

When Are Arms Races Dangerous?

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Rational versus Suboptimal Arming

Are arms races dangerous? This basic international relations question has received extensive attention.¹ A large quantitative empirical literature addresses the consequences of arms races by focusing on whether they correlate with war, but remains divided on the answer.² The theoretical literature falls into opposing camps: (1) arms races are driven by the security dilemma, are explained by the rational spiral model, and decrease security, or (2) arms races are driven by revisionist adversaries, explained by the deterrence model, and increase security.³ These

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1. The pioneering study is Samuel P. Huntington, "Arms Races: Prerequisites and Results," *Public Policy*, Vol. 8 (1958), pp. 41–86. Historical treatments include Paul Kennedy, "Arms-Races and the Causes of War, 1850–1945," in Kennedy, *Strategy and Diplomacy, 1870–1945* (London: George Allen and Unwin, 1983); and Grant T. Hammond, *Plowshares into Swords: Arms Races in International Politics, 1840–1991* (Columbia: University of South Carolina Press, 1993). Reviews of the literature include George Downs, "Arms Races and War," in Philip E. Tetlock, Jo L. Husbands, Robert Jervis, Paul C. Stern, and Charles Tilly, eds., *Behavior, Society, and Nuclear War*, Vol. 2 (New York: Oxford University Press, 1991), pp. 82–84; and Charles L. Glaser, "The Causes and Consequences of Arms Races," in Nelson W. Polsby, ed., *Annual Review of Political Science*, Vol. 3 (2000), pp. 251–276.

2. See, for example, Susan G. Sample, "Arms Races and Dispute Escalation: Resolving the Debate," *Journal of Peace Research*, Vol. 34, No. 1 (February 1997), pp. 7–22; Michael D. Wallace, "Arms Races and Escalation: Some New Evidence," *Journal of Conflict Resolution*, Vol. 23, No. 1 (March 1979), pp. 3–16; Michael D. Wallace, "Armaments and Escalation: Two Competing Hypotheses," *International Studies Quarterly*, Vol. 26, No. 1 (March 1982), pp. 37–56; Paul F. Diehl, "Arms Races and Escalation: A Closer Look," *Journal of Peace Research*, Vol. 20, No. 3 (September 1983), pp. 205–212; Paul F. Diehl and Jean Kingston, "Messenger or Message? Military Buildups and the Initiation of Conflict," *Journal of Politics*, Vol. 49, No. 3 (August 1987), pp. 801–813; and Suzanne Werner and Jacek Kugler, "Power Transitions and Military Buildups: Resolving the Relationship between Arms Buildups and War," in Kugler and Douglas Lemke, *Parity and War: Evaluations and Extensions of The War Ledger* (Ann Arbor: University of Michigan Press, 1996).

3. On these models, see Robert Jervis, *Perception and Misperception in International Politics* (Princeton, N.J.: Princeton University Press, 1976), chap. 3; and Charles L. Glaser, "The Political Consequences of Military Strategy: Expanding and Refining the Spiral and Deterrence Models," *World Politics*, Vol. 44, No. 4 (July 1992), pp. 497–538. Hedley Bull, *The Control of the Arms Race: Disarmament and Arms Control in the Missile Age* (New York: Frederick A. Praeger, 1961), pp. 3–12, identifies both types of causes.

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theories support divergent policy guidance—arms control versus arms competition.⁴ Neither body of literature, however, succeeds in isolating the causal impact of building arms.

To solve this problem, this article proposes a new perspective for assessing the consequences of arms races.⁵ Scholars need to ask whether an arms buildup was a state's best option for achieving its goals—security and possibly other vital interests. I argue that a sharp distinction must first be made between a state's international security environment and its decision to build arms. If a state's security environment necessitates an arms buildup, then arming, as well as the competition that ensues if its adversary responds, is rational and the state's best policy option. Even if arms races correlate with war, they do not cause it. Instead, the state's security environment causes the arms race and in turn war. In contrast, if the state's decision to launch a buildup is poorly matched to its security environment, then the military buildup and the arms race that it provokes reduce the state's security. It is these suboptimal races that are dangerous—that is, they make war unnecessarily likely.

To implement this approach, I address two questions. First, under what conditions is an arms buildup a state's best option? Second, have states engaged in arms races when they should not have? The response to the first question provides a rational baseline that is necessary for answering the second question. I develop a strategic choice theory of when a rational state should build up arms instead of pursuing restraint and cooperation. A state's arming policy reflects its own motives and the constraints and opportunities created by its security environment. The security environment is determined by material variables—power and the offense-defense balance—and by information variables, with the most important being the state's information about its adversary's motives and goals. The theory draws on defensive realism, but is more general, addressing variation in information about motives, and the decisions of greedy states, as well as the decisions of security seekers. Using this theory to evaluate many of the past century's key arms races, as well as cases of cooperation, I find that a number of these races were suboptimal.

4. See, for example, Thomas C. Schelling and Morton H. Halperin, *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961); George W. Rathjens, "The Dynamics of the Arms Race," *Scientific American*, No. 220 (April 1969), pp. 15–25; and Colin S. Gray, *House of Cards: Why Arms Control Must Fail* (Ithaca, N.Y.: Cornell University Press, 1992).

5. The term "arms race" is itself controversial; for a helpful discussion, see Barry Buzan, *Introduction to Strategic Studies: Military Technology and International Relations* (New York: St. Martin's, 1987), pp. 69–75.

Reformulating the question of arms race consequences clarifies a serious problem with the quantitative literature by explaining why correlation might not reflect causation. In addition, it advances the theoretical debate between the spiral and deterrence model explanations by focusing on the distinction between rational and suboptimal competition. The spiral model, like the deterrence model, offers a rational explanation for arms buildups. These races may be tragic, occurring between states that lack fundamental conflicts of interest, but arms buildups are nevertheless each state's best option for security. In these cases, the international environment, not the arms race, is the real source of danger.

