Military Wisdom and Nuclear Weapons

By WARD WILSON

The original mindset developed for thinking about nuclear weapons was theoretical. Herman Kahn, one of a group of civilians who eventually came to be called "nuclear strategists" and played an important role in shaping ideas about nuclear weapons, described the justification for this theoretical approach in 1965:

Despite the fact that nuclear weapons have already been used twice, and the nuclear sword has been rattled many times, one can argue that for all practical purposes nuclear war is still (and hopefully will remain) so far from our experience that it is difficult to reason from, or illustrate arguments by, analogies from history. Thus, many of our concepts and doctrines must be based on abstract and analytical considerations.[1]

Military wisdom grows out of pragmatism, which is, in some ways, the opposite of the theoretical and abstract approach advocated by Kahn. Pragmatism is founded on experience. It takes the facts of history seriously and is tied to events rather than high concepts. In the 20 years since the end of the Cold War, a thorough review of the facts has thrown a new, more critical light on nuclear weapons. It seems that Cold War fear and tension led a number of nuclear weapons thinkers to overlook what should have been obvious. Military officers were always somewhat skeptical of nuclear weapons. It now appears that much of that skepticism was justified.

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U.S. Marine Corps (Lynn P. Walker, Jr.)

Battered religious figures stand watch above tattered valley, Nagasaki, September 24, 1945

Hiroshima

In the run-up to Hiroshima, there were varying opinions inside the U.S. Government about what impact nuclear weapons would have. President Harry Truman's friend and colleague from the Senate, James "Jimmy" Byrnes (D-SC), soon to replace Edward Stettinius as Secretary of State, had high hopes. The Bomb, he told Truman, "might well put us in a position to dictate our own terms at the end of the war." Byrnes and Truman both expressed the hope that the Bomb would be able to force Japan to surrender before the Russians came into the war.

Professional military men were less enthusiastic. Planners in the Bomb project itself called for the speedy completion of up to 10 more bombs by November 1, 1945. They clearly were not counting on two nuclear weapons alone to end the war. This judgment was ratified by Secretary of the Army George Marshall's G2 (Intelligence), whose written report on August 8—2 days after the bombing of Hiroshima—flatly stated that the "atomic bomb will not have a decisive effect in the next 30 days." Secretary of the Navy James Forrestal clearly agreed.

On the same day that Marshall's G2 turned in his estimate to Marshall, Forrestal sent a letter to President Truman calling for the removal of Army General Douglas MacArthur as commander of the forthcoming invasion of Japan. Forrestal suggested that Admiral Chester Nimitz replace MacArthur. Such a request was sure to ignite inter-Service rivalry and cause tremendous controversy. An experienced Washington insider such as Forrestal would not have risked such a showdown if he believed that the second atomic bombing would cause Japan's leaders to sue for peace 2 days later. Finally, even Secretary of War Henry Stimson, who guided the Bomb project from its inception and knew the most about it, was taken off guard by the sudden Japanese offer to surrender. Stimson was on his way out of town for a long weekend at his vacation home in Maryland when the Japanese offer arrived. He would not have been leaving Washington if he had thought that just two bombs would bring an offer to surrender. So the top military men in Washington were skeptical that nuclear weapons could coerce Japan to capitulate after only two attacks on cities.

It now seems that the military appraisals were right and Byrnes was wrong. New evidence from archives in Japan, the United States, and Russia, as well as reevaluations of old evidence, shows that Japan surrendered because of the Soviet Union's decision to renounce its neutrality and join the war. The atomic bombings apparently had little to do with the decision.[2]

