

Commentary: *On Nuclear Deterrence*

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Albert Wohlstetter was the most important strategic analyst and thinker of our time. His ideas were the foundation of the overall nuclear strategy of the John F. Kennedy and Lyndon B. Johnson Administrations. His insights, recommendations, and ensuing policies greatly reduced the otherwise high danger of a thermonuclear war.

On a more personal scale, Albert was one of the most important influences in my life: father-figure, teacher, mentor, and friend. He was the intellectual godfather of the Systems Analysis Office that I created and led in the 1960s under the direction of Charles Hitch and Robert McNamara.¹

Albert's effect on defense policy was profound and far-reaching. He was the father of strategic analysis based on systematic, empirical, and interdisciplinary studies. Indeed, he raised the standards for what could pass as an analysis of a policy issue in subsequent years. Albert searched out and asked the most fundamental questions. He insisted that the actual details—missile accuracies, reliabilities and payloads, bomb yields, blast resistance, bomber ranges, operating characteristics, costs, and much more—mattered and must be factored carefully into a systems analysis. Nuclear deterrence could not be dealt with sufficiently at a level of generality that did not consider such details.

Economics typically focuses on analyzing choice among a defined set of choices. For Albert, however, *out of analysis* emerged new choices. Analysis was as much about the invention of new solutions as it was choice among known alternatives.

While others made comparable contributions in the realms of politics and management, and may get the recognition in the history books, Albert's unique and essential contribution was in building the intellectual foundations of American strategy and defense policy, and how it must be studied. There, he had no equal.

The Basing Study.

The high point of Albert's early work was the "Basing Study," in which he led an unusually talented team including economists Fred Hoffman and Harry Rowen, and aeronautical engineer Bob

Lutz. With the Basing Study's two main reports—the 1953 staff summary report, *The Selection of Strategic Air Bases* (R-244-S),² and the 1954 final report, *The Selection and Use of Strategic Air Bases* (R-266)³—he turned the thinking on strategic air power on its head. He grasped the full significance of atomic and thermonuclear weapons. He and his team saw that the role of strategic air power could not be to carry on a protracted bombing campaign, a World War II with bigger bombs as envisioned in what was the doctrine at the time.⁴ Such a war would be so destructive as to be not worth winning. But even this type of war couldn't be fought with the Strategic Air Command (SAC) based soft and concentrated on relatively few overseas bases. After a Soviet attack on our bases, there would be no SAC.

However, the Basing Study's most original insight was that the role of SAC should be to deter attack, and that required SAC to be able not only to survive a Soviet attack designed to destroy it, but also to strike back—in short, to acquire a “second-strike capability.” And then he found that survival for a second-strike was itself a very large challenge. Albert inspired and led a great deal of research, ingenuity, and creativity to find solutions to that problem. The whole idea of survival, second strike, *and* deterrence came out of Albert's work and thinking.

In the decade after World War II, perhaps understandably, there were many views extant regarding the significance of nuclear weapons. Many thought that thermonuclear war would be so destructive as to be unthinkable, and therefore could not happen. Deterrence would be automatic. Albert and his team found that deterrence was far from automatic and far from easy to assure.

The Vulnerability Study.

Albert went on with the same team to do the follow-up “Vulnerability Study,” an extension of his analysis into the missile age. With the Vulnerability Study's 1956 report, *Protecting U.S. Power to Strike Back in the 1950s and 1960s* (R-290), he showed how numerical superiority did not guarantee a credible deterrent:

The criterion of matching the Russians plane for plane, or exceeding them, is, in the strict sense, irrelevant to the problem of deterrence. It may even be, as has been asserted, unnecessary to achieve such parity so long as

we make it crystal clear to the enemy that we can strike back after an attack. *But then we do have to make it clear.* Deterrence is hardly attained by simply creating *some* uncertainty in the enemy's attack plans, that is, by making it somewhat a gamble. The question is, *how much* of a gamble? And what are his alternatives?⁵

R-290 demonstrated the need to base and operate America's nuclear-armed bomber forces in ways that were not merely better protected and more capable of surviving surprise attack, but also much less accident-prone and much more controllable by the political leadership, in peacetime and especially in times of deep international crisis.

