THE SPREAD OF NUCLEAR WEAPONS: A DEBATE

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Chapter 1

MORE MAY BE BETTER

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What will the spread of nuclear weapons do to the world? I say "spread" rather than "proliferation" because so far nuclear weapons have proliferated only vertically as the major nuclear powers have added to their arsenals. Horizontally, they have spread slowly across countries, and the pace is not likely to change much. Short-term candidates for the nuclear club are not numerous, and they are not likely to rush into the nuclear business. One reason is that the United States works with some effect to keep countries from doing that.

Nuclear weapons will nevertheless spread, with a new member occasionally joining the club. Membership grew to twelve in the first fifty years of the nuclear age, and that number includes three countries who suddenly found themselves in the nuclear military business as successor states to the Soviet Union. A 50 percent growth of membership in the next decade would be surprising. Since rapid changes in international conditions can be unsettling, the slowness of the spread of nuclear weap-

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ons is fortunate. Someday the world will be populated by fifteen or eighteen nuclear-weapon states (hereafter referred to as nuclear states). What the further spread of nuclear weapons will do to the world is therefore a compelling question.

THE MILITARY LOGIC OF SELF-HELP SYSTEMS

The world has enjoyed more years of peace since 1945 than had been known in modern history, if peace is defined as the absence of general war among the major states of the world. The Second World War followed the first one within twenty-one years. Fifty years have elapsed since the Allies' victory over the Axis powers. Conflict marks all human affairs. In the past half century, conflict has generated hostility among states and has at times issued in violence among the weaker and smaller ones. Even though the more powerful states of the world were occasionally direct participants, war was confined geographically and limited militarily. Remarkably, general war was avoided in a period of rapid and far-reaching change: decolonization; the rapid economic growth of some states; the formation, tightening, and eventual loosening of blocs; the development of new technologies, and the emergence of new strategies for fighting guerrilla wars and deterring nuclear ones. The prevalence of peace, together with the fighting of circumscribed wars, indicates a high ability of the postwar international system to absorb changes and to contain conflicts and hostility.

Presumably, features found in the postwar system that were not present earlier account for the world's recent good fortune. The biggest changes in the postwar world were the shift from multipolarity to bipolarity and the introduction of nuclear weapons. In this chapter I concentrate on the latter.

States coexist in a condition of anarchy. Self-help is the principle of action in an anarchic order, and the most important way in which states must help themselves is by providing for their own security. Therefore, in weighing the chances for peace, the first questions to ask are questions about the ends for which states use force and about the strategies and weapons they employ. The chances of peace rise if states can achieve their most important ends without using force. War becomes less likely as the costs of war rise in relation to possible gains. Strategies bring ends and means together. How nuclear weapons affect the chances for peace is seen by examining the different implications of defense and deterrence.

How can one state dissuade another state from attacking? In either or in some combination of two ways. One way to counter an intended attack is to build fortifications and to muster forces that look forbiddingly strong. To build defenses so patently strong that no one will try to destroy or overcome them would make international life perfectly tranquil. I call this the defensive ideal. The other way to counter an intended attack is to build retaliatory forces able to threaten unacceptable punishment upon a would-be aggressor. "To deter" literally means to stop people from doing something by frightening them. In contrast to dissuasion by defense, dissuasion by deterrence operates by frightening a state out of attacking, not because of the difficulty of launching an attack and carrying it home, but because the expected reaction of the opponent may result in one's own severe punishment. Defense and deterrence are often confused. One used to hear statements like this: "A strong defense in Europe will deter a Soviet attack." What was meant was that a strong defense would dissuade the Soviet Union from attacking. Deterrence is achieved not through the ability to defend but through the ability to punish. Purely deterrent forces provide no defense. The message of the strategy is this: "Although

we are defenseless, if you attack we may punish you to an extent that more than cancels your gains." Second-strike nuclear forces serve that kind of strategy. Purely defensive forces provide no deterrence. They offer no means of punishment. The message of the strategy is this: "Although we cannot strike back at you, you will find our defenses so difficult to overcome that you will dash yourself to pieces against them." The Maginot Line was to serve that kind of strategy.

Do nuclear weapons increase or decrease the chances of war? The answer depends on whether nuclear weapons permit and encourage states to deploy forces in ways that make the active use of force more or less likely and in ways that promise to be more or less destructive. If nuclear weapons make the offense more effective and the blackmailer's threat more compelling, then nuclear weapons are bad for the world—the more so the more widely diffused nuclear weapons become. If defense and deterrence are made easier and more reliable by the spread of nuclear weapons, we may expect the opposite result. To maintain their security, states must rely on the means they can generate and the arrangements they can make for themselves. It follows that the quality of international life varies with the ease or the difficulty states experience in making themselves secure.

Weapons and strategies change the situation of states in ways that make them more or less secure, as Robert Jervis has clearly shown.[1] If weapons are not well suited for conquest, neighbors have more peace of mind. We should expect war to become less likely when weaponry is such as to make conquest more difficult, to discourage preemptive and preventive war, and to make coercive threats less credible. Do nuclear weapons have those effects? Some answers can be found by considering how nuclear deterrence and nuclear defense improve the prospects for peace.

First, war can be fought in the face of deterrent threats, but the higher the stakes and the closer a country moves toward winning them, the more surely that country invites retaliation and risks its own destruction. States are not likely to run major risks for minor gains. War between nuclear states may escalate as the loser uses larger and larger warheads. Fearing that, states will want to draw back. Not escalation but deescalation becomes likely. War remains possible, but victory in war is too dangerous to fight for. If states can score only small gains, because large ones risk retaliation, they have little incentive to fight.

Second, states act with less care if the expected costs of war are low and with more care if they are high. In 1853 and 1854 Britain and France expected to win an easy victory if they went to war against Russia. Prestige abroad and political popularity at home would be gained, if not much else. The vagueness of their expectations was matched by the carelessness of their actions. In blundering into the Crimean War, they acted hastily on scant information, pandered to their people's frenzy for war, showed more concern for an ally's whim than for the adversary's situation, failed to specify the changes in behavior that threats were supposed to bring, and inclined toward testing strength first and bargaining second.[2] In sharp contrast, the presence of nuclear weapons makes states exceedingly cautious. Think of Kennedy and Khrushchev in the Cuban missile crisis. Why fight if you can't win much and might lose everything?

Third, the question demands an affirmative answer all the more insistently since the deterrent deployment of nuclear weapons contributes more to a country's security than does conquest of territory. A country with a deterrent strategy does not need the extent of territory required by a country relying on conventional defense. A deterrent strategy makes it unnecessary for a country to

fight for the sake of increasing its security, and this removes a major cause of war.[3]

Fourth, deterrent effect depends both on capabilities and on the will to use them. The will of the attacked, striving to preserve its own territory, can be presumed to be stronger than the will of the attacker, striving to annex someone else's territory. Knowing this, the would-be attacker is further inhibited.[4]

Certainty about the relative strength of adversaries also makes war less likely. From the late nineteenth century onward, the speed of technological innovation increased the difficulty of estimating relative strengths and predicting the course of campaigns. Since World War II, technological advance has been even faster, but short of a ballistic missile defense breakthrough, this has not mattered. It did not disturb the American-Soviet military equilibrium, because one side's missiles were not made obsolete by improvements in the other side's missiles. In 1906, the British Dreadnought, with the greater range and fire power of its guns, made older battleships obsolete. This does not happen to missiles. As Bernard Brodie put it, "Weapons that do not have to fight their like do not become useless because of the advent of newer and superior types."[5] They may have to survive their like, but that is a much simpler problem to solve.