The article first explores the rationale for reformulating the arms race question and identifies a number of significant implications for studying the consequences of arms races. The second section develops the strategic choice theory of arming. The third section applies the theory to assess states' arming decisions. The final section briefly explores policy implications for the United States. Current U.S. policy anticipates the rise of powerful adversaries. The 2002 National Security Strategy calls for maintaining forces strong enough to dissuade military competition;⁶ if this fails, engaging in an arms race to preserve U.S. military dominance would be the natural next step. My finding that many past arms races have been suboptimal should serve as a cautionary warning, suggesting that fuller analysis is required before the United States commits itself to perpetuating its military superiority indefinitely.

Reformulating the Arms Race Question

Research on the consequences of arms races has failed to distinguish between the impact of a state's goals and the international security environment, on the one hand, and the impact of its arming policy, on the other. When a state chooses the best available military policy, it is making a rational decision that reflects, and is largely determined by, its goals and security environment. In explaining outcomes, analysts should credit them to these key factors, not to the state's arming policy. More specifically, when a state's best option is to launch a buildup (and engage in an arms race if necessary) and the probability of war increases when it does so, the increased probability of war should not be attributed to the arms race. Rather, for a security-seeking state, its security

6. President George W. Bush, *The National Security Strategy of the United States of America* (Washington, D.C.: White House, September 2002), <http://www.whitehouse.gov/nsc/nss/html>, pp. 29–30.

environment causes both the arms race and the increased probability of war. The state's international environment is dangerous, but the arms race is not.⁷ In contrast, if a buildup and arms race result because a state fails to choose the best military policy available, then the arms race is suboptimal, has independent effects, and becomes part of the problem. Suboptimal arms races unnecessarily decrease the state's security relative to other available options.⁸ Research on the consequences of arms races therefore must separate rational arming decisions from suboptimal ones.

Figure 1 captures this framing of the arms race question. In the upper-left quadrant are rational arms buildups—cases in which the combination of the state's goals and its security environment made an arms buildup the state's best option, and the state did build up. In the lower-right quadrant, like the upper left, the state's military policy was optimal. In this category, not arming was the state's best option, and the state correctly chose restraint. This restraint could be achieved by unilaterally forgoing a military buildup or by negotiating an arms control agreement. The other two quadrants cover suboptimal arming policies. In the upper-right quadrant are cases in which a state chose to engage in an arms buildup that was not well matched to its security environment. These "dangerous" races decreased the state's security unnecessarily or reduced its ability to achieve other goals (or at best simply wasted its resources). These, therefore, are the arms races that should have been prevented. Finally, in the lower-left quadrant are cases in which a state should have engaged in an arms buildup but did not. A state could have increased its security by being the first to build up arms or by responding to an adversary's buildup, but failed to do so.

The probability of war tends to be higher in the top-left quadrant than in the lower-right quadrant because the security environments that require states to engage in military competition are also more likely to generate insecurity and war than are those that allow states to pursue more cooperative arming policies.⁹ First, and perhaps most important, arms races can be optimal, yet still be associated with an increased probability of war when a state faces a security

7. Arms races may, however, have an independent causal effect that is not captured in this formulation: if they change the state by influencing its domestic politics by, for example, increasing militarism. See Stephen Van Evera, *Causes of War: Power and the Roots of Conflict* (Ithaca, N.Y.: Cornell University Press, 1999), pp. 144–145.

8. A suboptimal buildup/race, however, might simply result in wasted resources, but not a reduction in security.

9. Van Evera, *Causes of War*.

Figure 1. Quality of Arming Decisions.

		State should have armed/raced	
		Yes	No
State did arm/race	Yes	optimal arming: necessary races	suboptimal arming: dangerous races
	No	suboptimal restraint: dangerous cooperation	optimal restraint: desirable cooperation

dilemma. For example, a shift in the offense-defense balance toward offense can force all states to launch arms buildups, yet reduce their capability to thwart an attack and increase the probability of dangerous windows; uncertainty about adversaries' motives can require states to compete, yet this competition can reduce their security by signaling malign motives.¹⁰ Second, a declining state that can still build arms faster than its rising adversary could rationally decide that its best option is to launch a buildup that yields military advantages and supports a preventive war policy. This logic can be used to explain Germany's rapid buildup of land forces before World War I.¹¹ Third, a technological advance that makes existing weapons obsolete can require the state that enjoyed a lead in deployment of the earlier technology to engage in an arms race that leaves it less secure. For example, starting in the mid-1900s Britain had to compete in deployment of Dreadnought-type battleships, even though the ensuing arms race would reduce Britain's margin of naval superiority over Germany.¹²

10. Robert Jervis, "Cooperation under the Security Dilemma," *World Politics*, Vol. 30, No. 2 (January 1978), pp. 167–214; Charles L. Glaser, "The Security Dilemma Revisited," *World Politics*, Vol. 50, No. 1 (October 1997), pp. 174–185; and Andrew Kydd, "Game Theory and the Spiral Model," *World Politics*, Vol. 49, No. 3 (April 1997), pp. 371–400.

11. Dale C. Copeland, *The Origins of Major War* (Ithaca, N.Y.: Cornell University Press, 2000), pp. 56–78. Relatedly, a greedy state that enjoys a power advantage might launch a buildup to acquire military advantages that would make the costs of war acceptable, thereby improving its bargaining position and possibly increasing the probability of war.

12. Robert J. Art, "The Influence of Foreign Policy on Seapower: New Weapons and Weltpolitik in Wilhelminian Germany," in Art and Kenneth N. Waltz, *The Use of Force*, 2d ed. (New York: University Press of America, 1983), p. 186.

Although the probability of war will tend to be higher for cases of optimal competition than for cases of optimal cooperation, it would be a mistake to conclude that arms races increase the probability of war and therefore that as a general rule states should avoid them. States in the upper-left quadrant of Figure 1 are pursuing the best available policies; not engaging in an arms race would provide less security (or other objectives) than racing, and in many cases, result in a higher probability of war.

