Correspondence

Responding to Chemical and Biological Threats

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To the Editors:

In a recent issue of *International Security,* Scott Sagan argues that the current U.S. policy of "calculated ambiguity" is flawed.[1] This policy regards the use of chemical or biological weapons against the United States as a serious act of aggression and threatens an overwhelming response to such attacks, although the means of retaliation are intentionally left ambiguous. The policy is intended to strengthen the ability of the United States to deter a chemical or biological attack, by leaving open the possibility that the United States will respond to such an attack with a nuclear strike. Sagan contends that reliance on calculated ambiguity may give rise to a commitment trap, where "the U.S. president would feel compelled to retaliate with nuclear weapons in order to maintain his or her international and domestic reputation for honoring commitments" (p. 87). Sagan argues that the United States should abandon the calculated ambiguity doctrine and replace it "with a stronger commitment to respond to the use of chemical or biological weapons with prompt and devastating conventional retaliation" (p. 86).

Sagan's argument suffers from two problems. First, he does not explain why, under the doctrine of calculated ambiguity, a decision by the United States to respond to the use of chemical or biological weapons with conventional means would give rise to negative reputational effects. Clearly, if the United States decided not to respond at all, its reputation and credibility would suffer. But if it responds with conventional weapons instead of nuclear weapons, as long as the conventional response is devastating enough to outweigh the gains from aggression and serve as a deterrent to the future use of chemical and biological weapons, it is not clear why any loss of credibility would occur. In other words, negative reputational effects follow from the failure to carry out the threatened punishment, not from the failure to carry out the threatened punishment by a particular means.

This is illustrated by the Cuban missile crisis, Sagan's own example of a commitment trap. As Sagan notes, "In a September 13 press conference, [President John F. Kennedy]

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1. Scott D. Sagan, "The Commitment Trap: Why the United States Should Not Use Nuclear Threats to Deter Biological and Chemical Weapons Attacks," *International Security,* Vol. 24, No. 4 (Spring 2000), pp. 85–115. Further references to this article appear parenthetically in the text.

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stated that 'if Cuba should possess a capability to carry out offensive actions against the United States . . . the United States would act'" (p. 99). Kennedy here commits the United States to act but does not specify the means it will use. This parallels the present policy of calculated ambiguity, which creates a commitment to retaliate without stipulating the type of response.

When on October 14, 1962, U-2 flights over Cuba revealed that the Soviet Union was installing nuclear missiles that could reach the United States, Kennedy and some of his advisers believed that the country had to respond. Kennedy had promised that the United States would act if Cuba acquired an offensive capability, and he feared that negative reputational effects would follow nonaction.[2] The United States was not committed to the use of any particular means, however, despite Kennedy's earlier warning that "the gravest issues would arise" if Cuba acquired "offensive ground-to-ground missiles" (ibid.). Although Kennedy could have chosen to launch a nuclear attack against Cuba, and even though he considered an invasion, he opted to use less drastic means. The decision to impose a quarantine around Cuba did not have negative reputational consequences, however, because the United States acted both decisively and successfully.

Thus negative reputational consequences follow only when a state fails to effectively carry out a deterrent threat—not when it successfully carries out a deterrent threat by means other than those originally specified. Therefore, under the calculated ambiguity doctrine, negative reputational effects will follow from the implementation of a conventional instead of a nuclear response to the use of chemical or biological weapons only if the conventional means used are inadequate. But if this is the case—if a commitment trap does exist because the conventional means at the disposal of the United States cannot adequately punish a state for its use of chemical or biological weapons—then Sagan's recommended policy of relying solely on a conventional deterrent threat will be inadequate.