Many wars might have been avoided had their outcomes been foreseen. "To be sure," Georg Simmel wrote, "the most effective presupposition for preventing struggle, the exact knowledge of the comparative strength of the two parties, is very often only to be obtained by the actual fighting out of the conflict."[6] Miscalculation causes wars. One side expects victory at an affordable price, while the other side hopes to avoid defeat. Here the differences between conventional and nuclear worlds are fundamental. In the former, states are too often tempted to act on advantages that are wishfully discerned and narrowly calculated. In 1914, neither Germany nor

France tried very hard to avoid a general war. Both hoped for victory even though they believed the opposing coalitions to be quite evenly matched. In 1941, Japan, in attacking the United States, could hope for victory only if a series of events that were possible but unlikely took place. Japan hoped to grab resources sufficient for continuing its war against China and then to dig in to defend a limited perimeter. Meanwhile, the United States and Britain would have to deal with Germany, supposedly having defeated the Soviet Union and therefore supreme in Europe. Japan could then hope to fight a defensive war for a year or two until America, her purpose weakened, became willing to make a compromise peace in Asia.[7]

Countries more readily run the risks of war when defeat, if it comes, is distant and is expected to bring only limited damage. Given such expectations, leaders do not have to be crazy to sound the trumpet and urge their people to be bold and courageous in the pursuit of victory. The outcome of battles and the course of campaigns are hard to foresee because so many things affect them. Predicting the result of conventional wars has proved difficult.

Uncertainty about outcomes does not work decisively against the fighting of wars in conventional worlds. Countries armed with conventional weapons go to war knowing that even in defeat their suffering will be limited. Calculations about nuclear war are differently made. A nuclear world calls for a different kind of reasoning. If countries armed with nuclear weapons go to war, they do so knowing that their suffering may be unlimited. Of course, it also may not be, but that is not the kind of uncertainty that encourages anyone to use force. In a conventional world, one is uncertain about winning or losing. In a nuclear world, one is uncertain about surviving or being annihilated. If force is used, and not kept within limits, catastrophe will result. That predic-

tion is easy to make because it does not require close estimates of opposing forces. The number of one's cities that can be severely damaged is equal to the number of strategic warheads an adversary can deliver. Variations of number mean little within wide ranges. The expected effect of the deterrent achieves an easy clarity because wide margins of error in estimates of the damage one may suffer do not matter. Do we expect to lose one city or two, two cities or ten? When these are the pertinent questions, we stop thinking about running risks and start worrying about how to avoid them. In a conventional world, deterrent threats are ineffective because the damage threatened is distant, limited, and problematic. Nuclear weapons make military miscalculation difficult and politically pertinent prediction easy.

WHAT WILL THE SPREAD OF NUCLEAR WEAPONS DO TO THE WORLD?

Contemplating the nuclear past gives ground for hoping that the world will survive if further nuclear powers join today's dozen. This hope is called into question by those who believe that the infirmities of some new nuclear states and the delicacy of their nuclear forces will work against the preservation of peace and for the fighting of nuclear wars. The likelihood of avoiding destruction as more states become members of the nuclear club is often coupled with the question of *who* those states will be. What are the likely differences in situation and behavior of new as compared to old nuclear powers?

Nuclear Weapons and Domestic Stability

What are the principal worries? Because of the importance of controlling nuclear weapons—of keeping them firmly in the hands of reliable officials—rulers of nuclear

states may become more authoritarian and ever more given to secrecy. Moreover, some potential nuclear states are not politically strong and stable enough to ensure control of the weapons and control of the decision to use them. If neighboring, hostile, unstable states are armed with nuclear weapons, each will fear attack by the other. Feelings of insecurity may lead to arms races that subordinate civil needs to military necessities. Fears are compounded by the danger of internal coups, in which the control of nuclear weapons may be the main object of struggle and the key to political power. Under these fearful circumstances, to maintain governmental authority and civil order may be impossible. The legitimacy of the state and the loyalty of its citizenry may dissolve because the state is no longer thought to be capable of maintaining external security and internal order. The first fear is that states become tyrannical; the second, that they lose control. Both fears may be realized either in different states or in the same state at different times.[8]

What can one say? Four things primarily. First, possession of nuclear weapons may slow arms races down, rather than speed them up, a possibility considered later. Second, for less-developed countries to build nuclear arsenals requires a long lead time. Nuclear power and nuclear weapons programs require administrative and technical teams able to formulate and sustain programs of considerable cost that pay off only in the long run. The more unstable a government, the shorter becomes the attention span of its leaders. They have to deal with today's problems and hope for the best tomorrow.[9] In countries where political control is most difficult to maintain, governments are least likely to initiate nuclear-weapons programs. In such states, soldiers help to maintain leaders in power or try to overthrow them. For those purposes nuclear weapons are not useful. Soldiers who have political clout, or want it, are not interested in nuclear weapons. They are not scientists or technicians.

They like to command troops and squadrons. Their vested interests are in the military's traditional trappings.

Third, although highly unstable states are unlikely to initiate nuclear projects, such projects, begun in stable times, may continue through periods of political turmoil and succeed in producing nuclear weapons. A nuclear state may be unstable or may become so. But what is hard to comprehend is why, in an internal struggle for power, the contenders would start using nuclear weapons. Who would they aim at? How would they use them as instruments for maintaining or gaining control? I see little more reason to fear that one faction or another in a less-developed country will fire atomic weapons in a struggle for political power than that they will be used in a crisis of succession. One or another nuclear state will experience uncertainty of succession, fierce struggles for power, and instability of regime. Those who fear the worst have not shown how those events might lead to the use of nuclear weapons. Strikingly, during the Cultural Revolution, which lasted from 1966 to 1976, some group managed to keep control of China's nuclear weapons. Fourth, the possibility of one side in a civil war firing a nuclear warhead at its opponent's stronghold nevertheless remains. Such an act would produce a national tragedy, not an international one. This question then arises: Once the weapon is fired, what happens next? The domestic use of nuclear weapons is, of all the uses imaginable, least likely to lead to escalation and to global tragedy.

Nuclear Weapons and Regional Stability

Nuclear weapons are not likely to be used at home. Are they likely to be used abroad? As nuclear weapons spread, what new causes may bring effects different from, and worse than, those known earlier in the nuclear age? This section considers five ways in which the new world is

expected to differ from the old and then examines the prospects for, and the consequences of, new nuclear states using their weapons for blackmail or for fighting offensive wars.

In what ways may the actions and interactions of new nuclear states differ from those of old nuclear powers? First, new nuclear states may come in hostile pairs and share a common border. Where states are bitter enemies one may fear that they will be unable to resist using their nuclear weapons against each other. This is a worry about the future that the past does not disclose. The Soviet Union and the United States, and the Soviet Union and China, were hostile enough; and the latter pair shared a long border. Nuclear weapons caused China and the Soviet Union to deal cautiously with each other. But bitterness among some potential nuclear states, so it is said, exceeds that felt by the old ones. Playing down the bitterness sometimes felt by the United States, the Soviet Union, and China requires a creative reading of history. Moreover, those who believe that bitterness causes wars assume a close association that is seldom found between bitterness among nations and their willingness to run high risks.

Second, many fear that states that are radical at home will recklessly use their nuclear weapons in pursuit of revolutionary ends abroad. States that are radical at home, however, may not be radical abroad. Few states have been radical in the conduct of their foreign policy, and fewer have remained so for long. Think of the Soviet Union and the People's Republic of China. States coexist in a competitive arena. The pressures of competition cause them to behave in ways that make the threats they face manageable, in ways that enable them to get along. States can remain radical in foreign policy only if they are overwhelmingly strong—as none of the new nuclear states will be—or if their acts fall short of damaging vital interests of other nuclear powers. States that acquire nu-

clear weapons will not be regarded with indifference. States that want to be freewheelers have to stay out of the nuclear business. A nuclear Libya, for example, would have to show caution, even in rhetoric, lest it suffer retaliation in response to someone else's anonymous attack on a third state. That state, ignorant of who attacked, might claim that its intelligence agents had identified Libya as the culprit and take the opportunity to silence it by striking a heavy conventional blow. Nuclear weapons induce caution in any state, especially in weak ones.