Four sets of evidence are crucial in overturning the long-held view that nuclear weapons delivered a decisive shock to Japan's leadership. First, the timing of events does not support the assertion that Hiroshima coerced surrender. Hiroshima was bombed at 0815 on August 6, 1945. Word of the attack began to reach Tokyo from various sources within half an hour, and by the afternoon, the governor of Hiroshima reported that one-third of the population had been killed and about two-thirds of the city destroyed. Early in the morning hours of August 7—because of the international dateline and delays associated with translation—Truman's press statement, declaring that the attack was carried out with an atomic bomb and threatening a "rain of ruin" if Japan did not surrender, arrived in Tokyo. On the morning of August 8, Togo Shigenori, the foreign minister and advocate of a diplomatic solution to end the war, urged Premier Suzuki Kantaro to call a meeting of Japan's Supreme Council—the effective ruling body of Japan at that point in the war. Suzuki checked with members of the Supreme Council (which was dominated by military men) and determined that there was insufficient interest to have a meeting to discuss the implications of Hiroshima. At midnight on August 8, the Soviet Union, which had signed a neutrality pact with Japan in 1941, renounced the pact and declared war. Soviet forces began attacking Japanese holdings in Manchuria, Sakhalin Island, and elsewhere. By 0430, word of the nature and scope of the attacks had begun to reach Tokyo. Within 6 hours—by 1030—the Supreme Council was meeting to discuss unconditional surrender.

When historians of the Bomb describe the events of this crucial week, they naturally put the dramatic focus on August 6 and the bombing of Hiroshima. It is, for them, a story about the Bomb. But from the Japanese perspective, the most important day of that week was not August 6, but August 9. That was the first day of the entire war—the first time in 14 years of conflict—that the Japanese government sat down to discuss surrender. What motivated them to finally take such a drastic step? It was not Nagasaki, which was bombed later in the day. It probably was not Hiroshima. That had been 3 full days earlier, and they had already considered whether to have a meeting to discuss its implications and rejected the notion. There is, however, an event that was both proximate and portentous that might have motivated them to think about surrender: the decision by the Soviet Union to join the war at midnight on August 8. Based on timing alone, the traditional interpretation of Hiroshima seems doubtful.

The second problem is one of scale. One would imagine, based on the way Hiroshima is described in the literature, that such a devastating attack must have made a strong impact. It is difficult to detect a single drop of rain, however, in the midst of a rainstorm. In the summer of 1945, the U.S. Army Air Force carried out one of the most intense and devastating bombing campaigns in the history of warfare against the cities of Japan. Sixty-eight cities were bombed and on average 50 percent destroyed; 300,000 civilians were killed and over 1 million made homeless. For 5 months from March until August, a Japanese city was turned into a smoking ruin every other day on average. We might imagine that Hiroshima would be the worst of these attacks by a wide margin. But that is not the case. If we graph the number of civilians killed in all 68 cities, according to the United States Strategic Bombing Survey, Hiroshima was second. Tokyo, in a conventional attack, lost more people. If we graph the square miles destroyed, Hiroshima was sixth. If we graph the percentage of the city destroyed, Hiroshima was seventeenth.

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Although the attack on Hiroshima is often presented as horrifying and shocking, the actual scale of the attack was not outside the scope of what Japan had been experiencing all summer. In fact, Minister of War

Anami Korechika, by this point probably the most powerful man in the government (including the Emperor), stated that the atomic bombings were no more menacing than the fire bombings that Japan had endured for months. If Japan's leaders were shocked by Hiroshima, why did they not surrender after any of the other city attacks?

The third set of evidence is the reactions of Japan's leaders to the two events. A close examination of meeting minutes, actions, and diary entries at the time shows that while Hiroshima was recognized as a problem, it did not seem to change the equation of the war.[3] The Soviet declaration of war and invasion, however, touched off a crisis. When Army Deputy Chief of Staff Kawabe Toroshiro realized that an atomic bomb had been dropped on Hiroshima, he wrote in his diary that it gave him a "serious jolt." But, he opined philosophically, "we must fight on." When Cabinet Secretary Sakamizu Hisatsune was woken in the early morning hours of August 9 and told that Russia had declared war, he was so angry he "felt as if all the blood in [his] body ran backwards." The actions that Japan's leaders took are more telling. On the morning the Soviets entered the war, army officers met to discuss their strategy for the upcoming Supreme Council meeting. General Kawabe suggested that martial law be imposed, the Emperor captured, and military rule imposed. No such emergency meetings were held, and no such extreme measures were considered on the morning Hiroshima was bombed. Examine the reactions to the two sets of events and the contrast is plain: Hiroshima was a serious problem, one of a number of problems, but the Soviet entry into the war was a crisis.