One of the many valuable activities that grew out of the vulnerability inquiry was Harry Rowen's study of how to put intercontinental ballistic missiles (ICBMs), the first of which were based in vulnerable clusters *above* ground, in better protected silos underground. These ideas of survival and second strike eventually passed into our security culture, and became the basis of defense policy. But they certainly were not obvious at the time. They were intensely controversial in several respects. For example, many authorities were *sure* that hardening bombers in underground shelters and missile silos to the required degree was impossible. I remember conferences where such judgments were expressed most forcefully. So, Albert went out and found Paul Weidlinger, a brilliant architect-engineer, who developed solutions to the problems of blast resistance. In the case of the missile silos, Weidlinger's engineering and Rowen's systems analysis were accepted and became the basis for our deployment of *Minuteman* ICBMs.

Challenging Dominant Paradigms: "The Delicate Balance" and After.

In the 1950s, people assumed that thermonuclear was so horrible that nobody would start one. Except that *we would*, if our NATO allies were attacked by the apparently overwhelming Soviet army. Most people, though, were oblivious to the implications of the vulnerability of SAC at the time. This vulnerability could have invited attack in a crisis, especially a crisis in which the Soviets thought we would carry out our threat, in which case their least worst alternative might be to launch a preemptive surprise

attack. Albert published his memorable article, "The Delicate Balance of Terror," in *Foreign Affairs* to explain the problem to a wider audience.⁶

Despite the Eisenhower Administration's acceptance of many of Albert's programmatic recommendations for reducing vulnerability, it remained for the new Kennedy Administration to accept the broader strategic implications of his work. Whether in the military, government, academia, or other professions, there are such things as institutional interests and dominant paradigms that are very hard to change. It's hard to just tear up the plans and premises you have been acting on for years and admit that you were wrong. Albert was fearless and relentless in his attack on dominant paradigms when thorough analysis revealed they were wrong. Wasn't there a bumper sticker that said, "Attack the dominant paradigm"? If there was, it surely would have been the right one for Albert's car.

Fortunately for America—and the world—presidential candidate John F. Kennedy picked up on Albert's themes, and his first acts as President of the United States included accelerating the *Minuteman* as an underground-based ICBM, and the *Polaris* sea-launched ballistic missiles in submarines. President Kennedy personally changed the name of what were previously known as "strategic offensive forces" to "strategic retaliatory forces" to clarify the mission.

The Limits of Strategic Deterrence.

In the decade after World War II, the declared American policy for deterring a Soviet non-nuclear attack on our NATO allies was, as previously noted, to threaten an all-out thermonuclear attack on the Soviet bloc. Albert addressed this policy in "The Delicate Balance of Terror":

But the notion of massive retaliation as a responsible retort to peripheral provocations vanished in the harsh light of a better understanding here and abroad that the Soviet nuclear delivery capability meant tremendous losses to the United States if we attacked them. And now Europe has begun to doubt that we would make the sacrifice involved in using SAC to answer an attack directed at it but not ourselves.

The many critics of the massive retaliation policy who advocate a capability to meet limited aggression with a limited response are on firm ground in suggesting that a massive response on such an occasion would be unlikely and the threat to use it therefore not believed. Moreover this argument is quite enough to make clear the critical need for more serious development of the power to meet limited aggressions.⁷

John F. Kennedy borrowed this idea in his campaign and denounced the massive retaliation policy as confronting the President with a choice of “Suicide or Surrender; Humiliation or Holocaust.”⁸ Albert himself, and through his disciples who went on to serve in the Pentagon, expressed profound concern about the uncontrolled, indiscriminate use of force. His studies led him to recommend control and deliberation—and, later, discriminate weapons such as accurate “smart weapons” and restraint in targeting. Albert’s ideas had a large impact on the thinking of Secretary Robert McNamara. In the early years of the Kennedy Administration, Albert’s ideas won out, and the very great danger of nuclear war was drastically reduced.

Albert was also very interested in NATO strategy, and very influential in its development. He understood that the *other* best way to reduce the danger of nuclear war was to eliminate our need for the threatened first use of nuclear weapons by acquiring adequate and effective non-nuclear forces.⁹ Implementing this idea took a longer struggle than gaining acceptance of the need for a second-strike capability, but it was eventually successful.

Albert also directed attention to the flanks of NATO, and to potential attacks outside the NATO area. In August 1990, Iraq’s surprise invasion of Kuwait fulfilled his prophecies.

Contemporary Relevance.