This approach to analyzing the consequences of arms races yields three key insights. First, the extensive research program that has focused on the correlation between arms races and the probability of war is of little help in assessing the consequences of arms races. Starting in the late 1970s, scholars working with the Correlates of War data began investigating the correlation between arms races and the escalation of crises to war. A substantial literature revolves largely around how to code the occurrence of arms races and how to handle multiple arms races that were associated with a single conflict.¹³ As challenging as these issues are, the basic framework is inadequate. Finding a correlation between arms races and the probability of war may say little about the impact of arms races, because the correlation could simply reflect the causal impact of dangerous security environments.¹⁴ Instead of comparing all arms races (those in both upper quadrants in Figure 1) to nonraces (those in both bottom quadrants), rational and suboptimal cases need to be separated.

Second, whether an arms race increases the probability of war does not hinge on whether the spiral model or the deterrence model applies to a given race. Rational arms races are possible in both spiral model and deterrence model situations, but they are not the fundamental cause of conflict in either. Much of the arms race literature casts the question of the consequences of arms races as a debate between the “preparedness model,” in which preparing for war by arming reduces its probability, and the “arms race model,” in which building arms and engaging in an arms race to avoid war increases its probability. Both models have more developed versions. The deterrence model is the more developed version of the preparedness model; it explains competition and conflict as the result of greedy adversaries, that is, states interested in

13. Sample, “Arms Races and Dispute Escalation.”

14. For other criticisms of this literature, including that it lumps together different types of rational arms races, see Downs, “Arms Races and War,” pp. 82–84; and Glaser, “The Causes and Consequences of Arms Races.” See also Paul F. Diehl and Mack J.C. Crescenzi, “Reconfiguring the Arms Race-War Debate,” and Susan G. Sample, “Furthering the Investigation of the Effects of Arms Buildups,” *Journal of Peace Research*, Vol. 35, No. 1 (1998), pp. 111–118 and pp. 122–126, respectively.

expansion for nonsecurity reasons. The spiral model is the more developed version of the arms race model; it assumes that an adversary is motivated by security concerns and emphasizes the potential of a security dilemma, especially uncertainty about other states' motives, to generate rational international competition.¹⁵ In this standard framing of the arms race question, if war occurs when the deterrence model applies, fundamental political disputes, not the arms race, caused it; if war occurs when the spiral model applies, the arms race is the cause of the war. In contrast, I am arguing against attributing causation to the arms race in spiral-model cases because states are responding rationally to the incentives created by the international security environment.

Third, although the literature tends to treat the causes and consequences of arms races as separate topics, in fact they are intimately related.¹⁶ Causes are typically divided into two categories: external and internal. External causes are essentially the international factors that define a state's security environment and guide its rational behavior; internal causes are unit-level factors—for example, organizational interests and bureaucratic politics—that can distort a state's arming policy. Given this categorization, the type of cause determines the nature of the consequences—an arms race has consequences of its own only when the causes of the arms race are internal to the state, resulting in a suboptimal arms buildup.

A Theory of Rational/Optimal Arms Races

This section develops a theory of rational/optimal arming that provides a baseline against which states' actual behavior can be compared.¹⁷ Policies that diverge from this baseline are suboptimal and reflect distortions generated by domestic politics.¹⁸ The theory assumes that states are unitary actors whose behavior is guided by the constraints and opportunities presented by the interna-

15. Jervis, *Perception and Misperception in International Politics*, chap. 3; Glaser, "The Political Consequences of Military Strategy"; and Kydd, "Game Theory and the Spiral Model."

16. Glaser, "The Causes and Consequences of Arms Races."

17. Other analyses of when states should arm include George W. Downs and David M. Rocke, *Tacit Bargaining, Arms Races, and Arms Control* (Ann Arbor: University of Michigan Press, 1990); George W. Downs, David M. Rocke, and Randolph Siverson, "Arms Races and Cooperation," *World Politics*, Vol. 38, No. 2 (October 1985), pp. 118–146; Robert Powell, *In The Shadow of Power: States and Strategies in International Politics* (Princeton, N.J.: Princeton University Press, 1999), chap. 2; and Ido Oren, "A Theory of Armament," *Conflict Management and Peace Science*, Vol. 16, No. 1 (Spring 1998), pp. 1–29.

18. James D. Fearon, "Domestic Politics, Foreign Policy, and Theories of International Relations," in Nelson W. Polsby, ed., *Annual Review of Political Science*, Vol. 1 (1998), pp. 289–313.

tional environment. I draw on defensive realism—including its emphasis on the impact of anarchy, the security dilemma, offense-defense variables, and power—but develop a more general theory.¹⁹ The theory makes explicit the role of information about others' motives in defining the state's international environment and influencing the magnitude of the security dilemma. It also addresses the decisions of greedy states. The theory provides answers that diverge substantially from both Kenneth Waltz's standard structural realism and offensive realism, in finding that although a security-seeking state should adopt competitive arming policies under certain conditions, it should exercise restraint under many others.²⁰

I begin by focusing on a central question: Is a security-seeking state more secure if both it and its adversary launch buildups or if neither does?²¹ I next briefly address greedy states, then turn to questions about the timing and probability of the adversary's buildup.

BOTH STATES BUILD UP OR NEITHER DOES

Decisions about whether to engage in an arms buildup rest on three related but separable questions about the impact of an arms race. First, would an arms race enhance the state's military capabilities—that is, its ability to perform military missions? Second, would increased military capabilities decrease the adversary's security? Third, would the benefits of the increased capabilities more than offset the dangers created by the adversary's insecurity? The easiest cases to judge involve races that do not promise to increase the state's military capabilities—as a rule, states should avoid these races. Reaching judgments is more complicated when an arms race would produce countervailing effects.