Finally, the most important evidence has to do with the strategic importance of the two events. With more than a million men still under arms on the Japanese Home Islands, military leaders could reasonably have imagined that they could make an invasion costly enough that the United States would offer better surrender terms. They had been steadily and laboriously shifting men into position in the south for this very purpose. Now more than a million and a half new adversaries had joined the fight, and they were poised to attack from the north, where Japan's defenses were weakest. Fighting one superpower attacking from one direction might just have been possible, but fighting two invading from opposite directions was clearly beyond Japan's limited military capability at that stage of the war.

The Soviet invasion also drastically changed the timescale of decisionmaking. Japan's leaders correctly assessed that the U.S. invasion would not occur for some months. The Soviet 16th army, however, had orders to quickly conquer the southern half of Sakhalin Island and then be ready to invade Hokkaido—the northernmost of Japan's Home Islands—within 10 to 14 days. Suddenly the timescale for invasion had gone from months to days. And Japan's leaders had already recognized the strategic significance of the Soviet Union's role. In a Supreme Council meeting in June discussing long-term prospects, they had agreed that Soviet entry into the war would "determine the fate of the Empire." In that same meeting, General Kawabe asserted, "The absolute maintenance of peace in our relations

U.S. Navy

USS *Essex*–based TBMs and SB2Cs bomb Hakodate, Japan, July 1945

with the Soviet Union is one of the fundamental conditions for continuing the war."

The declaration of war by the Soviet Union was strategically decisive. The bombing of Hiroshima was not. Claiming that Japan surrendered because of the bombing of Hiroshima is, in part, a claim that the military men who were leading Japan did not know their business. Their job was to evaluate which factors impacted the overall strategic calculation and which did not. Hiroshima clearly did not. How could Japan's military have agreed to surrender as a result of an event that was strategically unimportant?

In the years after the war, believing that the bombing of Hiroshima coerced Japan was natural because Japan's Emperor had declared that the bombing was the cause of the surrender. But two facts throw doubt on the Emperor's claim. First, the announcement that prominently mentioned the atomic bomb was in a radio broadcast to civilians. Tellingly, the announcement that was sent out 2 days later to the members of the military made no mention of the Bomb but focused on the entry of the Soviet Union into the war. It seems as if the Emperor was using the arguments that each audience would find persuasive. With civilians, who cared about city bombing, he talked about bombing. With military men, who cared about the military situation, he talked about Russia.

Secondly, the Bomb made the perfect explanation for losing the war. Instead of having to admit grievous errors of judgment that led to enormous loss of life and destruction, Japan's leaders could blame defeat on a sudden scientific breakthrough by the enemy that no one could have predicted. At a single stroke, they were no longer responsible for having lost the war.

The story of why Hiroshima was identified as the cause of surrender rather than the Soviet declaration of war has yet to be written. Obviously, complex motives of national pride and influence played central roles. The important point is not, however, as some historians would have it, whether the United States was wrong to drop the Bomb on Hiroshima. Attacking cities was, at that point, an established part of the war. The important question is whether bombing a city with a nuclear weapon works—whether it will reliably coerce an adversary into surrendering. Much of the claim that nuclear weapons have a special psychological ability to coerce and deter is based on the experience of Hiroshima. The new evidence about the end of the war now throws doubt on this assertion. The new interpretation of Hiroshima is surprising because we are used to the old one. But it would not have surprised the senior military leaders in the U.S. Government at the time: they were all already skeptical of the bomb's ability to influence events.

Surrender party in Manila, 1945

U.S. Coast Guard

Nuclear War

One of the most important constructs in the field of nuclear weapons is our image of what a nuclear war would be like. Much of our national political debate has been shaped by perceptions of nuclear war, and nuclear deterrence depends, in part, on conceptions of nuclear war. Nuclear deterrence is supposed to work this way: a leader takes an aggressive action, his adversary warns him of the risk of nuclear war, the leader sees an image of a nuclear war in his mind's eye, and he then thinks better of his aggression. The image of nuclear war is critical. It is discouraging, therefore, to consider that most civilians and political leaders think about nuclear war based on cultural myths and religious prophesies that are thousands of years old.

