANNING: Assume that weapon denuclearization had been decided upon. How would it be done? and maintained? and how would security be assured in a ZNW world? [The Acheson-Lilienthal Report and the proposed Nuclear weapons

Convention are examples of design exercises.]

In this schema, the 2003 US-UK war against Iraq was a 'war of choice' masquerading as an emergency response to nuclear, chemical, and biological weapons programmes.

Have governments asked 'could we achieve ZNW? how would we do so?' The nuclear weapon states have come forward with a number of proposals since 1945, but there is no such thing—for example—as an Office of Denuclearization, or a Planning Agency for the Elimination of Nuclear Weapons. Once upon a time there was a US Arms Control and Disarmament Agency, but 'disarmament' has been dropped from the title of its successor organization. A project on 'Nuclear Futures' at Los Alamos National Laboratory was certainly not a project to study a denuclearized future.

By contrast, some non-nuclear weapon states have committed to support studies and initiatives in denuclearization. We mentioned above the seven states of the New Agenda Coalition. The Swedish Government's creation and support of the Stockholm International Peace Research Institute is a signal exception to governments' avoidance of nuclear weapon issues. The United Nations system includes the United Nations Institute for Disarmament Research. There are a large number of focused research efforts in private organizations and at universities. But *governments*—and especially those of nuclear weapon states—have done little.

Conclusions: Comparing 1943-49 and 1995-2003

In an odd fashion, juxtaposition of each of the 'proliferation cases' of 2003—Iraq, North Korea, Iran—to external players seeking to extend 'international control of atomic energy' to those three countries *mimics the failed wish of good faith advocates of the Baruch Plan to engage the Soviet Union within a global control regime.* Obviously, much could be made of differences between the cases. But there are similarities. Iraq and North Korea were governed by repressive regimes. After the Iraq War (2003) North Korea and Iran must consider US attack a credible possibility. North Korea is the classic case of a closed society.

None of the three was, or is, prepared to surrender its identity to external powers, whether the United States or the IAEA, without resistance.

We need to remind ourselves that there were advocates of 'preventive war'—preventive *nuclear* war—to be waged against the Soviet Union before it could fully develop nuclear forces. [There were analogous thoughts in the 1960s of attacking Chinese nuclear installations. Again, ironies: some US officials thought the right people to do this were the Soviets.] 'Preventive war' is the correct name for a war undertaken months or years in advance of an anticipated attack by another power. The US action in Iraq was not a 'preemptive war', based on knowledge of an imminent attack afoot, but a 'preventive war' … if it was in fact based to any significant extent on anticipation of attack on the United States or Israel.

It is not a new finding—it was evident in 1945—that the principal obstacles to focused consideration of ZNW are two: first, that in at least one nuclear weapon state, having nuclear weapons is believed by political elites to convey advantages far greater than those of giving them up; and, second, that in at least one nuclear weapons state, a governing party's commitment to achieving negotiated ZNW would mightily tempt a political opposition to indict the government on grounds of inadequate concern for 'national security' and the 'threats in this uncertain world'. These obstacles can be addressed, but only by having *more than one alternative on the table*. At the present time *only*

the status quo is offered as a choice. The object of designing denuclearization is to create vivid, thoughtful, systematic, and coherent alternatives, so that policy-makers and public can visualize how denuclearization could be achieved and sustained.

I will conclude this note with a story. The world's first major reactor accident took place at Chalk River, Canada, in 1952; and the United States sent some qualified personnel to assist the Canadians in their response.[53] Forty years later, one of those persons went to North Korea to help avert war over nuclear reprocessing. Can you identify him? [Don't look.][54]

Tokyo, 11 June 2003
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A Note Introducing

Projects on Denuclearization Design

Barring a terrible accident which catalyses nuclear abolition, the route to denuclearization will require extended and thoughtful preparation. This note takes *design* as one of the preliminaries to denuclearization. (Other preparations would include *assessing* our current circumstances, and *discussing* what is known and believed about nuclear weapons so that *informed learning* takes place.)

Introducing the notion of *projects on denuclearization design* has a threefold purpose. It emphasizes design, an imaginative praxis. It packages design work in a form—the 'project'—familiar to institutions. And it suggests that *many such projects could be undertaken simultaneously*.

Why 'design'?

Denuclearization is a goal, and both the transition to ZNW and subsequent ZNW maintenance must be well-conceived in advance: otherwise ZNW would be a pig in a poke. Politics is an intentional activity. To achieve ZNW will require coordinating action in a number of distinct states

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[53] How serious? There was an inadvertent supercriticality and partial meltdown, and "some release of radioactivity." [Citations to John May 1989 and Weinberg 1994]. John May, *The Greenpeace Book of the Nuclear Age*, Pantheon Books, New York, 1989. Alvin M. Weinberg, *The First Nuclear Era: The Life and Times of a Technological Fixer*, American Institute of Physics, New York, 1994. http://www.science.uwaterloo.ca/~cchieh/cact/nuctek/accident.html [Seen 10 June 2003]

[54] The answer: Jimmy Carter. It is widely claimed, and accepted by some, that Carter's 'unofficial' intervention in 1994 averted war against North Korea. I've also heard a story, but have not confirmed it, that one day (perhaps pre-1949) he stepped off a submarine onto Chinese territory. Carter is a 1946 graduate of the US Naval Academy.

and organizations, instituting new tasks, and even creating novel institutions. How to do this—what steps to take? what steps to avoid?—requires imagined entities and practices. Each of these must be designed.