The second problem with Sagan's argument is that he overlooks the real failure of the U.S. policy of calculated ambiguity: It does not distinguish between chemical and biological weapons and the different kinds of threats that these weapons pose to U.S. national security. Once we take into account the differences between chemical and biological weapons, it becomes clear that the calculated ambiguity doctrine should be retained for biological weapons. This is the case even if we accept Sagan's argument that it creates a commitment trap. As Sagan recognizes, the policy of calculated ambiguity gains extra deterrent power from the possibility that nuclear weapons will be used.[3] If Sagan is right about the commitment trap, this extra deterrent power comes with an additional cost: It creates the possibility that nuclear weapons could be used in situations when the United States would prefer not to use them. The United States thus faces a

2. See, for example, Kennedy's statement on October 16 and Secretary of State Dean Rusk's analysis on October 18, as reported in Ernest R. May and Philip D. Zelikow, eds., *The Kennedy Tapes: Inside the White House during the Cuban Missile Crisis* (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1997), pp. 92, 126–127; see also McGeorge Bundy, *Danger and Survival: Choices about the Bomb in the First Fifty Years* (New York: Random House, 1988), pp. 392–393.

3. Of course, as long as the United States possesses nuclear weapons, it is always possible that it will use them.

choice between a more effective, yet potentially more costly, deterrence policy of calculated ambiguity and a less costly, but less effective, policy of conventional deterrence.[4]

A proper assessment of this choice requires distinguishing between chemical and biological weapons.[5] I agree with Sagan that the policy of calculated ambiguity should not apply to chemical weapons. A nuclear threat is not necessary to deter the use of chemical weapons—they simply do not pose that great of a threat. Chemical weapons have not proved decisive on the battlefield, and chemical warfare defenses serve both to limit their effectiveness and to deter their use. Furthermore, because chemical weapons do not have great destructive power, they do not pose much of a strategic, countervalue threat, even when married to ballistic missiles.[6] Because the potential benefits of a strategic use of chemical weapons can be easily outweighed by the damage that could be inflicted by U.S. conventional forces, a conventional retaliatory threat will be adequate to deter their use. In this case, calculated ambiguity and the extra risk of nuclear use that the doctrine may create are unnecessary.

In the case of a biological attack, however, significant damage could be done to U.S. interests. Although the general use of biological weapons on the battlefield is unlikely given the difficulties involved in their use, an attack on the rear areas of a battlefield could have a devastating effect on American troops as well as on U.S. allies, while a strategic biological attack on the continental United States could be catastrophic. In the case of biological weapons, therefore, the cost of a failure to deter the use of these weapons could be extremely high, and the extra risk of nuclear use that may follow from the policy of calculated ambiguity is well worth it.

Here it is important to examine how both the policy of calculated ambiguity and Sagan's recommended policy of conventional deterrence interact with existential nuclear deterrence. Sagan and I agree, I think, that existential nuclear deterrence helps to protect the United States from attacks—including those with biological weapons—on its vital interests. Sagan argues that the policy of calculated ambiguity reinforces this existential deterrence only if it creates a commitment trap: If the policy of calculated ambiguity does not serve as a costly signal that puts the reputation of the United States at risk, then it does not add any additional power to the existential deterrence that already exists (pp. 97–98). He therefore prefers a policy that relies only on a declared threat of conventional retaliation. This policy, however, could be interpreted as a sign that the United States would be unwilling to use nuclear weapons in retaliation for a biological attack, leading states that consider the use of biological weapons to underestimate the potential costs of such an attack. The policy of calculated ambiguity reinforces existential deterrence not by creating a commitment trap, but by helping to

4. Conventional deterrence is less effective: Even with American conventional superiority, other countries might be able to convince themselves that a conventional retaliatory strike might be worth the gains of aggression, because the costs of a conventional retaliatory strike are more ambiguous than the costs of a nuclear retaliatory strike.

5. For an insightful analysis of chemical weapons, see Thomas L. McNaugher, "Ballistic Missiles and Chemical Weapons," *International Security,* Vol. 15, No. 2 (Fall 1990), pp. 5–34; on biological weapons, see Susan B. Martin, "The Role of Biological Weapons in International Politics: The Real Military Revolution," *Journal of Strategic Studies,* forthcoming.

6. As Sagan states, "It is difficult to imagine a chemical attack that would be so harmful to U.S. interests that a nuclear response would ever be warranted" (p. 113).

ensure that states considering the use of biological weapons against the United States do not miscalculate the potential costs of such an attack.