Answers to these questions depend on both material and information variables.²² There are a large number of potential combinations. The following dis-

19. Charles L. Glaser, "Realists as Optimists: Cooperation as Self-Help," *International Security*, Vol. 19, No. 3 (Winter 1994/95), pp. 50–90; Van Evera, *Causes of War*; Jack Snyder, *Myths of Empire: Domestic Politics and International Ambition* (Ithaca, N.Y.: Cornell University Press, 1991); and Jeffrey W. Taliaferro, "Security Seeking under Anarchy: Defensive Realism Revisited," *International Security*, Vol. 25, No. 3 (Winter 2000/01), pp. 128–161.

20. Kenneth N. Waltz, *Theory of International Politics* (Reading, Mass.: Addison-Wesley, 1979); and John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: W.W. Norton, 2001).

21. For analysis that focuses on binary choices about specific types of weapons, see Thomas C. Schelling, "A Framework for Evaluation of Arms-Control Proposals," *Dædalus*, Vol. 104, No. 3 (Summer 1975), pp. 187–200.

22. Other variables can be important, including the forces deployed before the potential race; polarity, which influences a state's alternatives to arming (James D. Morrow, "Arms versus Allies: Tradeoffs in the Search for Security," *International Organization*, Vol. 47, No. 2 [Spring 1993],

cussion lays out the basic logic of how a variable influences a state's options and explores some of the key combinations.

MATERIAL VARIABLES. A state's ability to increase its military capabilities in an arms race depends on the combined effect of power and offense-defense variables.²³ Power—the ratio of states' resources that can be converted into military assets—plays a central role in determining whether a state can maintain a lead in a quantitative arms race.²⁴ All else being equal, the greater a state's power, the more likely an arms buildup is to increase its military capability. A weak state can be decisively outbuilt by a powerful adversary, which usually makes an arms race undesirable. When states are equally powerful, an arms buildup is more desirable, because the state has a reasonable chance of holding its own, although there is still some probability of losing the competition. Arms races are more likely because both states see potential benefits. When a state has a power advantage, an arms buildup is still more desirable, because the state is more likely both to win the race and to acquire larger military advantages.

There is, however, a countervailing consideration that reduces how much the benefits of arming increase with advantages in power. A state wants to avoid arms buildups that reduce its adversary's security. As a result, a state with a power advantage may want to restrain its buildup, forgoing or at least limiting military advantages to avoid undermining the adversary's military capability and to signal its benign motives.²⁵ This signaling should be effective because the state's power advantage makes clear its potential and therefore its restraint. As discussed below, how the state should resolve this trade-off depends on the offense-defense balance and information about its adversary's motives.

The offense-defense balance is the ratio of the cost of forces required to take territory to the cost of the forces deployed by the defender.²⁶ The state's power

pp. 207–233) and the reactions its arming is likely to generate; and the quality of the adversary's evaluative capabilities. Although incomplete, the discussion in the text indicates how to proceed analytically.

23. To keep the analysis reasonably simple, the following discussion assumes that power is constant. When power is shifting, the declining state will have additional incentives to launch a buildup. On preventive war, see Copeland, *The Origins of Major War*; and Van Evera, *Causes of War*, chap. 4.

24. On defining and measuring power, see Mearsheimer, *The Tragedy of Great Power Politics*, chap. 3.

25. This consideration also generates incentives for cooperation between equally powerful states, but these political/signaling benefits are then smaller, while the military benefits of cooperation are larger.

26. On offense-defense theory, see Van Evera, *Causes of War*, chap. 6; Charles L. Glaser and Chaim Kaufmann, "What Is the Offense-Defense Balance and Can We Measure It?" *International Security*,

multiplied by the offense-defense balance indicates its prospects for acquiring an effective defensive capability. When defense has an advantage, a state will usually be better able to protect its interests with a defensive doctrine than an offensive one. The larger the advantage of defense, the smaller the ratio of forces required for an adequate defensive capability, which reduces the state's incentive to build larger forces and decreases the difficulty (cost) of responding to its adversary's buildup; arms races that do occur should peter out more quickly. Once the state achieves an adequate defensive posture, it has incentives for restraint because continuing the buildup would suggest that the state desires an offensive capability and thus signal malign motives. Therefore, defense advantage creates reinforcing military and political rationales for restrained arming policies.

A state that suffers a power disadvantage will be able to preserve its defensive capability if this disadvantage is smaller than the extent of defense advantage. Under these conditions, the more powerful state should recognize its poor prospects for acquiring an offensive capability and therefore the limited value in pursuing an arms buildup. Arms levels should stabilize and races should be relatively short. For example, this logic explains why a medium power should be able to maintain an effective nuclear deterrent against a superpower without generating an intense arms competition. In contrast, a sufficiently powerful state can acquire an offensive capability, even when defense has the advantage.

Although defense advantage favors a defensive strategy, a security-seeking state could nevertheless require an offensive capability for a variety of reasons, a number of which have been important in major-power arms races.²⁷ A state could require an offensive capability because it has geographical interests that are separated from its homeland. For example, during the 1920s and 1930s, the United States required an offensive naval capability to protect its interests in East Asia and had to decide whether to engage in an arms race with Japan over this capability. A state could also value an offensive capability because it faces a two-front war and needs to fight its adversaries sequentially. This rationale underpinned Germany's Schlieffen Plan in the years leading up to World War I. In addition, a state could choose an offensive capability and engage in

Vol. 22, No. 4 (Spring 1998), pp. 44–82; Keir A. Lieber, "Grasping the Technological Peace: The Offense-Defense Balance and International Security," *International Security*, Vol. 25, No. 1 (Summer 2000), pp. 71–104; Stephen Biddle, "Rebuilding the Foundations of Offense-Defense Theory," *Journal of Politics*, Vol. 63, No. 3 (August 2001), pp. 741–774; and Sean M. Lynn-Jones, "Offense-Defense Theory and Its Critics," *Security Studies*, Vol. 4, No. 4 (1995), pp. 660–691.