Albert’s strategic views were “fact dependent,” and facts change. As noted above, the actual technical factors mattered. So his legacy is as much in his intellectual standards and methods of analysis as it is in specific strategic doctrines. One of the most significant of Albert’s legacies was to demonstrate the importance of what can be accomplished by rigorous, diligent, uncompromising search for truth in complex issues of public policy. He was skeptical of policy conclusions that rested on

uncertain intelligence estimates, and sought solutions that didn't depend on them even when they supported his case; he was openly critical of official estimates on occasions when he believed they reflected a policy bias. One cannot help wishing that such an analytical attitude had prevailed concerning the supposed presence of ongoing WMD programs in Iraq before President Bush's 2003 decision to invade. Among the many and large negative consequences of that error was the severe blow to the credibility of U.S. intelligence capabilities and top-level government decision-making processes.

Beyond that, the importance of Albert's insistence on secure and survivable command, control, and communications capabilities persists, as well as his insistence on the importance of a high level of security of nuclear weapons. We now find it clearly in our interest to help other nuclear powers maintain the security of and national control authority over their weapons so that they will not fall into the hands of nonstate actors who cannot be deterred, or will not be used in unauthorized ways in a crisis. Thus, we ought to be sure we are devoting adequate resources to that end. Moreover, with nearly 18 years having elapsed since the end of the Cold War, it is past time for publicly abjuring a policy that Albert always opposed, maintaining ICBM forces in a posture of readiness to launch on warning of an attack. He attacked that reckless policy during the dangerous days of the Cold War; he would certainly favor distancing ourselves from it now.

Albert's emphasis on the importance of and difficulty of deterrence remains relevant in the case of nuclear-armed states. Some may think that Iran can be deterred from attacking our vital interests with nuclear weapons. But we must face the difficult question of what would be an appropriate response. Surely, the idea of an all-out nuclear counterattack on Iranian cities would raise doubts in the minds of many reasonable people. Albert's insistence on the importance of control and deliberation, discrimination, and proportionality of response as a basis for a credible deterrent, remains relevant.

The problem of nuclear deterrence is enormously more complicated today than it was in the 1950s and 1960s when we faced essentially a bipolar world, and we believed the Soviets would act rationally in the interests of their own survival. (The bipolar world model may have oversimplified things.) Now we face a multipolar world, one in which nuclear weapons directed at our cities may not have a clearly marked return address in a

nation-state. There now appears to be a significant danger that a nuclear weapon might be obtained by nonstate actors who want or are willing to die in an effort to deliver it to an American or European city. This problem needs to be analyzed with the same relentless determination, rigor, and thoroughness that Wohlstetter and his associates applied in the 1950s. Such analyses might point to important new technologies that need development.

Lessons from Wohlstetter's work include the fact that there is usually a lot of superficial, fuzzy, and wrong thinking extant. Just because 95 percent of people believe something to be true, including high-ranking authorities who have access to classified information, doesn't mean that it is true. For example, K. Wayne Smith and I debunked the widely accepted myth of overwhelming Soviet superiority in conventional forces in Europe in our book *How Much is Enough?* which we like to think was in the Wohlstetter tradition.¹⁰ Fortunately, McNamara and both his presidential bosses also doubted that myth.

Complex problems of strategy must be approached by relentless pursuit of insight and truth, by people with access to relevant detailed information. As Albert believed, the numbers usually do matter. This makes it all the more important for our government to make such informed but independent analysis possible. This experience reflects creditably on the United States Air Force and the Eisenhower Administration who continued to support RAND's independence even when Wohlstetter and his team reached conclusions that were at variance with their policies. In an era marked by so much political cronyism and parochialism, it is important for our society to develop institutions that can conduct such analyses with the necessary degree of independence.

Not Just a Strategic Analyst.

On a more personal note, Albert was a remarkable person. He didn't suffer fools gladly, but he was as hard on himself as on others in the relentless search for valid insight and truth, and he appreciated good work and good policy analysis when he saw it. I felt the lash of his criticism for work not well thought through, and also the warmth of his appreciation for good work. Albert was a superb teacher.

Beyond the professional sphere, Albert was a great human being, with a wide range of friendships and interests. He loved

life, music, art, poetry, felicitous toasts, flowers, architecture, food, and dance—"George Balanchine and Szechuan cuisine." He could speak intelligently on a vast range of topics.