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The Author Replies:

The official U.S. government policy is to maintain "calculated ambiguity" about whether the United States would retaliate with nuclear weapons in response to an adversary's use of chemical weapons (CW) or biological weapons (BW) against U.S. allies, U.S. armed forces overseas, or the U.S. homeland. Since the 1991 Gulf War, numerous civilian and military leaders have stated that the United States might use nuclear weapons in response to CW and BW threats or attacks, and some have even stated that the United States *will* use nuclear weapons in such circumstances.[1] The central argument in my spring 2000 *International Security* article was that this policy has created a dangerous "commitment trap" problem.[2] The benefit of making such nuclear threats, whether stated ambiguously or clearly, is that they can increase an adversary's estimate of the probability that the U.S. president would order nuclear retaliation, which should therefore decrease the likelihood of chemical or biological weapons attacks. But there is a serious cost attached to this obvious benefit: If deterrence fails despite nuclear threats, the statements will also increase the likelihood that the United States will actually use nuclear weapons, because the president's personal and the U.S. government's institutional reputations for following through on threats would be perceived to be at stake. I argued that current U.S. nuclear doctrine has therefore created a subtle dilemma that has not been recognized, much less debated, in both policy and academic circles: Is the improvement in the U.S. ability to deter CW and BW threats worth the increased likelihood of a U.S. nuclear response if deterrence fails?

I welcome Susan Martin's entry into this important debate about U.S. nuclear weapons doctrine.[3] Martin makes two central arguments in her critique of my article. First,

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1. For examples, see "Only A-Bomb Could Destroy Libya Plant, Scientist Says," *Los Angeles Times,* April 24, 1996, p. A7; "U.S. Policy Allows Nuclear Weapons," *Baltimore Sun,* February 1, 1998, p. 31A; and Bill Gertz, "China's Nukes Could Reach Most of U.S.," *Washington Times,* April 1, 1998, p. A1.
2. Scott D. Sagan, "The Commitment Trap: Why the United States Should Not Use Nuclear Threats to Deter Biological and Chemical Weapons Attacks," *International Security,* Vol. 24, No. 4 (Spring 2000), pp. 85–115.
3. For additional contributions to the debate, see Richard N. Haass, "Strategies for Enhanced Deterrence," Scott D. Sagan, "Why the U.S. Should Not Use Nuclear Threats," and Michael P. Scharf, "Enforcement through Sanctions, Force, and Criminalization," all in Sidney D. Drell, Abraham D. Sofaer, and George D. Wilson, eds., *The New Terror: Facing the Threat of Biological and Chemical Weapons* (Stanford, Calif.: Hoover Institution Press, 1999), pp. 397–479; Steve Fetter, "Limiting the Role of Nuclear Weapons," in Harold A. Feiveson, ed., *The Nuclear Turning Point: A Blueprint for Deep Cuts and De-Alerting of Nuclear Forces* (Washington, D.C.: Brookings, 1999), pp. 29–45; and George H. Quester, "The Response to Renegade Use of Weapons of Mass Destruction," and Brad Roberts, "Rethinking How Wars Must End: NBC War Termination Issues in the Post–Cold War

she disputes my claims that a serious commitment trap problem exists. She argues that a state's and statesman's reputations depend on whether they respond effectively to chemical or biological attacks, not on whether they use the particular means (i.e., nuclear weapons) that they earlier threatened to use. Hence she concludes that my recommendation to rely on threats of devastating conventional retaliation in response to CW or BW use contradicts my theoretical analysis. Either the proposed conventional retaliation will be ineffective, in which case the United States should not have followed my recommendation; or it will be effective, in which case there was no problem of commitment trap to begin with because the president's and government's reputation would not have suffered.

Martin's argument is clever, but not compelling. For what influences the likelihood of a U.S. president ordering the use of nuclear weapons is not the final outcome of a retaliatory strike as determined by scholars after the conflict, but rather the president's perceptions at the time of decision during the crisis about the likely outcomes of various military options under consideration. As long as a nuclear decisionmaker believes that backing away from threats will damage his or her personal reputation or the nation's credibility in crises, it will influence his or her behavior regardless of what scholars later determine to be the final impact of decisions on reputation.[4]

Nuclear threats are a double-edged sword. The deterrent benefit and the danger, if deterrence fails, result from the same factor: Threats create an extra element of commitment, increasing the incentive for the president to use nuclear weapons. The costs produced by the commitment trap are, ironically, most clear in ambiguous situations. If a president was absolutely certain that retaliatory strikes with conventional weapons would be effective against an adversary, there would be little need for a nuclear response. If the president was absolutely certain that only nuclear retaliation would be effective, then the incentive to use nuclear weapons would be considerable regardless of what he or she or other officials had previously said. The impact of the extra incentive to use nuclear weapons, due to the commitment trap, will therefore be greatest when the president is least sure about whether conventional retaliation will be militarily or politically effective.