27. On when offensive doctrines cause peace, see Van Evera, *Causes of War*, pp. 152–160.

the arms competition that this generates to communicate its resolve. This rationale played a prominent role in the U.S. debate over Cold War nuclear policy.²⁸

Whether a state that is capable of acquiring an offensive capability should exercise this option depends on the benefits—including the value of the interests at stake and the marginal deterrent value of an offensive capability—and the costs—including the provocation generated by acquiring a threatening capability. For example, during the Cold War, opposition to NATO's acquisition of a conventional offensive capability focused on the high quality of its defensive capabilities, which reduced the deterrent value of offense, and on the threat the Soviets would impute to an offensive capability that was arguably unnecessary for protecting the status quo.²⁹

How strenuously the weaker state should attempt to offset this offensive capability depends on the interests that are threatened. If its interests are greater than its adversary's, the state may be willing to devote a larger percentage of its resources to acquiring arms, which would increase its prospects for prevailing in the arms race.³⁰ Even if prevailing is infeasible, the weaker state may prefer to compete to enhance its deterrent by deploying forces large enough to increase the costs of war and demonstrate its resolve. As discussed below, the weaker state should also consider the opposing state's motives—if it requires offense for security, then racing is less likely to be successful and more likely to strain relations.

In contrast to the situation described above, as the advantage of defense diminishes, or if offense actually has the advantage, a state will increasingly find that equal-size forces are inadequate to support a defensive strategy and that it requires an advantage in force size.³¹ Consequently, arms competition becomes a more attractive option, especially for states that enjoy a power advantage.³² If sufficiently large, a power advantage enables a state to achieve

28. Charles L. Glaser, *Analyzing Strategic Nuclear Policy* (Princeton, N.J.: Princeton University Press, 1990), pp. 63–67, 240–242.

29. For the case in favor, see Samuel P. Huntington, "Conventional Deterrence and Conventional Retaliation in Europe," *International Security*, Vol. 8, No. 3 (Winter 1983/84), pp. 32–56.

30. Another reason that the weaker state might engage in an arms competition instead of simply accepting military inferiority is that the states disagree about their power, although this is less likely when the difference is large. On this type of interaction, see Andrew Kydd, "Arms Races and Arms Control: Modeling the Hawk Perspective," *American Journal of Political Science*, Vol. 44, No. 2 (April 2000), pp. 222–238.

31. If states knew the value of the balance with certainty, they might require an advantage in force size only under offense advantage. In practice, however, states face uncertainty about the offense-defense balance. In addition, uncertainty about the quality of forces and the scenario that leads to war further support the case for superiority.

32. If the advantage of offense is large, however, neither country can achieve its security with a defensive doctrine. As a result, both will adopt offensive doctrines, and the key to success will lie in

an effective defensive capability, in addition to an offensive capability. Although larger forces decrease the adversary's military capability, the adversary should appreciate the security pressures that make them necessary, which should reduce the political provocation they generate.

Nevertheless, even when offense has the advantage, states should sometimes prefer the military status quo to an arms race for two reasons. First, although the military status quo is unsatisfactory, a buildup could further reduce the state's security. If the state is not confident of maintaining a lead in an arms race, which is likely when states are comparably powerful, then cooperating could reduce the probability of still more unsatisfactory outcomes.³³ At the same time, by agreeing not to build when it has some chance of acquiring a meaningful advantage, the state can signal its benign motives. Second, if weapons that support offensive and defensive missions can be distinguished, states have the option of pursuing qualitative arms control—limiting weapons that favor offense, while allowing those that favor defense.³⁴ An agreement banning offensive weapons would enhance the state's defensive capabilities and signal benign motives. As discussed below, the key danger, which needs to be weighed against the benefits, is the possibility that one's adversary will violate the agreement.

Figure 2 summarizes the preceding discussion of how different combinations of power and the offense-defense balance should influence a state's decision to build up arms and engage in an arms race.

INFORMATION ABOUT THE ADVERSARY'S MOTIVES. A state's information about its adversary's motives—specifically, its estimate of the probability that the adversary is a security seeker and not a greedy state—influences whether the state should launch an arms buildup.³⁵ As described above, a state sometimes faces a security dilemma in which it must balance (1) competitive options that provide greater military capability and communicate resolve, but risk signaling malign motives, and (2) cooperative options that provide less military capability, but signal benign motives. When a state believes that its adversary is

fighting on the offense. Relative force size will matter relatively little, so arms races should not be intense, but war will be likely.

33. In addition, if the long-term economic consequences of an arms race promise to create domestic political instability or to undermine the state's ability to compete, the state should accept still greater risks in the military status quo.

34. This insight guides modern arms control theory, as in Schelling and Halperin, *Strategy and Arms Control*.

35. This argument is developed more fully in Charles L. Glaser, "Anarchy, Information about Motives, and International Politics," University of Chicago, July 2003. The state's decision also depends on its information about the adversary's information about the state's motives.

Figure 2. Material Variables and the Choice of Arming Policies.

		Offense-Defense Balance	
		Defense > Offense	Offense > Defense
Power	Advantage	<ul style="list-style-type: none"> • No need to build—defensive doctrine without force advantage is adequate; action-reaction peters out • Exceptions if geopolitical rationales generate offensive requirements <ul style="list-style-type: none"> ♦ Must then compare political costs against military benefits (depends on information about adversary's motives) 	<ul style="list-style-type: none"> • Arms buildups and offensive doctrine often best, unless <ul style="list-style-type: none"> ♦ Power advantage is large enough to make defense possible ♦ Power advantage is too small to guarantee success; weigh risks of losing a race ♦ Offense and defense are different; weigh the benefits of limiting offense against risks of cheating
	Disadvantage	<ul style="list-style-type: none"> • If defense advantage is greater than power disadvantage, defensive doctrine is still feasible; arms buildups can be avoided or should peter out • If defense advantage is less than power disadvantage, cannot prevent adversary from acquiring offensive capability <ul style="list-style-type: none"> ♦ Weigh arms competition to retain some deterrent capability against cooperating to improve relations 	<ul style="list-style-type: none"> • Buildup holds little prospect of producing a defensive capability • Might build up to preserve an offensive capability

likely motivated primarily by security, the danger created by a shortfall in military capabilities is smaller, and the benefits of communicating one's own benign motives are larger than if the state believes that its adversary is likely motivated primarily by greed. Thus, the higher the state's estimate that the adversary is a security seeker, the stronger the case for cooperative arming policies.