Military conceptions of nuclear war tend to be quite realistic. Declassified war plans from the late 1940s and early 1950s show a clear and pragmatic vision of what such a war would be like. Fleetwood, the original war plan drawn up in 1948, called for the use of the full U.S. nuclear arsenal at the outset of the war. A total of 133 bombs would be used against some 70 Soviet cities, resulting in several million casualties and the destruction of 30 to 40 percent of Soviet industrial capacity. The plan's authors, however, did not confuse this enormous devastation with victory. They estimated that Soviet forces would then launch an invasion of Europe and that the United States would have to prepare itself for a traditional conventional land war in Europe. The men who drew up this plan had just finished fighting a global war against Germany and Japan. They were some of the most experienced military leaders in the United States at that time. Their judgments are worth taking seriously.

As nuclear forces evolved and Soviet nuclear forces became more capable, estimates of the likely first round of any war with the Soviet Union changed. But the presumption that the initial nuclear phase of a war would not be decisive remained the same. Here

is Admiral Robert B. Carney, U.S. Chief of Naval Operations, describing what such a war might be like to an audience in Cincinnati, Ohio, in 1955: "Presumably massive blows would continue as long as either side retained the capability. . . . With the passing of the initial phase, and if the issue is still unresolved, tough people would carry on across the radioactive ashes and water, with what weapons are left." Similarly, a British white paper from 1954 described a war with initial devastation that did not resolve the dispute. In what one strategist called a "broken-backed war," it was presumed that both sides would unleash significant salvos on each other but that neither would surrender as a result. These are serious attempts to estimate what would happen in a novel situation. It is true that when the bombers of these early scenarios were replaced with missiles, the nature of the war changed. But these early plans and predictions are useful reminders that a nuclear attack might not be immediately decisive. Nuclear war could play out in a number of different ways.[4]

Compare these military appreciations with the typical civilian vision of nuclear war. Politicians and civilians could draw on declassified studies such as these to shape a picture of what nuclear war might be like. They could take military thinking as a starting point and try to reason from these estimates to a likely outcome. But civilian thinking about nuclear war ignores military judgment and experience.

In the popular imagination, nuclear war is most often thought about as an apocalypse. When people talk about nuclear war being "the end of everything" or "the destruction of all life on earth," they clearly have in mind an image based on apocalypse. Apocalypse occurs so often in the public debate about nuclear war that it almost passes unnoticed. But apocalypse is a very specific phenomenon. It is the story of a world mired in sin, in which a small sect remains true to a set of values (usually by living according to a very strict code), a gigantic cataclysmic event or war wipes out much of the Earth, and the small sect survives because of its faith. Apocalyptic writing occurs across cultures and eras. There is, of course, the apocalyptic book of Revelation in the Christian Bible. The book of Daniel in the Hebrew Bible is also apocalyptic. There are apocalyptic suras in the Koran. Scores of other religious traditions—from ancient Persian Zoroastrianism to the Norse sagas of Scandinavia—have apocalyptic stories. Apocalypse figures in writing in Europe from the third through fifth centuries in the Sibylline Oracles. The apocalyptic Shangquing scripture of Taoism was produced in China in the fourth century. Nostradamus wrote in the 1500s. Apocalyptic writings led to political uprisings in Germany and England in the 16th and 17th centuries. At the turn of the 19th century, millennialists predicted the end of time and the coming of the Lord at midnight December 31. Many eras and cultures prophesy apocalypse.

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When we stop to consider it, the biblical elements in the language used about nuclear weapons is striking. Not only did the original observers of the first test reach for biblical language ("A great blinding light lit up the sky and earth as if God himself had appeared among us . . . there came the report of an explosion, sudden and sharp as if the skies had cracked . . . a vision from the Book of Revelations"), but even the alternate name for nuclear war evokes the Bible. We could refer to nuclear war as "super science war," since it involves remarkable and advanced science. We could call it "megadeath war," since it would likely lead to millions of people killed. We could even call it "wargasm," the flippant coinage of Herman Kahn. But we do not call it any of these names. When we do not call nuclear war apocalypse, we refer to it by the name of a hill in Israel that is the site, in the Bible, of the Last Battle at the End of Days—we call it Armageddon.