Unfortunately, that is precisely the condition likely to prevail in future conflicts. If U.S. troops are attacked with biological weapons during a military intervention in a future conflict—in the Persian Gulf, the Korean peninsula, or elsewhere—the casualties could be enormous, and military advisers are likely to be uncertain about whether conventional retaliatory options could destroy the adversary's remaining biological weapons or provide sufficient punishment to deter further attacks. A president's decision on whether to retaliate with conventional or nuclear weapons should be determined by the following factors: estimates of military effectiveness of different options, predictions about what form of retribution would be politically costly to the adversary, and concerns about the impact of U.S. retaliation on other potential proliferants. It should not be (but unfortunately would be) influenced by any U.S. nuclear threats that had been

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Era," in Victor A. Utgoff, ed., *The Coming Crisis: Nuclear Proliferation, U.S. Interests, and World Order* (Cambridge, Mass.: MIT Press, 2000), pp. 224–227, 245–277.

4. Jonathan Mercer, *Reputation and International Politics* (Ithaca, N.Y.: Cornell University Press, 1996).

made earlier, for the sake of deterrence, without the president having had a thorough consideration of the likely consequences.

Martin's second criticism is that I "overlook" the failure of current U.S. doctrine to differentiate between less lethal chemical weapons and more lethal biological weapons, a differentiation that leads Martin to support the use of nuclear threats against only biological weapons. With respect to chemical weapons, Martin appears to accept my central argument that a commitment trap problem exists when she states that "in this case, calculated ambiguity and the extra risk of nuclear use that the doctrine may create are unnecessary." With respect to biological weapons, she also agrees with my argument that nuclear threats can decrease the probability that adversaries will use BW, and even agrees that because deterrence may nevertheless fail, there is an increased risk of U.S. nuclear use under that doctrine. What the disagreement is about is how to assign the relative probabilities and how to assess the trade-offs between a decreased risk of an adversary's use of biological weapons and a corresponding increased risk of the United States using nuclear weapons in retaliation.

I agree that the differentiation between CW and BW is important. Indeed that is precisely why I have argued elsewhere that analysts should abandon the term "weapons of mass destruction," because it exaggerates the effects of chemical weapons and may even elevate their value in the eyes of some developing world leaders.[5] But I continue to disagree with Martin on whether the United States should threaten nuclear retaliation in response to BW use. She insists that because "the cost of a failure to deter the use of these [biological] weapons could be extremely high, . . . the extra risk of nuclear use that may follow from the policy of calculated ambiguity is well worth it." Is it that clear? I argue that U.S. nuclear retaliation following anything but the most extreme worst-case biological weapons attack against U.S. population centers would produce global political fallout that would likely outweigh the benefits of nuclear retribution. That worst-case scenario, however, would not be made more likely by a new doctrine promising devastating conventional retaliation, because it is the contingency in which adversaries are most likely to predict a U.S. nuclear response regardless of statements made ahead of time.

Reasonable people can disagree on this judgment and how to assess the trade-off between two important national security interests. But reasonable people should not ignore that such a value trade-off dilemma exists. Too often in debates about nuclear doctrine, scholars and policymakers alike argue that their preferred policy best meets all U.S. national security goals. Martin's critique is thus a valuable step in the right direction by forcing us to think about the unthinkable and focus on exactly the right set of vexing questions.

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5. See Lewis A. Dunn, Peter R. Lavoy, and Scott D. Sagan, "Conclusions: Planning the Unthinkable," in Lavoy, Sagan, and James J. Wirtz, eds., *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological, and Chemical Weapons* (Ithaca, N.Y.: Cornell University Press, 2000), pp. 239–240.