Design implies drafting, and a resultant draft. A draft can be shared, debated, and revised. Both broad strategy to achieve denuclearization, and smaller-scale elements, will need to be drafted and redrafted, through many iterations.

Who would undertake a design project?

Anyone, any group, any organization, institution, or government could do so. We foresee projects of government departments, weapons laboratories, universities, environmental organizations, cities, relevant technical divisions of corporations, law firms, militaries, and *ad hoc* groups of colleagues with a shared interest in some aspect of the denuclearization problematique. We imagine joint projects—undertaken, for example, by laboratories pooling resources to address shared concerns—and explicitly parallel projects—in which two or more sites would pursue the same problem, to gain from the variety in their results.

We envision projects as *autonomous*, free from being organized as parts of a whole. Of course, they could be subject to their initiating source. But we wish to avoid any hint that the projects and their personnel are of one mind, one purpose, one organization. Some projects, for example, would usefully challenge the assumption that ZNW would be safe: in fact, it is important that some do so. So a project could yield reasons why the goal of denuclearization is unsound.

Why, then, not just encourage studies a la carte*?*

We wish to gain by following two common principles: first, that projects share the starting point that denuclearization is agreed, and then explore 'how' to do it (including what difficulties may be faced and how to overcome them), and second, that projects and their results be open.

Our aim is to bypass—or leave to others—the question whether the advantages of retaining nuclear weapons outweigh the gains in giving them up.

No doubt some governments will prefer, especially at the outset, to study denuclearization in secret. That is fine. But such studies would not be in keeping with the spirit of this proposal. We would hope that, in time, those governments would undertake design work in public. We would make the argument that a nuclear weapon state will be able to take into account the interests of others only when they know them, and appreciate the inquiries which have led them to define interest in specific ways. In a necessarily collaborative world, interest is best-served by openness.

Nothing about these projects precludes studies begun from other starting-points. For example, assuming that (i) denuclearization is *not* on the agenda but (ii) nuclear weapons and fissile material stocks pose dangers which must be urgently addressed, studies may yield results of great interest to those who assume denuclearization *should* be on the agenda. [See, for example, § VII on urgent interim and preliminary measures.] Similarly, studies assuming that (i) nuclear weapons will be desirable in the long-term and therefore (ii) zero-failure nuclear weapons management is necessary, may cast doubt on the likelihood of zero-failure management.

What is meant by a 'project'?

All that's meant is a defined, focused inquiry (or purposes which support inquiry) undertaken by a group according to a plan, to yield results which can be shared. A typical project would address a question: for example, "how can near-simultaneity of step-level decommissioning of nuclear systems be achieved? and what constitutes near-simultaneity adequate for this purpose?" Or "in a ZNW

world, what level of police and coastguard forces could be maintained without prompting others to perceive a war threat?" This volume emanates from a project to encourage inquiry.

Just as projects are autonomous, there is no purpose in projects following rules of shape or form. It is likely that a project will develop a summary of intentions, an expanded description of purposes and methods, and systematic means of reporting results and communicating with others. We imagine a project supporting an explanatory web site. A project's duration might be brief, its purposes *ad hoc*, or it might be sustained, even indefinitely.

What about encouraging other projects?

Many well-conceived projects would be much better than a few. We encourage others to design and launch projects reflecting their own concerns, resources, and personnel. We imagine an 'about this project' page on any project website, on which it would be appropriate to acknowledge any role of prior projects in sparking the new one.

How large a group is required to undertake a project?

A project could be devised and carried through by one person. Imagine a student interested in League failures in the 1930s. She or he could query a case—Manchuria, Ethiopia—asking what insights into sustaining ZNW could reasonably be inferred from the case.

At the other extreme, an ongoing research center or government department might detail tens of people to address a complex and vexing problem. How might sponsors of a clandestine nuclear program, for illustration, conceal a uranium mining initiative inside what was ostensibly an above-board commercial phosphate fertilizer operation? And what would paths toward concealment suggest for methods of detection? What costs would be associated with alternative practices to guard against such deceptions? And how would one gauge the relative merits of spending against this deception, rather than other types of clandestine programs?

The most common projects are likely to lie somewhere in between, with three or four researchers focused on a well-defined issue.

How would projects be funded?

Project costs would range from near-zero to millions of Euro. Institutions would fund denuclearization design projects exactly as they fund existing work: from their customary sources, including public and private donors.

External funding often implies a need to show accomplishment, so projects might be drawn up to yield intermediate results.

What is the role of a sponsoring institution or government?

That's completely in the hands of the sponsor and its project. Universities undertake such studies as part of their broad mandate in research and learning. Governments do studies to sharpen policy, and to look over the horizon of time to opportunities and challenges which may arise in the future. Corporations study in part to understand future competitive environments.

Nuclear weapons present a global threat, but a given locality might focus on its special vulnerabilities: for example, a coastal port might choose to study risks from weapons or fissile material moving by ship and rail in standard steel containers.