It is therefore the combination of information and material variables (power and offense-defense variables) that determines a state's preferred arming policy. Information about motives influences the trade-offs identified in Figure 2.

When states are quite sure that others are security seekers, information about motives can essentially eliminate the security dilemma, even when ma-

terial conditions would otherwise generate a large one. In these rather extreme cases, in which states enjoy very good political relations, military policy plays a much smaller role, and arms races and arms control may not even be considered as policy options. For example, the defense advantage created by nuclear weapons might be so large that Canada could acquire a nuclear deterrent capability against the United States, whereas in the prenuclear era Canada's power disadvantage left it defenseless. Considering only material variables, one would conclude that the invention of nuclear weapons made a nuclear buildup Canada's best option. However, forgoing nuclear weapons is rational because Canada's confidence in the benign motives of the United States eliminates the security dilemma.

Information matters even when a state is less sure of its adversary's motives. Consider, for example, a state that has a power advantage large enough to enable it to acquire an offensive capability when defense has the advantage. As described above, this state faces a complicated choice that involves weighing the military benefits of an offensive capability against the political costs of increasing its adversary's insecurity. If the state believes that its adversary is likely a security seeker, then an offensive capability is less valuable, because it is less likely to be necessary for protecting the status quo. In addition, signaling restraint by forgoing offense is more valuable, because reassuring a security seeker reduces its interest in challenging the status quo, which makes an offensive capability still less valuable. In contrast, if the state believes that its adversary is likely a greedy state, then the relative importance of these factors shifts in the opposite direction, making an arms buildup to acquire an offensive capability a better bet.

Similarly, information about motives could play a decisive role in decisions about whether to pursue an arms control agreement when offense has the advantage. This type of agreement could have large benefits, but is risky because the state's military capability could be easily undermined if its adversary cheats on the agreement. The agreement is more desirable when the adversary is likely to be a security seeker, because cheating is less likely, and signaling benign intentions is more important.

These arguments are consistent with the broad guidance provided by the deterrence and spiral models, but the strategic choice theory presented here is still more general, emphasizing the impact of uncertainty about the adversary's motives. Consequently, except in extreme cases of near certainty, the theory calls for a mix of spiral and deterrence model policies.³⁶ In addition, the

36. On policy under uncertainty, see David M. Edelstein, "Managing Uncertainty: Beliefs about In-

theory emphasizes the importance of considering material variables, which can generate divergent conclusions. For example, there are situations in which, contrary to the deterrence model, a state should cooperate with a greedy adversary. If offense and defense can be differentiated and monitoring capabilities are excellent, then the state should usually pursue arms control, even if its adversary is known to be greedy.

GREEDY STATES. Compared to the security-seeking states considered above, a greedy state will find that an arms buildup is its best option under a wider range of conditions. As a result, a theory of rational arming decisions should include variation in the motives of the state that is deciding whether to launch an arms buildup. Failing to do so could result in mistakenly concluding that a competitive arming policy was suboptimal.

A greedy state will sometimes prefer an offensive capability when a security seeker would prefer a defensive capability, because it requires offense to conquer territory that is not required to ensure its security. In addition, unlike security seekers, greedy states will adopt policies that risk reducing their security somewhat to achieve nonsecurity objectives. As a result, a greedy state should be more inclined to adopt competitive arming policies. For example, whereas a security seeker with a power advantage should not launch a buildup when its forces are sufficient for protecting the status quo, building could be a greedy state's best option, even though this choice would signal malign motives and make its adversary harder to deter. Similarly, a greedy state would see advantages in rejecting limits on offensive forces, even if this leaves it less capable of defending its territory.

Consequently, judging whether a greedy state's arming policy is optimal is more difficult. It requires weighing the security costs of an arms buildup against the nonsecurity benefits, which may require a full understanding of what the state values. This said, certain races would be suboptimal for all but the most extreme greedy states. For example, only a state that places much greater value on nonsecurity expansion than on security should choose an arms race to advance peripheral interests, if the competition promises also to significantly reduce the state's ability to protect its homeland. Similarly, even a greedy state should not engage in an arms race to gain offensive capabilities that it has virtually no chance of acquiring.

tentions and the Rise of Great Powers," *Security Studies*, Vol. 12, No. 2 (Autumn 2002), pp. 1–40; and Jervis, *Perception and Misperception in International Politics*, pp. 111–112. On states with mixed motives, see Glaser, "The Political Consequences of Military Strategy."

FURTHER QUESTIONS REQUIRED TO DETERMINE WHETHER OR NOT TO BUILD

If the preceding analysis leads the state to conclude that it is better off if both states build up their arms than if neither does, then the state should launch an arms buildup. If, however, the state reaches the opposite conclusion, it needs to address additional questions before reaching an arming decision.

HOW DANGEROUS IS FALLING A STEP BEHIND IN THE ARMS RACE? If the state is better off in the military status quo than if both states launch buildups, but would be greatly disadvantaged if its adversary is the first to do so, then the state's best option could be to launch a buildup before its adversary does. The danger of waiting to respond to the adversary's buildup depends on a number of factors. First, the offense-defense balance influences the impact of the adversary's first move: the greater the advantage of defense, the less sensitive the state's capabilities are to the adversary's buildup and, therefore, the smaller the danger of waiting to respond if the adversary builds. Second, the forces that are deployed in the military status quo will influence the implications if the adversary launches a buildup first. Larger forces tend to be more robust than smaller ones. For example, building a small number of nuclear weapons would have huge implications in a disarmed world, but be virtually irrelevant when countries had already deployed thousands of nuclear weapons. Finally, the better the state's monitoring capability, the smaller the lead its adversary could achieve by launching a buildup first and, therefore, the smaller the danger in cooperating.³⁷ Therefore, technologies and arms control agreements that enable states to improve their monitoring capabilities make mutual cooperation more attractive. As a result, even when the offense-defense balance leaves the state's military capability sensitive to relatively small changes in force size, good monitoring arrangements could make cooperation in the military status quo preferable to launching an arms buildup.