Third, some new nuclear states may have governments and societies that are not well rooted. If a country is a loose collection of hostile tribes, if its leaders form a thin veneer atop a people partly nomadic and with an authoritarian history, its rulers may be freer of constraints than, and have different values from, those who rule older and more fully developed polities. Idi Amin and Muammar el-Qaddafi fit these categories, and they were favorite examples of the kinds of rulers who supposedly could not be trusted to manage nuclear weapons responsibly. Despite wild rhetoric aimed at foreigners, however, both of these "irrational" rulers became cautious and modest when punitive actions against them might have threatened their ability to rule. Even though Amin lustily slaughtered members of tribes he disliked, he quickly stopped goading Britain when it seemed that it might intervene militarily. Qaddafi has shown similar restraint. He and Anwar Sadat were openly hostile. In July of 1977, both launched commando attacks and air raids, including two large air strikes by Egypt on Libya's el Adem airbase. Neither side let the attacks get out of hand. Qaddafi showed himself to be forbearing and amenable to mediation by other Arab leaders. Shai Feldman used these and other examples to argue that Arab leaders are deterred from taking inordinate risks, not because they engage in intricate rational calculations but simply because they, like other rulers, are "sensitive

to costs."[10] Saddam Hussein further illustrated the point during, and even prior to, the war of 1991. He invaded Kuwait only after the United States had given many indications that it would not oppose him or use military force to liberate a Kuwait conquered by Iraq. During the war, he launched missiles against Israel. But Iraq's missiles were so lightly armed that little risk was run of prompting attacks more punishing than what Iraq was already suffering. Deterrence worked for the United States and for Israel as it has for every other nuclear state.

Many Westerners write fearfully about a future in which Third World countries have nuclear weapons. They seem to view their people in the old imperial manner as "lesser breeds without the law." As ever with ethnocentric views, speculation takes the place of evidence. How do we know that a nuclear-armed and newly hostile Egypt, or a nuclear-armed and still-hostile Syria, would not strike to destroy Israel? Would either do so at the risk of Israeli bombs falling on some of their cities? Almost a quarter of Egypt's people live in four cities: Cairo, Alexandria, El-Giza, and Shoubra el-Kheima. More than a quarter of Syria's live in three: Damascus, Aleppo, and Homs.[11] What government would risk sudden losses of such proportion, or indeed of much lesser proportion? Rulers want to have a country that they can continue to rule. Some Arab country might wish that some other Arab country would risk its own destruction for the sake of destroying Israel, but why would one think that any country would be willing to do so? Despite ample bitterness, Israelis and Arabs have limited their wars and accepted constraints placed on them by others. Arabs did not marshal their resources and make an all-out effort to destroy Israel in the years before Israel could strike back with nuclear warheads. We cannot expect countries to risk more in the presence of nuclear weapons than they did in their absence.

Fourth, while some worry about nuclear states coming in hostile pairs, others worry that they won't come in hostile pairs. The simplicity of relations that obtains when one party has to concentrate its worry on only one other, and the ease of calculating forces and estimating the dangers they pose, may be lost. Early in the Cold War, the United States deterred the Soviet Union, and in due course, the Soviet Union deterred the United States. As soon as additional states joined the nuclear club, however, the question of who deterred whom could no longer be easily answered. The Soviet Union had to worry lest a move made in Europe might cause France and Britain to retaliate, thus possibly setting off American forces as well. Such worries at once complicated calculations and strengthened deterrence. Somebody might have retaliated, and that was all a would-be attacker needed to know. Nuclear weapons restore the clarity and simplicity lost as bipolar situations are replaced by multipolar ones.

Fifth, in some of the new nuclear states, civil control of the military may be shaky. Nuclear weapons may fall into the hands of military officers more inclined than civilians are to put them to offensive use. This again is an old worry. I can see no reason to think that civil control of the military was secure in the Soviet Union, given the occasional presence of military officers in the Politburo and some known and some surmised instances of military intervention in civil affairs at critical times.[12] In the People's Republic of China, military and civil branches of government are not separated but fused. Although one may prefer civil control, preventing a highly destructive war does not require it. What is required is that decisions be made that keep destruction within bounds, whether decisions are made by civilians or soldiers. Soldiers may be more cautious than civilians.[13] Generals and admirals do not like uncertainty, and they do not lack patriotism. They do not like to fight conventional wars

under unfamiliar conditions. The offensive use of nuclear weapons multiplies uncertainties. Nobody knows what a nuclear battlefield would look like, and nobody knows what will happen after the first city is hit. *Uncertainty* about the course that a nuclear war might follow, along with the *certainty* that destruction can be immense, strongly inhibits the first use of nuclear weapons.

Examining the supposedly unfortunate characteristics of new nuclear states removes some of one's worries. One wonders why their civil and military leaders should be less interested in avoiding their own destruction than leaders of other states have been.[14] Nuclear weapons have never been used in a world in which two or more states had them. Still, one's feeling that something awful will emerge as new nuclear powers are added to the present group is not easily quieted. The fear remains that one state or another will fire its new nuclear weapons in a coolly calculated preemptive strike, or fire them in a moment of panic, or use them to launch a preventive war. These possibilities are examined in the next section. Nuclear weapons, so it is feared, may also be set off anonymously, or used to back a policy of blackmail, or be used in a combined conventional-nuclear attack.

Some have feared that a radical Arab state might fire a nuclear warhead anonymously at an Israeli city in order to block a peace settlement.[15] But the state firing the warhead could not be certain of remaining unidentified. Even if a country's leaders persuaded themselves that chances of retaliation were low, who would run the risk? Nor would blackmail be easy, despite one instance of seeming success. In 1953, the Soviet Union and China may have been convinced by President Dwight D. Eisenhower and Secretary of State John Foster Dulles that they would widen the Korean war and raise the level of violence by using nuclear weapons if a settlement were not reached. In Korea, we had gone so far that the threat to go farther was plausible. The blackmailer's threat is

not a cheap way of working one's will. The threat is simply incredible unless a considerable investment has already been made. On January 12, 1954, Dulles gave a speech that seemed to threaten massive retaliation in response to bothersome actions by others, but the successful siege of Dien Bien Phu by Ho Chi Minh's forces in the spring of that year showed the limitations of such threats. Capabilities foster policies that employ them. Using American nuclear weapons to force the lifting of the siege was discussed in both the United States and France. But using nuclear weapons to serve distant and doubtful interests would have been a monstrous policy, too horrible, when contemplated, to carry through. Nuclear weapons deter adversaries from attacking one's vital, and not one's minor, interests.

Although nuclear weapons are poor instruments for blackmail, would they not provide a cheap and decisive offensive force when used against a conventionally armed enemy? Some people once thought that South Korea, and earlier, the Shah's Iran, wanted nuclear weapons for offensive use. Yet one can neither say why South Korea would have used nuclear weapons against fellow Koreans while trying to reunite them nor how it could have used nuclear weapons against the North, knowing that China and the Soviet Union might have retaliated. And what goals might a conventionally strong Iran have entertained that would have tempted it to risk using nuclear weapons? A country that launches a strike has to fear a punishing blow from someone. Far from lowering the expected cost of aggression, a nuclear offense even against a nonnuclear state raises the possible costs of aggression to incalculable heights because the aggressor cannot be sure of the reaction of other states.

Nuclear weapons do not make nuclear war likely, as history has shown. The point made when discussing the internal use of nuclear weapons bears repeating. No one can say that nuclear weapons will never be used. Their

use is always possible. In asking what the spread of nuclear weapons will do to the world, we are asking about the effects to be expected if a larger number of relatively weak states get nuclear weapons. If such states use nuclear weapons, the world will not end. The use of nuclear weapons by lesser powers would hardly trigger them elsewhere.

DETERRENCE BY SMALL NUCLEAR FORCES

How hard is it for minor nuclear powers to build deterrent forces? In this section, I answer the question.

The Problems of Preventive and Preemptive Strikes[16]

The first danger posed by the spread of nuclear weapons would seem to be that each new nuclear state may tempt an older one to strike to destroy an embryonic nuclear capability before it can become militarily effective. As more countries acquire nuclear weapons, and as more countries gain nuclear competence through power projects, the difficulties and dangers of making preventive strikes increase. Because of America's nuclear arsenal, the Soviet Union could hardly have destroyed the budding forces of Britain and France; but the United States could have struck the Soviet Union's early nuclear facilities, and the United States or the Soviet Union could have struck China's. Long before Israel struck Iraq's reactor, preventive strikes were treated as more than abstract possibilities. When Francis P. Matthews was President Harry S. Truman's secretary of the Navy, he made a speech that seemed to favor our waging a preventive war. The United States, he urged, should be willing to pay "even the price of instituting a war to compel cooperation for peace."[17] Moreover, preventive strikes against nuclear installations can be made by nonnuclear states and have

sometimes been threatened. Thus President Nasser warned Israel in 1960 that Egypt would attack if it were sure that Israel was building a bomb. "It is inevitable," he said, "that we should attack the base of aggression even if we have to mobilize four million to destroy it."[18]

The uneven development of the forces of potential and of new nuclear states creates occasions that permit strikes and may invite them. Two stages of nuclear development should be distinguished. First, a country may be in an early stage of nuclear development and be obviously unable to make nuclear weapons. Second, a country may be in an advanced stage of nuclear development, and whether or not it has some nuclear weapons may not be surely known. All of the present nuclear countries went through both stages, yet until Israel struck Iraq's nuclear facility in June of 1981, no one had launched a preventive strike.