Albert's judgment was never employed to better effect than in his choice of Roberta as his wife. The affection between them was evident to all who knew them well; but so was the importance of Roberta to Albert's professional achievements. The smoothly functioning domestic life she gave him allowed him the freedom to devote himself to his work and indulge his aesthetic tastes. She was also his closest colleague with outstanding accomplishments of her own, in an area that complemented his interests. He often acknowledged his dependence on her judgments of people and situations. More important, her prize-winning work on the problems of response to ambiguous intelligence warnings was central to his approach to the difficulty of strategic deterrence.¹¹

This was a man of many facets and virtues. We miss his presence. Our world is a far better place for his work.

ENDNOTES - Enthoven

1. The Office of the Assistant Secretary of Defense for Systems Analysis, subsequently renamed Office of the Assistant Secretary of Defense for Program Analysis and Evaluation, is still in existence 40 years later.

2. Albert J. Wohlstetter, Fred S. Hoffman, Robert J. Lutz, and Henry S. Rowen, *The Selection of Strategic Air Bases*, R-244-S, special staff report, Santa Monica, CA: RAND Corporation, March 1, 1953, TOP SECRET, declassified on July 1, 1963, available from www.albertwohlstetter.com/writings/19530301-AW-EtAl-R244S.pdf.

3. Albert J. Wohlstetter, Fred S. Hoffman, Henry S. Rowen, and Robert J. Lutz, *The Selection and Use of Strategic Air Bases*, R-266, final report, Santa Monica, CA: RAND Corporation, April 1954, TOP SECRET, declassified circa 1961, available from www.rand.org/pubs/reports/R0266/. The follow-up Vulnerability Study's most representative report is: Wohlstetter, Hoffman, and Rowen, *Protecting U.S. Power to Strike Back in the 1950s and 1960s*, R-290, staff report, Santa Monica, CA: RAND Corporation, September 1, 1956, TOP SECRET, declassified circa 1960s, available from www.albertwohlstetter.com/writings/19560901-AW-EtAl=R290.pdf.

4. For more on this topic, see Albert Wohlstetter's "Letter to Michael Howard," November 1968, which is included in this edited volume.

5. Wohlstetter, Hoffman, and Rowen, *Protecting U.S. Power to Strike Back in the 1950s and 1960s*, p. 6.

6. Albert Wohlstetter, "The Delicate Balance of Terror," *Foreign Affairs*, Vol. 37, No. 2, January 1959, pp. 211-234. Although *Foreign Affairs* published an abridged version of "The Delicate Balance of Terror," this edited volume includes the unabridged version: Wohlstetter, *The Delicate Balance of Terror* (unabridged version), P-1472, Santa Monica, CA: RAND Corporation, November 6, 1958, revised December 1958, available from www.rand.org/about/history/wohlstetter/P1472/P1472.html.

7. *Ibid.*

8. President John F. Kennedy, "Diplomacy and Defense: A Test of National Maturity," a speech at the University of Washington's 100th Anniversary Program, November 16, 1961. An audio recording and transcript of this speech is available online at the JFK Library at www.jfklibrary.org/Historical+Resources/Archives/Reference+Desk/Speeches/ Albert, while strongly supporting this position, was nonetheless critical of the Kennedy campaign's exploitation of the alleged "missile gap" to criticize the Eisenhower Administration. He rejected the argument on the sufficient grounds that it relied on the view that the strategic balance depended on the size of the opposing strategic forces rather than on their ability to survive and respond after a surprise attack.

9. See especially Albert Wohlstetter and Henry S. Rowen, "Objectives of the United States Military Posture," RM-2373, Santa Monica, CA: RAND Corporation, May 1, 1959, available from www.rand.org/about/history/wohlstetter/RM2373/RM2373.html; and Dean Acheson (with Albert Wohlstetter *et al.*), *A Review of North Atlantic Problems for the Future*, the Committee on U.S. Political, Economic and Military Policy in Europe's Policy Guidance to the National Security Council, March 1961.

10. Alain Enthoven and K. Wayne Smith, *How Much is Enough? Shaping the Defense Program, 1961-1969*, New York, NY: Harper & Row, 1971. A new edition of this book was recently published as: Enthoven and Smith, *How Much is Enough? Shaping the Defense Program, 1961-1969*, Santa Monica, CA: RAND Corporation, 2005.

11. Roberta Wohlstetter, *Pearl Harbor: Warning and Decision*, Stanford, CA: Stanford University Press, 1962.