HOW LIKELY IS THE ADVERSARY TO LAUNCH AN ARMS BUILDUP IF THE STATE DOES NOT? In deciding whether or not to launch a buildup, the state needs to assess the probability that its adversary would reciprocate restraint and, in the case of explicit cooperation, abide by an arms control agreement. If virtually certain that its adversary would build up, then the state has little reason to accept the dangers of falling a step behind in an arms race. The adversary's motives are a key variable: Greedy states will place greater value on military advantages and therefore would be willing to run larger risks to acquire them.

37. Similarly, the slower the rate at which the adversary could build, the smaller the danger posed by its first move.

For example, during the Cold War, hard-liners in the United States opposed arms control agreements with the Soviet Union partly because they were convinced that the Soviets would cheat. A second consideration influencing the adversary's decision to launch an arms buildup is the benefit of gaining a jump in an arms race: the larger the benefits, the more likely an adversary will build. The benefits are simply the flip side of the dangers of falling behind, which were discussed above. Even an adversary pursuing only security will feel greater pressure to launch an arms buildup as the benefits increase, if only to avoid the greater danger of falling behind.

HOW LIKELY IS THE ADVERSARY NOT TO RESPOND IF THE STATE BUILDS? A state that preferred the military status quo to an arms race might nevertheless prefer to launch a buildup if its adversary would not respond. As discussed above, the adversary might not respond because it lacks the resources. In addition, an adversary that has the necessary resources might not respond if the state's buildup does not pose a serious threat. This could occur if the buildup does not jeopardize the adversary's ability to protect its vital interests. The adversary would also see a smaller threat and therefore be less likely to respond if its information about the state's motives made it confident that the increased military capabilities would not be used against its interests. Under most other conditions, however, the state should expect its adversary to react to its arms buildup.

Evaluating Arms Races and Cooperation

This section applies the theory developed above to many of the key major-power arms races of the past century to determine whether states' arming decisions were well matched to their security environments or were instead suboptimal.³⁸ To explore the range of possibilities captured by Figure 1, this section also evaluates important cases in which states cooperated when this was their best option, and in which states did not build up arms when this was not their best option.³⁹ I compare a state's actual behavior to the policies that

38. For lists of these races, see Huntington, "Arms Races"; Kennedy, "Arms-Races and the Causes of War, 1850-1945"; and Hammond, *Plowshares into Swords*.

39. A likely example of the latter, which space limitations do not permit evaluating here, is the British failure to build up its army before World War II. See Brian Bond, *British Military Policy between the Two World Wars* (Oxford: Oxford University Press, 1980); Barry R. Posen, *The Sources of Military Doctrine* (Ithaca, N.Y.: Cornell University Press, 1984); Elizabeth Keir, *Imagining War: French and British Doctrine between the Wars* (Ithaca, N.Y.: Cornell University Press, 1997); and Stephen R. Rock, *Appeasement in International Politics* (Lexington: University of Kentucky Press, 2000), chap. 3.

the rational theory prescribes under the conditions the state faced.⁴⁰ States should be judged in light of the uncertainties they faced at the time of their decisions.

GERMAN NAVY, 1898–1912/14

In 1898 Germany launched a naval buildup that was intended to challenge the British navy, which was significantly augmented four times in the years before World War I.⁴¹ In the ensuing arms race, Germany failed to undermine Britain's naval capabilities. Britain interpreted the buildup as a signal of malign German motives,⁴² which, combined with the increase in German naval forces, led Britain to increase cooperation with Russia and France.⁴³ Germany's sense of encirclement contributed to its growing insecurity, making war more likely.⁴⁴ The question is whether this bad outcome reflected Germany's goals and the international conditions it faced, or instead suboptimal policies.

This is a case of power disadvantage and defense advantage that left Germany unable to acquire the capabilities it desired. Although Germany's naval policy was intended to challenge the political status quo, elevating Germany to a world power, its naval strategy was militarily defensive.⁴⁵ To achieve success on the defense, Germany judged that its fleet needed to be two-thirds the size of the British fleet attempting to impose a close blockade. In other words, when

40. On this use of a rational model, instead of testing a model, see Terry Moe, "On the Scientific Status of Rational Models," *American Journal of Political Science*, Vol. 23, No. 1 (February 1979), pp. 236–237.

41. On the stages of the naval buildup, see Holger H. Herwig, "Luxury Fleet": *The Imperial German Navy, 1888–1918* (London: George Allen and Unwin), especially pp. 33–92 and appendixes. On the early stages, see Jonathan Steinberg, *Yesterday's Deterrent: Tirpitz and the Birth of the German Battle Fleet* (New York: Macmillan, 1965).

42. Paul M. Kennedy, *The Rise of the Anglo-German Antagonism, 1860–1914* (London: Ashfield, 1980), pp. 421–423 on the security dilemma, and pp. 428–430 on its negative impact; Gerhard Ritter, *The Sword and the Scepter: The Problem of Militarism in Germany*, Vol. 2 (Coral Gables, Fla.: University of Miami Press, 1970), pp. 140–147; Steinberg, *Yesterday's Deterrent*, p. 18; and Arthur Marder, *From the Dreadnought to Scapa Flow: The Royal Navy in the Fisher Era, 1904–1919* (New York: Oxford University Press, 1961), pp. 119–123.

43. On the role of the German threat, see A.J.P. Taylor, *The Struggle for the Mastery of Europe, 1848–1918* (Oxford: Oxford University Press), pp. 403–417, 442–446; and Samuel R. Williamson Jr., *The Politics of Grand Strategy: Britain and France Prepare for War, 1904–1914* (Cambridge, Mass.: Harvard University Press, 1969), pp. 1–25, who give it relatively little weight. Two works that give the German threat greater weight are Kennedy, *The Rise of Anglo-German Antagonism*, pp. 266–267, 428, 441; and V.R. Berghahn, *Germany and the Approach of War in 1914*, 2d ed. (New York: St. Martin's, 1993), p. 60.