A number of causes combined may account for the reluctance of states to strike in order to prevent adversaries from developing nuclear forces. A preventive strike is most promising during the first stage of nuclear development. A state could strike without fearing that the country it attacked would be able to return a nuclear blow. But would one country strike so hard as to destroy another country's potential for future nuclear development? If it did not, the country struck could resume its nuclear career. If the blow struck is less than devastating, one must be prepared either to repeat it or to occupy and control the country. To do either would be forbiddingly difficult.

In striking Iraq, Israel showed that a preventive strike can be made, something that was not in doubt. Israel's act and its consequences, however, made clear that the likelihood of useful accomplishment is low. Israel's action increased the determination of Arabs to produce nuclear weapons. Israel's strike, far from foreclosing

Iraq's nuclear career, gained Iraq support from some other Arab states to pursue it. Despite Prime Minister Menachem Begin's vow to strike as often as need be, the risks in doing so would have risen with each occasion.

A preemptive strike launched against a country that may have a small number of warheads is even less promising than a preventive strike during the first stage. If the country attacked has even a rudimentary nuclear capability, one's own severe punishment becomes possible. Nuclear forces are seldom delicate because no state wants delicate forces, and nuclear forces can easily be made sturdy. Nuclear warheads can be fairly small and light, and they are easy to hide and to move. Even the Model-T bombs dropped on Hiroshima and Nagasaki were small enough to fit into a World War II bomber. Early in the nuclear age, people worried about atomic bombs being concealed in packing boxes and placed in the holds of ships to be exploded when a signal was given. Now, more than ever, people worry about terrorists stealing nuclear warheads because various states have so many of them. Everybody seems to believe that terrorists are capable of hiding bombs.[19] Why should states be unable to do what terrorist gangs are thought to be capable of?

It was sometimes claimed that a small number of bombs in the hands of minor powers would create greater dangers than additional thousands in the hands of the United States or the Soviet Union. Such statements assume that preemption of a small force is easy. Acting on that assumption, someone may be tempted to strike; fearing this, the state with the small number of weapons may be tempted to use the few weapons it has rather than risk losing them. Such reasoning would confirm the thought that small nuclear forces create extreme dangers. But since protecting small forces by hiding and moving them is quite easy, the dangers evaporate.

Requirements of Deterrence

To be effective, deterrent forces, whether big or small ones, must meet these requirements. First, at least a part of a state's nuclear forces must appear to be able to survive an attack and launch one of its own. Second, survival of forces must not require early firing in response to what may be false alarms. Third, command and control must be reliably maintained; weapons must not be susceptible to accidental or unauthorized use.[20]

The first two requirements are closely linked both to each other and to measures needed to ensure that deterrent forces cannot be preempted. If states can deploy their forces in ways that preclude preemption—and we have seen that they can—then their forces need not be rigged for hair-trigger response. States can retaliate at their leisure.

This question then arises: May dispersing forces for the sake of their survival make command and control hard to maintain? Americans think so because we think in terms of large nuclear arsenals. Small nuclear powers neither have them nor need them. Lesser nuclear states may deploy, say, ten real weapons and ten dummies, while permitting other countries to infer that numbers are larger. An adversary need only believe that some warheads may survive its attack and be visited on it. That belief is not hard to create without making command and control unreliable. All nuclear countries live through a time when their forces are crudely designed. All countries have so far been able to control them. Relations between the United States and the Soviet Union, and later among the United States, the Soviet Union, and China, were at their bitterest just when their nuclear forces were in early stages of development and were unbalanced, crude, and presumably hard to control. Why should we expect new nuclear states to experience greater difficulties than the ones old nuclear states were

able to cope with? Although some of the new nuclear states may be economically and technically backward, they will either have expert and highly trained scientists and engineers or they will not be able to produce nuclear weapons. Even if they buy or steal the weapons, they will have to hire technicians to maintain and control them. We do not have to wonder whether they will take good care of their weapons. They have every incentive to do so. They will not want to risk retaliation because one or more of their warheads accidentally struck another country.

Hiding nuclear weapons and keeping them under control are tasks for which the ingenuity of numerous states is adequate. Means of delivery are neither difficult to devise nor hard to procure. Bombs can be driven in by trucks from neighboring countries. Ports can be torpedoed by small boats lying offshore. A thriving arms trade in ever more sophisticated military equipment provides ready access to what may be wanted, including planes and missiles suited to the delivery of nuclear warheads.

Lesser nuclear states can pursue deterrent strategies effectively. Deterrence requires the ability to inflict unacceptable damage on another country. "Unacceptable damage" to the Soviet Union was variously defined by Robert McNamara as requiring the ability to destroy a fifth to a fourth of its population and a half to two-thirds of its industrial capacity. American estimates of what is required for deterrence were absurdly high. To deter, a country need not appear to be able to destroy a fourth or a half of another country, although in some cases that might be easily done. Would Libya try to destroy Israel's nuclear weapons at the risk of two bombs surviving to fall on Tripoli and Bengazi? And what would be left of Israel if Tel Aviv and Haifa were destroyed?

The weak can deter one another. But can the weak deter the strong? Raising the question of China's ability to deter the Soviet Union in the old days highlights the

issue. The population and industry of most states concentrate in a relatively small number of centers. This was true of the Soviet Union. A major attack on the top ten cities of the Soviet Union would have mashed 25 percent of its industrial capacity and 25 percent of its urban population. Geoffrey Kemp in 1974 concluded that China could probably have struck on that scale.[21] And I emphasize again, China needed only to *appear* to be able to do that. A low probability of carrying a highly destructive attack home is sufficient for deterrence. A force of an imprecisely specifiable minimum capacity is nevertheless needed.

In a 1979 study, Justin Galen (pseud.) wondered whether the Chinese had a force capable of deterring the Soviet Union. He estimated that China had sixty to eighty medium-range and sixty to eighty intermediate-range missiles of doubtful reliability and accuracy and eighty obsolete bombers. He rightly pointed out that the missiles might miss their targets even if fired at cities and that the bombers might not get through the Soviet Union's defenses. Moreover, the Soviet Union might have been able to preempt an attack, having almost certainly "located virtually every Chinese missile, aircraft, weapons storage area and production facility."[22] But surely Soviet leaders put these things the other way around. To locate virtually all missiles and aircraft is not good enough. Despite inaccuracies a few Chinese missiles might have hit Russian cities, and some bombers might have got through. Not much is required to deter. What political-military objective is worth risking Vladivostok, Novosibirsk, and Tomsk, with no way of being sure that Moscow would not go as well?

The Credibility of Small Deterrent Forces

The credibility of weaker countries' deterrent threats has two faces. The first is physical. Will such countries be able to construct and protect a deliverable force? We have found that they can quite readily do so. The second is psychological. Will deterrent threats that are physically feasible be psychologically plausible? Will an adversary believe that the retaliation that is threatened will be carried out?