All of these biblical allusions and apocalyptic descriptions raise the question of why we talk about a 21st-century military phenomenon in terms of 2,000 years of religious prophesies. If we are going to try to develop pragmatic and sober policies for handling nuclear weapons, how can it make sense to think about them using religious ideas rather than basing our thinking on the facts on the ground?[5] One of the most disturbing aspects of the nuclear weapons debate is that given the choice between trying to think realistically and factually about nuclear war or thinking in terms of familiar religious prophesy and cultural myth, most people grabbed apocalypse with both hands. If serious and sensible policies are to be formulated, it is necessary to at least begin our analysis with a pragmatic military frame of mind rather than religious thinking.

Nuclear Deterrence

The standard claim for nuclear weapons is that they are not really intended to be used on the battlefield; their chief value is as psychological tools. One way to define *nuclear deterrence* is "manipulating the fear of nuclear war for political ends." Nuclear deterrence, it is sometimes claimed, is a special form of deterrence that operates largely outside the rules of other forms of deterrence (deterrence with conventional weapons, for example, or deterring lawbreakers, and so on). One important proof of this special status was the unbroken string of successes that nuclear deterrence enjoyed during the Cold War crises in the late 1950s, early 1960s, and intermittently thereafter until the fall of the Soviet Union. Even the first Gulf War was supposed to illustrate the power of nuclear deterrence. Because of its unique status and the fact that it apparently operated under a special set of rules, the standard lessons and wisdom of military experience were often set aside when dealing with nuclear deterrence in favor of specialized theories of nuclear threat. The problem is that the unbroken string of successes seems largely illusory.

The first crisis of the Cold War period occurred when Soviet forces cut off access to the western sectors of Berlin in 1948. Each of the four Allies had been allocated a sector of Germany to administer and the capital city, Berlin, located deep in the eastern, Soviet sector of Germany, had also been divided into four sectors. Unhappy over plans for reintegrating Germany based on a Western model, Josef Stalin ordered Russian troops to close all roadways and rail lines to supplies from the West. Without supplies the people of West Berlin would starve.

President Harry Truman ordered B-29 bombers redeployed to England. The B-29 was the bomber that had dropped nuclear weapons on Japan, and although these

bombers had not been modified to allow them to drop nuclear weapons, when word of the redeployment was leaked to the press, it was widely assumed that the United States had clear and available capacity to use nuclear weapons against the Soviet Union. Although some historians have been skeptical that the redeployment had much impact on the crisis, in Washington in the years that followed, it was widely believed that Truman's "nuclear threat" was important in resolving the crisis.[6]

What is rarely asked about this crisis is what Stalin was thinking. He ordered the blockade at a time when the United States had a monopoly on nuclear weapons. One of the options considered in Washington for relieving the blockade was forcing an armored column up the autobahn to Berlin. Stalin initiated a crisis that could have led to war despite the U.S. nuclear monopoly.

Although this episode is not entirely persuasive regarding the failure of nuclear deterrence (there was, for example, no explicit threat made), what is troubling is that so little investigation has gone into the facts of the case. When planes crash, the Federal Aviation Administration takes extraordinary steps to understand exactly what went wrong. Given the stakes involved, should not the same standard apply to potential failures of nuclear deterrence? Should not each potential failure be pored over carefully until the exact details are completely understood?

A far more disturbing failure of nuclear deterrence occurred during the Cuban Missile Crisis. The Soviet attempt to sneak ballistic missiles into Cuba in 1962 is often cited as clear proof that nuclear deterrence works. After all, Soviet leader Nikita Khrushchev, when confronted with the danger of nuclear war, withdrew the missiles. But this overlooks the failure of the danger of nuclear war to deter President John F. Kennedy. Kennedy's actions could have caused the crisis to spiral out of control to nuclear war. After the crisis President Kennedy's brother Robert wrote that although the President had initiated the course of events, "he no longer had control over them," and Kennedy himself told aide Theodore Sorensen that the odds of war had been "somewhere between one and three and even." During the discussions that led to the choice of a blockade of Cuba, the danger of nuclear war was mentioned 60 times. Kennedy clearly knew that blockading Cuba carried with it the risk of nuclear war.