Deterrent threats backed by second-strike nuclear forces raise the possible costs of an attack to such heights that war becomes unlikely. But deterrent threats may not be credible. In a world where two or more countries can make them, the prospect of *mutual* devastation may make it difficult, or irrational, to execute threats should the occasion for doing so arise. Would it not be senseless to risk suffering further destruction once a deterrent force had failed to deter? Believing that it would be, an adversary may attack counting on the attacked country's unwillingness to risk initiating a devastating exchange by its own retaliation. Why retaliate once a threat to do so has failed? If one's policy is to rely on forces designed to deter, then an attack that is nevertheless made shows that one's reliance was misplaced. The course of wisdom may be to pose a new question: What is the best policy once deterrence has failed? One gains nothing by destroying an enemy's cities. Instead, in retaliating, one may prompt the enemy to unleash more warheads. A ruthless aggressor may strike believing that the leaders of the attacked country are capable of following such a "rational" line of thought. To carry the threat out may be "irrational." This old worry achieved new prominence as the strategic capabilities of the Soviet Union approached those of the United States in the middle 1970s. The Soviet Union, some feared, might believe that the United States would be self-deterred.[23]

Much of the literature on deterrence emphasizes the problem of achieving the credibility on which deterrence depends and the danger of relying on a deterrent of uncertain credibility. One earlier solution of the problem

was found in Thomas Schelling's notion of "the threat that leaves something to chance."[24] No state can know for sure that another state will refrain from retaliating even when retaliation would be irrational. No state can bet heavily on another state's common sense. Bernard Brodie put the thought more directly, while avoiding the slippery notion of rationality. Rather than ask what it may be rational or irrational for governments to do, the question he repeatedly asked was this: How do governments behave in the presence of awesome dangers? His answer was, very carefully.

To ask why a country should carry out its deterrent threat if deterrence fails is to ask the wrong question. The question suggests that an aggressor may attack believing that the attacked country may not retaliate. This invokes the conventional logic that analysts find so hard to forsake. In a conventional world, a country can sensibly attack if it believes that success is possible. In a nuclear world, a would-be attacker is deterred if it believes that the attacked *may* retaliate. Uncertainty of response, not certainty, is required for deterrence because, if retaliation occurs, one risks losing so much. In a nuclear world, we should look less at the retaliator's conceivable inhibitions and more at the challenger's obvious risks.

One may nevertheless wonder whether retaliatory threats remain credible if the strategic forces of the attacker are superior to those of the attacked. Will an unsuccessful defender in a conventional war have the courage to unleash its deterrent force, using nuclear weapons first against a country having superior strategic forces? Once more this asks the wrong question. The would-be attacker will ask itself, not whose forces are numerically superior, but whether a grossly provoca-tive act might bring nuclear warheads down on itself. When vital interests are at stake, all of the parties involved are strongly constrained to be moderate because one's immoderate behavior makes the nuclear threats of others credible.

With deterrent forces, the question is not whether one country has more than another but whether it has the capability of inflicting "unacceptable damage" on another, with "unacceptable" sensibly defined. Given second-strike capabilities, it is not the balance of forces but the possibility that they may be used that counts. The balance or imbalance of strategic forces affects neither the calculation of danger nor the question of whose will is the stronger. Second-strike forces have to be seen in absolute terms.

Emphasizing the importance of the "balance of resolve," to use Glenn Snyder's apt phrase, raises questions about what a deterrent force covers and what it does not.[25] In answering these questions, we can learn something from the experience of the Cold War. The United States and the Soviet Union limited their provocative acts, the more carefully so when major values for one side or the other were at issue. This can be seen both in what they did and in what they did not do. Whatever support the Soviet Union gave to North Korea's attack on the South in June of 1950 was given after Secretary of State Acheson, the Joint Chiefs of Staff, General MacArthur, the chairman of the Senate Foreign Relations Committee, and others explicitly excluded both South Korea and Taiwan from America's defense perimeter. The United States, to take another example, could fight for years on a large scale in Southeast Asia because neither success nor failure mattered much internationally. Victory would not have made the world one of American hegemony. Defeat would not have made the world one of Soviet hegemony. No vital interest of either superpower was at stake, as both Kissinger and Brezhnev made clear at the time.[26] One can fight without fearing escalation only where little is at stake. That is where the deterrent does not deter.

Actions at the periphery can safely be bolder than actions at the center. In contrast, where much is at stake

for one side, the other side moves with care. Trying to win where winning would bring the central balance into question threatens escalation and becomes too risky to contemplate. The United States was circumspect when East European crises loomed in the mid-1950s. Thus Secretary of State Dulles assured the Soviet Union, when Hungarians rebelled in October of 1956, that we would not interfere with Soviet efforts to suppress them. And the Soviet Union's moves in the center of Europe were carefully controlled. Its probes in Berlin were tentative, reversible, and ineffective. Strikingly, the long border between Eastern and Western Europe—drawn where borders earlier proved unstable—was free even of skirmishes through all of the years after the Second World War.

Contemplating American and Soviet postwar behavior, and interpreting it in terms of nuclear logic, suggests that deterrence extends to vital interests beyond the homeland more easily than most have thought. The United States cared more about Western Europe than the Soviet Union did. The Soviet Union cared more about Eastern Europe than the United States did. Communicating the weight of one side's concern as compared to the other side's was easily enough done when the matters at hand affected the United States and the Soviet Union directly. For this reason, West European anxiety about the coverage it got from our strategic forces, while understandable, was grossly exaggerated. The United States might have retaliated if the Soviet Union had made a major military move against a NATO country, and that alone was enough to deter the Soviet Union.

The Problem of Extended Deterrence

How far from the homeland does deterrence extend? One answers that question by defining the conditions that must obtain if deterrent threats are to be credited.

First, the would-be attacker must be made to see that the deterrer considers the interests at stake to be vital. One cannot assume that countries will instantly agree on the question of whose interests are vital. Nuclear weapons, however, strongly incline them to grope for *de facto* agreement on the answer rather than to fight over it.

Second, political stability must prevail in the area that the deterrent is intended to cover. If the threat to a regime is in good part from internal factions, then an outside power may risk supporting one of them even in the face of deterrent threats. The credibility of a deterrent force requires both that interests be seen to be vital and that it is an attack from outside that threatens them. Given these conditions, the would-be attacker provides both the reason to retaliate and the target for retaliation.

The problem of stretching a deterrent, which agitated the western alliance, is not a problem for lesser nuclear states. Their problem is not to protect others but to protect themselves. Many fear that lesser nuclear states will be the first ones to break the nuclear taboo and that they will use their weapons irresponsibly. I expect the opposite. Weak states easily establish their credibility. They are not trying to stretch their deterrent forces to cover others, and their vulnerability to conventional attack lends credence to their nuclear threats. Because in a conventional war they can lose so much so fast, it is easy to believe that they will unleash a deterrent force even at the risk of receiving a nuclear blow in return. With deterrent forces, the party that is absolutely threatened prevails.[27] Use of nuclear weapons by lesser states, or by any state, will come only if survival is at stake. This should be called not irresponsible but responsible use.

An opponent who attacks what is unambiguously mine risks suffering great distress if I have second-strike forces. This statement has important implications for both the deterrer and the deterred. Where territorial

claims are shadowy and disputed, deterrent writs do not run. As Steven J. Rosen has said, "It is difficult to imagine Israel committing national suicide to hold on to Abu Rudeis or Hebron or Mount Hermon."[28] Establishing the credibility of a deterrent force requires moderation of territorial claims on the part of the would-be deterrer. For modest states, weapons whose very existence works strongly against their use are just what is wanted.

In a nuclear world, conservative would-be attackers will be prudent, but will would-be attackers be conservative? A new Hitler is not unimaginable. Would the presence of nuclear weapons have moderated Hitler's behavior? Hitler did not start World War II in order to destroy the Third Reich. Indeed, he was dismayed by British and French declarations of war on Poland's behalf. After all, the western democracies had not come to the aid of a geographically defensible and militarily strong Czechoslovakia. Why then should they have declared war on behalf of an indefensible Poland and against a Germany made stronger by the incorporation of Czechoslovakia's armor? From the occupation of the Rhineland in 1936 to the invasion of Poland in 1939, Hitler's calculations were realistically made. In those years, Hitler would have been deterred from acting in ways that immediately threatened massive death and widespread destruction in Germany. And, even if Hitler had not been deterred, would his generals have obeyed his commands? In a nuclear world, to act in blatantly offensive ways is madness. Under the circumstances, how many generals would obey the commands of a madman? One man alone does not make war.

To believe that nuclear deterrence would have worked against Germany in 1939 is easy. It is also easy to believe that in 1945, given the ability to do so, Hitler and some few around him would have fired nuclear warheads at the United States, Great Britain, and the Soviet Union as their armies advanced, whatever the consequences for Germany. Two considerations work against this possibility: the first applies in any world; the second in a nuclear world. First, when defeat is seen to be inevitable, a ruler's authority may vanish. Early in 1945, Hitler apparently ordered the initiation of gas warfare, but his generals did not respond.[29] Second, no country will press another to the point of decisive defeat. In the desperation of defeat, desperate measures may be taken, and the last thing anyone wants to do is to make a nuclear nation desperate. The unconditional surrender of a nuclear nation cannot be demanded. Nuclear weapons affect the deterrer as well as the deterred.

ARMS RACES AMONG NEW NUCLEAR STATES

One may believe that old American and Soviet military doctrines set the pattern that new nuclear states will follow. One may also believe that they will suffer the fate of the United States and the former Soviet Union, that they will compete in building larger and larger nuclear arsenals while continuing to accumulate conventional weapons. These are doubtful beliefs. One can infer the future from the past only insofar as future situations may be like past ones for the actors involved. For three main reasons, new nuclear states are likely to decrease, rather than to increase, their military spending.

First, nuclear weapons alter the dynamics of arms races. In a competition of two or more parties, it may be hard to say who is pushing and who is being pushed, who is leading and who is following. If one party seeks to increase its capabilities, it may seem that others must too. The dynamic may be built into the competition and may unfold despite a mutual wish to resist it. But need this be the case in a strategic competition among nuclear countries? It need not be if the conditions of competition make deterrent logic dominant. Deterrent logic domi-

nates if the conditions of competition make it nearly impossible for any of the competing parties to achieve a first-strike capability. Early in the nuclear age, the implications of deterrent strategy were clearly seen. "When dealing with the absolute weapon," as William T. R. Fox put it, "arguments based on relative advantage lose their point."[30] The United States has sometimes designed its forces according to that logic. Donald A. Quarles, when he was President Eisenhower's secretary of the Air Force, argued that "sufficiency of air power" is determined by "the force required to accomplish the mission assigned." Avoidance of total war then does not depend on the "*relative* strength of the two opposed forces." Instead, it depends on the "*absolute* power in the hands of each, and in the substantial invulnerability of this power to interdiction."[31] To repeat: If no state can launch a disarming attack with high confidence, force comparisons are irrelevant. Strategic arms races are then pointless. Deterrent strategies offer this great advantage: Within wide ranges neither side need respond to increases in the other side's military capabilities.

Those who foresee nuclear arms racing among new nuclear states fail to make the distinction between war-fighting and war-deterring capabilities. War-fighting forces, because they threaten the forces of others, have to be compared. Superior forces may bring victory to one country; inferior forces may bring defeat to another. Force requirements vary with strategies and not just with the characteristics of weapons. With war-fighting strategies, arms races become hard to avoid. Forces designed for deterrence need not be compared. As Harold Brown said when he was secretary of Defense, purely deterrent forces "can be relatively modest, and their size can perhaps be made substantially, though not completely, insensitive to changes in the posture of an opponent."[32] With deterrent strategies, arms races make sense only if a first-strike capability is within reach. Because thwarting

a first strike is easy, deterrent forces are quite cheap to build and maintain.

Second, deterrent balances are inherently stable. This is another reason for new nuclear states to decrease, rather than increase, their military spending. As Secretary Brown saw, within wide limits one state can be insensitive to changes in another state's forces. French leaders thought this way. France, as President Valéry Giscard d'Estaing said, "fixes its security at the level required to maintain, regardless of the way the strategic situation develops in the world, the credibility—in other words, the effectiveness—of its deterrent force."[33] With deterrent forces securely established, no military requirement presses one side to try to surpass the other. Human error and folly may lead some parties involved in deterrent balances to spend more on armaments than is needed, but other parties need not increase their armaments in response, because such excess spending does not threaten them. The logic of deterrence eliminates incentives for strategic-arms racing. This should be easier for lesser nuclear states to understand than it was for the United States and the Soviet Union. Because most of them are economically hard-pressed, they will not want to have more than enough.

Allowing for their particular situations, the policies of nuclear states confirm these statements. Britain and France are relatively rich countries, and they have tended to overspend. Their strategic forces were nevertheless modest enough when one considers that they thought that to deter the Soviet Union would be more difficult than to deter states with capabilities comparable to their own. China of course faced the same task. These three countries however, have shown no inclination to engage in nuclear arms races. India was content to have a nuclear military capability that may or may not have produced warheads, and Israel long maintained her ambiguous status. New nuclear states are likely to conform

to these patterns and aim for a modest sufficiency rather than vie with one another for a meaningless superiority.

Third, because strategic nuclear arms races among lesser powers are unlikely, the interesting question is not whether they will be run but whether countries having strategic nuclear weapons can avoid running conventional races. No more than the United States will new nuclear states want to rely on executing the deterrent threat that risks all. Will not their vulnerability to conventional attack induce them at least to maintain their conventional forces?

American policy since the early 1960s again teaches lessons that mislead. From President John F. Kennedy and Secretary Robert S. McNamara onward, the United States followed a policy of flexible response, emphasizing the importance of having a continuum of forces that would enable the United States to fight at any level from irregular to strategic nuclear warfare. A policy that decreases reliance on deterrence by placing more emphasis on conventional forces would seem to increase the chances that wars will be fought. Americans wanted to avoid nuclear war in Europe. Europeans wanted to avoid any war in Europe. Flexible response weakened Europeans' confidence in America's deterrent forces. Their worries were well expressed by a senior British general: "McNamara is practically telling the Soviets that the worst they need expect from an attack on West Germany is a conventional counterattack."[34] Why risk one's own destruction if one is able to fight on the ground and forego the use of strategic weapons? The policy of flexible response seemed to lessen reliance on deterrence and to increase the chances of fighting a war, although not nearly as much as the unnamed British general thought.

Large conventional forces neither add to nor subtract from the credibility of second-strike nuclear forces. Smaller nuclear states are likely to understand this more easily than the United States and the Soviet Union did, if only

because few of them can afford to combine deterrent with large war-fighting forces.

Israel's military policy seems to fly in the face of deterrent logic. Its military budget has at times exceeded 20 percent of its GDP.[35] In fact Israel's policy bears deterrent logic out. So long as Israel continues to hold the Golan Heights and parts of the West Bank, it has to be prepared to fight for them. Since they by no means belong unambiguously to Israel, deterrent threats do not cover them. Because of America's large subsidies, economic constraints have not driven Israel to the territorial settlement that would shrink its borders sufficiently to make a deterrent policy credible. Global and regional forces, however, now do so. To compete internationally, Israel has to reduce its military expenditures. If a state's borders encompass only its vital interests, their protection does not require spending large sums on conventional forces.

The success of a deterrent strategy depends neither on the conventional capabilities of states nor on the extent of territory they hold. States can safely shrink their borders because defense in depth becomes irrelevant. The point can be put the other way around: With deterrent forces, arms races in their ultimate form—the fighting of offensive wars designed to increase national security—become pointless.

THE FREQUENCY AND INTENSITY OF WAR

The presence of nuclear weapons makes war less likely. One may nevertheless oppose the spread of nuclear weapons on the ground that they would make war, however unlikely, unbearably intense should it occur. Nuclear weapons have not been fired in anger in a world in which more than one country has them. We have enjoyed half a century of nuclear peace, but we can never have a guarantee. We may be grateful for decades of

nuclear peace and for the discouragement of conventional war among those who have nuclear weapons. Yet the fear is widespread that if they ever go off, we may all be dead. People as varied as the scholar Richard Smoke, the arms controller Paul Warnke, and the former defense secretary Harold Brown have all believed that if any nuclear weapons go off, many will. Although this seems the least likely of all the unlikely possibilities, it is not impossible. What makes it so unlikely is that, if a few warheads are fired, all of the countries involved will want to get out of the mess they are in.