The President's handling of the crisis was, in retrospect, masterful, and there is little doubt that he chose the least aggressive of the action options presented to him. But he could also have chosen to do nothing. The reputation and standing of the Soviet Union had not collapsed after the U.S. introduction of nuclear missiles into Italy and Turkey in 1961. There is good reason to suspect that Kennedy might have lost the election of 1964 had he not taken action on the missiles in Cuba. But should a President place the lives of 100 million U.S. civilians at risk (the estimated number who might have died in an all-out nuclear war in 1962) to prevent personal and political humiliation? In any case, the question is not whether Kennedy was an admirable President, or whether his actions were justified. The question is whether nuclear deterrence works reliably. And here the facts are indisputable: a leader was faced with the prospect of an uncontrollable crisis where the risks of nuclear war were high and he was not deterred from escalating the crisis. The Cuban Missile Crisis provides clear evidence that nuclear deterrence can fail in alarming ways.

It is often asserted that the Gulf War provides further confirmation that nuclear deterrence works. Secretary of State James Baker sent a letter to the Iraqi government prior to the outbreak of hostilities warning that if chemical or biological weapons were used, the United States would respond with the "full measure of force" against Iraq. The threat was widely viewed as a nuclear threat. Iraq did not use chemical or biological weapons, and, therefore, it is often asserted, the power of nuclear deterrence was once again demonstrated. But the facts in full are not so reassuring. Secretary Baker actually drew three red lines in the sand: Iraq had to forgo using chemical or biological weapons, setting the Kuwaiti oil wells on fire, and making terrorist attacks against U.S. allies. As is well known, the Iraqis crossed two of those three lines: they set the oil wells alight and launched Scud missile attacks against Israeli civilians. How is it possible to call a threat that was only one-third successful real support for the theory of nuclear deterrence? Admittedly, a batter who gets a hit one out of every three trips to the plate is judged a successful baseball player, but nuclear deterrence is not baseball. Because of the catastrophic consequences that could result from an all-out nuclear war, nuclear deterrence has to be perfect or at least vanishingly close to perfect. As these three examples illustrate, however,

U.S. Navy

Mount Fujiyama as seen from USS *South Dakota* in Tokyo Bay, August 1945

there are a number of cases that appear to be nuclear deterrence failures.

And the list of other crises in which nuclear deterrence could be plausibly argued to have failed is longer. Why, for example, did the redeployment of bombers to bases in the Pacific not deter the Chinese from entering the Korean War in 1951? Why was Israel's quite public possession of nuclear weapons (it was reported in the *New York Times*) not sufficient to prevent a full-scale conventional attack in the Middle East in 1973? Why, in other words, were Anwar Sadat and Hafiz al-Assad not deterred by the risk of a one-sided nuclear war? In 1982, the Argentines occupied the British Falkland Islands, instigating war and again risking one-sided nuclear attack. Why did the United Kingdom's nuclear arsenal not deter Argentina's leaders?

There are arguments that can be offered in each of these cases explaining these potential failures. What is troubling is that these failures have not been explored in depth. In almost every case, the "successes" of nuclear deterrence are touted while the possible failures are swept under the rug. Most of the literature about the Middle East War of 1973, for example, focuses on the "successful" use of a nuclear forces alert ordered by Henry Kissinger to deter the Soviet Union from sending paratroopers to reinforce Egypt in the waning days of the fighting. The initial failure is hardly ever discussed.

It appears that claims for the special nature of nuclear deterrence and its unblemished record of perfection may well be based on a selective reading of the evidence, rather than a careful, thorough, and fair-minded review of the facts. The history of warfare demonstrates that there are extreme hazards associated with embracing novel military theories that are not founded on actual experience.