McNamara asked himself what fractions of the Soviet Union's population and industry the United States should be able to destroy to deter it. This was the wrong question. States are not deterred because they expect to suffer a certain amount of damage but because they cannot know how much damage they will suffer. Near the dawn of the nuclear age, Bernard Brodie put the matter simply, "The prediction is more important than the fact."[36] The prediction, that is, that attacking the vital interests of a country having nuclear weapons may bring the attacker untold losses. As Patrick Morgan later put it, "To attempt to compute the cost of a nuclear war is to miss the point."[37]

States are deterred by the prospect of suffering severe damage and by their inability to do much to limit it. Deterrence works because nuclear weapons enable one state to punish another state severely without first defeating it. "Victory," in Thomas Schelling's words, "is no longer a prerequisite for hurting the enemy."[38] Countries armed only with conventional weapons can hope that their military forces will be able to limit the damage an attacker can do. Among countries armed with strategic nuclear forces, the hope of avoiding heavy damage depends mainly on the attacker's restraint and little on one's own efforts. Those who compared expected deaths through strategic exchanges of nuclear warheads with

casualties suffered by the Soviet Union in World War II overlooked the fundamental difference between conventional and nuclear worlds.[39]

Deterrence rests on what countries *can* do to each other with strategic nuclear weapons. From this statement, one easily leaps to the wrong conclusion: that deterrent strategies, if they have to be carried through, will produce a catastrophe. That countries are able to annihilate each other means neither that deterrence depends on their threatening to do so nor that they will do so if deterrence fails. Because countries heavily armed with strategic nuclear weapons can carry war to its ultimate intensity, the control of force becomes the primary objective. If deterrence fails, leaders will have the strongest incentives to keep force under control and limit damage rather than launching genocidal attacks. If the Soviet Union had attacked Western Europe, NATO's objectives would have been to halt the attack and end the war. The United States had the ability to place thousands of warheads precisely on targets in the Soviet Union. Surely we would have struck military targets before striking industrial targets and industrial targets before striking cities. The intent to hit military targets first was sometimes confused with a war-fighting strategy, but it was not one. It would not have significantly reduced the Soviet Union's ability to hurt us. Whatever American military leaders thought, our strategy rested on the threat to punish. The threat, if it failed to deter, would have been followed not by spasms of violence but by punishment administered in ways that conveyed threats of more to come.

A war between the United States and the Soviet Union that got out of control would have been catastrophic. If they had set out to destroy each other, they would have greatly reduced the world's store of developed resources while killing millions outside of their own borders through fallout. Even while destroying themselves, states with few weapons would do less

damage to others. As ever, the biggest international dangers come from the strongest states. Fearing the world's destruction, one may prefer a world of conventional great powers having a higher probability of fighting less-destructive wars to a world of nuclear great powers having a lower probability of fighting more-destructive wars. But that choice effectively disappeared with the production of atomic bombs by the United States during World War II.

Does the spread of nuclear weapons threaten to make wars more intense at regional levels, where wars of high intensity have been possible for many years? If weaker countries are unable to defend at lesser levels of violence, might they destroy themselves through resorting to nuclear weapons? Lesser nuclear states live in fear of this possibility. But this is not different from the fear under which the United States and the Soviet Union lived for years. Small nuclear states may experience a keen sense of desperation because of vulnerability to conventional as well as to nuclear attack, but, again, in desperate situations what all parties become most desperate to avoid is the use of strategic nuclear weapons. Still, however improbable the event, lesser states may one day fire some of their weapons. Are minor nuclear states more or less likely to do so than major ones? The answer to this question is vitally important because the existence of some states would be at stake even if the damage done were regionally confined.

For a number of reasons, deterrent strategies promise less damage than war-fighting strategies. First, deterrent strategies induce caution all around and thus reduce the incidence of war. Second, wars fought in the face of strategic nuclear weapons must be carefully limited because a country having them may retaliate if its vital interests are threatened. Third, prospective punishment need only be proportionate to an adversary's expected gains in war after those gains are discounted for the

many uncertainties of war. Fourth, should deterrence fail, a few judiciously delivered warheads are likely to produce sobriety in the leaders of all of the countries involved and thus bring rapid deescalation. Finally, war-fighting strategies offer no clear place to stop short of victory for some and defeat for others. Deterrent strategies do, and that place is where one country threatens another's vital interests. Deterrent strategies lower the probability that wars will begin. If wars start nevertheless, deterrent strategies lower the probability that they will be carried very far.

Nuclear weapons lessen the intensity as well as the frequency of war among their possessors. For fear of escalation, nuclear states do not want to fight long and hard over important interests—indeed, they do not want to fight at all. Minor nuclear states have even better reasons than major ones to accommodate one another and to avoid fighting. Worries about the intensity of war among nuclear states have to be viewed in this context and against a world in which conventional weapons have become ever costlier and more destructive.

THE RECENT SPREAD OF NUCLEAR WEAPONS[40]

As I write this paper in July of 1994, the American government, the press, and much of the public are agitated by the possibility that North Korea has, or will soon have, nuclear weapons.

The United States opposes North Korea's presumed quest for nuclear military capability, yet in the past half-century, no country has been able to prevent other countries from going nuclear if they were determined to do so. Sometimes we have helped them, as with Britain and France, sometimes we have looked the other way, as with Israel, and sometimes we have tried and failed to persuade countries to forego the capability.

In all previous cases, the United States was constrained by interests beyond our concern for slowing the spread of nuclear weapons. During the Cold War we did not want to drive India more deeply into the arms of the Soviet Union, and we valued the cooperation of Pakistan. Even though China, South Korea, and Japan have opposed sanctions against North Korea, America sees itself as being less constrained this time. We have maneuvered and threatened to get North Korea to observe the nuclear Non-Proliferation Treaty's inspection provisions. But even if it does, what will we learn?

David T. French, spokeman for the CIA, described North Korea as being "impossible to penetrate."[41] Andrew Hanami thinks that North Korea may have dug 11,000 tunnels, good places for hiding warheads.[42] Guesses about the number of nuclear sites in North Korea vary. We know that North Korea will never allow inspectors to roam the land freely, and even if they could, they would never be able to say that they had found all of the places where bombs may be hidden. Any country that wants to build warheads, and not be caught doing it, will disguise its efforts and hide its bombs. After all, even with numerous United Nations inspectors romping around Iraq, we still do not know for sure what facilities and weapons it does and does not have.

Like earlier nuclear states, North Korea wants the military capability because it feels weak, isolated, and threatened. The ratio of South Korea's to North Korea's GDP in 1992 was 14:1; of their populations, 2:1; of their defense budgets, 2:1.[43] North Korea does have twice as large an active army and twice as many tanks, but their quality is low, spare parts and fuel scarce, training limited, and communications and logistics dated. In addition, South Korea has the backing of the United States and the presence of American troops.

Despite North Korea's weakness, some people, Americans especially, worry that the North might invade

the South, even using nuclear weapons in doing so. How concerned should we be? No one has figured out how to use nuclear weapons except for deterrence. Is a small and weak state likely to be the first to do so? Countries that use nuclear weapons have to fear retalition. Why would the North now invade the South? It did in 1950, but only after prominent American congressmen, military leaders, and other officials said that we would not fight in Korea. Any war on the peninsula would put North Korea at severe risk. Perhaps because South Koreans appreciate this fact more keenly than Americans do, relatively few of them seem to believe that North Korea will invade.

Kim Il Sung threatened war, but anyone who thinks that when a dictator threatens war we should believe him is lost wandering around somewhere in a bygone conventional world.[44] Kim Il Sung was sometimes compared with Hitler and Stalin.[45] Despite similarities, it is foolish to forget that North Korea's capabilities in no way compare with the Germany of Hitler or the Soviet Union of Stalin. Nuclear weapons make states more cautious, as the history of the nuclear age shows. "Rogue states," as the Soviet Union and China were once thought to be, have followed the pattern. The weaker and the more endangered a state is, the less likely it is to engage in reckless behavior. North Korea's external behavior has sometimes been ugly, but certainly not reckless. Its regime has shown no inclination to risk suicide. This is one good reason why surrounding states counsel patience.

Senator John McCain, a former naval officer, nevertheless believes that North Korea would be able to attack without fear of failure because a South Korean and American counterattack would have to stop at the present border for fear of North Korean nuclear retaliation.[46] Our vast nuclear forces would not deter an attack on the South, yet the dinky force that the North may have would deter us! A land-war game played by the Ameri-

can military in 1994 showed another side of American military thinking. The game pitted the United States against a Third World country similar to North Korea. Losing conventionally, it struck our forces with nuclear weapons. For unmentioned reasons, our superior military forces had no deterrent effect. Results were said to be devastating. With such possibilities in mind, Air Force General George Lee Butler and his fellow planners called for a new strategy of deterrence, with "generic targetting" so we will be able to strike wherever "terorist states or rogue leaders . . . threaten to use their own nuclear, chemical or biological weapons." The strategy will supposedly deter states or terrorists from brandishing or using their weapons. Yet General Butler himself believes, as I do, that Saddam Hussein was deterred from using chemicals and biologicals in the Gulf War.[47]

During the 1993 American–South Korean "Team Spirit" military exercises, North Korea denied access to International Atomic Energy Agency inspectors and threatened to withdraw from the nuclear Non-Proliferation Treaty. The North's reaction suggests, as one would expect, that the more vulnerable North Korea feels, the more strenuously it will pursue a nuclear program. The pattern has been universal ever since the United States led the way into the nuclear age. Noticing this, we should be careful about conveying military threats to weak states.

One worry remains: A nuclear North Korea would put pressure on South Korea and Japan to develop comparable weapons. Their doing so would hardly be surprising. Nuclear states have tended to come in hostile pairs. American capability led to the Soviet Union's, the Soviet Union's to China's, China's to India's, India's to Pakistan's, and Israel's spurred Iraq's efforts to acquire bombs of its own. Countries are vulnerable to capabilities that they lack and others have. Sooner or later, usually

sooner, they try to gain comparable capabilities or seek the protection of states that have them. Do we think we can change age-old patterns of international behavior? A nuclear North Korea is but one reason for other countries in the region to go nuclear, especially when confidence in America's extended deterrent wanes as the bipolar world disappears.

CIA Director James Woolsey has said that he "can think of no example where the introduction of nuclear weapons into a region has enhanced that region's security or benefitted the security interests of the United States."[48] But surely nuclear weapons helped to maintain stability during the Cold War and to preserve peace throughout the instability that came in its wake. Except for interventions by major powers in conflicts that for them were minor, peace has become the privilege of states having nuclear weapons, while wars have been fought mainly by those who lack them. Weak states cannot help noticing this. That is why states feeling threatened want to have their own nuclear weapons and why states that have them find it so hard to halt their spread.

Pakistan is another recent worry. The worry runs to form. When the weak fear the strong, the weaker party does what it can to maintain its security. When asked why nuclear weapons are so popular in Pakistan, Prime Minister Benazir Bhutto answered, "It's our history. A history of three wars with a larger neighbor. India is five times larger than we are. Their military strength is five times larger. In 1971, our country was disintegrated. So the security issue for Pakistan is an issue of survival."[49] From the other side, Shankar Bajpai, former Indian ambassador to Pakistan, China, and the United States, has said that "Pakistan's quest for a nuclear capability stems from its fear of its larger neighbor, removing that fear should open up immense possibilities"—possibilities for a less worried and more relaxed life.[50]

CONCLUSION

The conclusion is in two parts. The first part applies the above analysis to the present. The second part uses it to peer into the future.

What Follows from My Analysis?

I have argued that the gradual spread of nuclear weapons is better than either no spread or rapid spread. We do not face happy choices. We may prefer that countries have conventional weapons only, do not run arms races, and do not fight. Yet the alternative to nuclear weapons may be ruinous arms races for some countries with a high risk of their becoming engaged in devastating conventional wars.

Countries have to take care of their own security. If countries feel insecure and believe that nuclear weapons would make them more secure, America's policy of opposing the spread of nuclear weapons will not prevail. Any slight chance of bringing the spread of nuclear weapons to a halt exists only if the United States strenuously tries to achieve that end. To do so carries costs measured in terms of other interests. The strongest way for the United States to persuade other countries to forego nuclear weapons is to guarantee their security. How many states' security do we want to guarantee? Wisely, we are reluctant to make promises, but then we should not expect to decide how other countries provide for their security.

Some have feared that weakening opposition to the spread of nuclear weapons will lead numerous states to obtain them because it may seem that "everyone is doing it."[51] Why should we think that if we relax, numerous states will begin to make nuclear weapons? Both the United States and the Soviet Union were relaxed in the past, and those effects did not follow. The Soviet Union initially supported China's nuclear program. The United States helped both Britain and France to produce nuclear weapons. By 1968 the CIA had informed President Johnson of the existence of Israeli nuclear weapons, and in July of 1970, Richard Helms, director of the CIA, gave this information to the Senate Foreign Relations Committee. These and later disclosures were not followed by censure of Israel or by reductions of economic assistance.[52] And in September of 1980, the executive branch, against the will of the House of Representatives but with the approval of the Senate, continued to do nuclear business with India despite its explosion of a nuclear device and despite its unwillingness to sign the nuclear Non-Proliferation Treaty.

Many more countries can make nuclear weapons than do. One can believe that American opposition to nuclear arming stays the deluge only by overlooking the complications of international life. Any state has to examine many conditions before deciding whether or not to develop nuclear weapons. Our opposition is only one factor and is not likely to be the decisive one. Many states feel fairly secure living with their neighbors. Why should they want nuclear weapons? Some countries, feeling threatened, have found security through their own strenuous efforts and through arrangements made with others. South Korea is an outstanding example. Many officials believe that South Korea would lose more in terms of American support if it acquired nuclear weapons than it would gain by having them.[53] Further, on occasion we might slow the spread of nuclear weapons by *not* opposing the nuclear weapons programs of some countries. When we oppose Pakistan's nuclear program, we are saying that we disapprove of countries developing nuclear weapons no matter what their neighbors do.

The gradual spread of nuclear weapons has not opened the nuclear floodgates. Nations attend to their security in ways they think best. The fact that so many more countries can make nuclear weapons than do says

more about the hesitation of countries to enter the nuclear military business than about the effectiveness of American nonproliferation policy. We should suit our policy to individual cases, sometimes bringing pressure against a country moving toward nuclear-weapons capability and sometimes quietly acquiescing. No one policy is right in all cases. We should ask what the interests of other countries require before putting pressure on them. Some countries are likely to suffer more in cost and pain if they remain conventional states than if they become nuclear ones. The measured spread of nuclear weapons does not run against our interests and can increase the security of some states at a price they can afford to pay.

What Does the Nuclear Future Hold?

What will a world populated by a larger number of nuclear states look like? I have drawn a picture of such a world that accords with experience throughout the nuclear age. Those who dread a world with more nuclear states do little more than assert that more is worse and claim without substantiation that new nuclear states will be less responsible and less capable of self control than the old ones have been. They feel fears that many felt when they imagined how a nuclear China would behave. Such fears have proved unfounded as nuclear weapons have slowly spread. I have found many reasons for believing that with more nuclear states the world will have a promising future. I have reached this unusual conclusion for four main reasons.

First, international politics is a self-help system, and in such systems the principal parties determine their own fate, the fate of other parties, and the fate of the system. This will continue to be so.

Second, given the massive numbers of American and Russian warheads, and given the impossibility of

one side destroying enough of the other side's missiles to make a retaliatory strike bearable, the balance of terror is indestructible. What can lesser states do to disrupt the nuclear equilibrium if even the mighty efforts of the United States and the Soviet Union did not shake it?

Third, nuclear weaponry makes miscalculation difficult because it is hard not to be aware of how much damage a small number of warheads can do. Early in this century Norman Angell argued that war could not occur because it would not pay.[54] But conventional wars have brought political gains to some countries at the expense of others. Among nuclear countries, possible losses in war overwhelm possible gains. In the nuclear age Angell's dictum becomes persuasive. When the active use of force threatens to bring great losses, war becomes less likely. This proposition is widely accepted but insufficiently emphasized. Nuclear weapons reduced the chances of war between the United States and the Soviet Union and between the Soviet Union and China. One must expect them to have similar effects elsewhere. Where nuclear weapons threaten to make the cost of wars immense, who will dare to start them?

Fourth, new nuclear states will feel the constraints that present nuclear states have experienced. New nuclear states will be more concerned for their safety and more mindful of dangers than some of the old ones have been. Until recently, only the great and some of the major powers have had nuclear weapons. While nuclear weapons have spread, conventional weapons have proliferated. Under these circumstances, wars have been fought not at the center but at the periphery of international politics. The likelihood of war decreases as deterrent and defensive capabilities increase. Nuclear weapons make wars hard to start. These statements hold for small as for big nuclear powers. Because they do, the gradual spread of nuclear weapons is more to be welcomed than feared.