Conclusion

Today there are increasing doubts about nuclear weapons. President Barack Obama has set a goal of the eventual elimination of nuclear weapons, and there is currently discussion of deep reductions in the requirements for the U.S. arsenal. Former Secretaries of State, Defense, and many others have expressed both doubts about the current reliability of nuclear deterrence and support for the eventual elimination of nuclear weapons. Even the first commander of U.S. Strategic Command famously expressed doubts (after his retirement) about the serviceability of nuclear weapons over the long run. The words of General Lee Butler in 1998 now seem remarkably prescient: "I see with painful clarity that from the very beginnings of the nuclear era, the objective scrutiny and searching debate essential to adequate comprehension and responsible oversight of its vast enterprises were foreshortened or foregone."

There is no question that there is a limited set of cases in which nuclear weapons are the best tools for accomplishing certain missions. Whether those limited uses are sufficient to offset the known dangers that the weapons inevitably bring is a political judgment. It seems likely that there will be an extended political debate on the issue. The judgment of the military on the practical question of the usefulness of nuclear weapons deserves to be heard clearly in that debate. Too often in the past, when these weapons have been discussed, unrealistic—even fantastic—opinions about their impact on world affairs have been voiced without the restraining influence of experience and practical knowledge. On the topic of nuclear weapons, military wisdom is essential. **JFQ**

NOTES

[1] Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York: Frederick A. Praeger, 1965), 134.

[2] For new research on Japan's surrender, see Edward J. Drea, *In the Service of the Emperor: Essays on the Imperial Japanese Army* (Lincoln: University of Nebraska Press, 1998); Sadao Asada, "The Shock of the Atomic Bomb and Japan's Decision to Surrender: A Reconsideration," *Pacific Historical Review* 67, no. 4 (November 1998), 477–512; Richard B. Frank, *Downfall: The End of the Imperial Japanese Empire* (New York: Random House, 1999); Herbert P. Bix, *Hirohito and the Making of Modern Japan* (New York: HarperCollins, 2000); Forrest E. Morgan, *Compellence and the Strategic Culture of Imperial Japan: Implications for Coercive Diplomacy in the Twenty-first Century* (Westport, CT: Praeger, 2003); Tsuyoshi Hasegawa, *Racing the Enemy: Stalin, Truman, and the Surrender of Japan* (Cambridge, MA: Harvard University Press, 2005); Tsuyoshi Hasegawa, *The End of the Pacific War: Reappraisals* (Stanford, CA: Stanford University Press, 2007). Useful collections of original documents may be found in William Burr, ed., "The Atomic Bomb and the End of World War II: A Collection of Primary Sources," National Security Archive Electronic Briefing Book No. 162, National Security Archive, August 5, 2005, available at <www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB162/index.htm>; and Michael Kort, *The Columbia Guide to Hiroshima and the Bomb* (New York: Columbia University Press, 2007).

[3] See, in particular, the diaries of Kawabe Toroshiro quoted in Hasegawa, *Racing the Enemy*, 200; Takagi Sokichi's diary entry for Wednesday August 8, 1945, in Burr, doc. 55; and the diary entry for Ugaki Matone in Kort, 319.

[4] Admiral Robert Carney and the British white paper are quoted in Bernard Brodie, *Strategy in the Missile Age* (Princeton, NJ: Princeton University Press, 1971), 160–162. There were a number of studies of limited nuclear war in the 1950s and again in the 1970s. See, for example, Henry Kissinger, *Nuclear Weapons and Foreign Policy* (New York: Harper, 1957); Ian Clark, *Limited Nuclear War* (Princeton, NJ: Princeton University Press, 1983). Regional nuclear wars, which are perhaps the most likely, would probably be limited and rely on tactical or theater weapons much more than a war between the United States and Russia.

[5] Exaggerated fears are also found in the debate about nuclear terrorism. For a useful antidote, see Brian Michael Jenkins, *Will Terrorists Go Nuclear?* (New York: Prometheus Books, 2008).

[6] See Roger Dingman, "Atomic Diplomacy during the Korean War," *International Security* 13, no. 3 (Winter 1988–1989).