44. Snyder, *Myths of Empire*, p. 33.

45. Germany's strategy, however, did vary over these years; see P.M. Kennedy, "The Development of German Naval Operations Plans against England, 1896–1914," in Kennedy, ed., *The War Plans of the Great Powers, 1880–1914* (Boston: Allen and Unwin, 1979), pp. 171–198.

opposing a British close blockade, defense had the advantage, and this 3:2 ratio worked to Germany's advantage.⁴⁶

Although Germany's total power was more than sufficient to achieve this ratio, Germany could not focus entirely on Britain and invest solely in its navy. Instead, Germany had to devote the largest part of its military spending to its army, because its greatest security challenges were on the continent.⁴⁷ The national incomes of Britain and Germany were roughly comparable during the fifteen years before World War I.⁴⁸ Assuming that Germany could devote a third of its military budget to its navy, which is a generous estimate, Germany lacked the power to compete effectively with Britain.⁴⁹ Although Germany was able to pose a serious challenge, Britain responded with naval buildups of its own, placing German naval goals out of reach.⁵⁰

The architect of Germany's naval policy, Adm. Alfred von Tirpitz, implicitly accepted this assessment of Germany's power, but argued that Germany could nevertheless achieve the necessary ratio of forces because Britain's extensive overseas commitments would prevent it from concentrating its navy in the North Sea.⁵¹ Britain, however, did (albeit reluctantly) redistribute its fleet, in addition to increasing its naval building, to offset the German challenge.⁵²

46. This ratio was widely accepted at the time. Berghahn, *Germany and the Approach of War in 1914*, p. 50; and Herwig, "Luxury Fleet," pp. 36–39. If instead Britain decided to impose a distant blockade, which it did during the war and some in the Germany navy started worrying about by the mid-1900s, Germany would require more than a 2:3 ratio. Ritter, *The Sword and the Scepter*, pp. 149–154.

47. Assessing available power under multipolarity is complicated because a state that must plan to defend against multiple adversaries can allocate only a fraction of its total resources against each adversary.

48. Britain enjoyed approximately a 20 percent advantage at the beginning of this period, and Germany enjoyed approximately a 5 percent advantage by the end. See John M. Hobson, "The Military-Extraction Gap and the Wary Titan: The Fiscal Sociology of British Defense Policy, 1870–1913," *Journal of European Economic History*, Vol. 22, No. 3 (Winter 1993), pp. 461–506, especially pp. 503, 505. In addition, Germany's population was larger than Britain's, which made it more difficult to extract a percentage of national income equal to the British percentage, and political divisions within the German federal system further reduced its potential for extracting revenues. *Ibid.*, p. 496.

49. At its peak (in 1911), the German navy's budget was 55 percent of the army's; in 1898 it was 20 percent, and had dropped to 33 percent by 1913. Herwig, "Luxury Fleet," pp. 78, 90; see also tables in David Stevenson, *Armaments and the Coming of War: Europe, 1904–1914* (Oxford: Oxford University Press, 1996), pp. 4–8.

50. Steinberg, *Yesterday's Deterrent*, p. 21; and Berghahn, *Germany and the Approach of War in 1914*, pp. 136–137. Hans-Ulrich Wehler, *The German Empire, 1871–1918* (New York: Berg, 1985), notes that Germany almost reached the desired ratio in 1914.

51. For a powerful criticism of Tirpitz's strategy, which identifies many problems not addressed here, see Paul Kennedy, "Strategic Aspects of the Anglo-German Naval Race," in Kennedy, *Strategy and Diplomacy, 1870–1945*.

52. In fact, Britain began redistributing its navy before Germany became its principal challenger,

The theory's discussion of when a state should expect its adversary to respond to a buildup provides the straightforward logic that guided the British reaction. The German buildup threatened Britain's vital interests and therefore had to be met, even if this required Britain to reduce its ability to protect lesser interests, for example, in East Asia. German leaders should have appreciated this weakness in Tirpitz's case, but could have argued that Britain's reaction was uncertain.⁵³ However, even though this might have been a plausible argument at the time of the first two German naval bills—in 1898 and 1900—it was discredited shortly thereafter by Britain's naval reactions.⁵⁴

From the outset, Tirpitz's plan included a second argument—the “risk theory”—that was designed to deal with the limits of German power, but it too turned out to be flawed. The argument held that the German navy did not need to be able to defeat Britain's naval forces to coerce political concessions; instead, it only had to be able to inflict enough damage to leave Britain vulnerable to the combined strength of the next two naval powers, France and Russia.⁵⁵ This complicated logic, however, depended among other things on the likelihood that the other major naval powers would challenge Britain. British ententes with France and Russia effectively removed this possibility, thereby further reducing the coercive value of Germany's naval buildup.⁵⁶

Although assessment of these material variables is sufficient to conclude that the buildup was suboptimal, consideration of Germany's information about British motives reinforces this conclusion. If Germany believed that Britain was a greedy state determined to greatly increase its influence on the continent and to undermine Germany's, then there would have been a plausible case for redirecting Germany's military spending and acquiring an enhanced, although still inadequate, naval deterrent. However, although Tirpitz believed that war with Britain was unavoidable, other German leaders believed that an

because of the growth of other European navies; the German buildup added to these pressures. See Aaron L. Friedberg, *The Weary Titan* (Princeton, N.J.: Princeton University Press, 1988), chap. 4.

53. Kennedy, “Strategic Aspects of the Anglo-German Naval Race,” p. 140, finds the assumption “was strategically and politically so wide off the mark that it seems incredible that Tirpitz should have based his hopes on it.”

54. In 1903 Britain announced plans to build a new North Sea naval base; in 1904 it started redistributing its fleet; and in 1905 it made public a memorandum that emphasized that changes in the international environment would result in the redistribution of its fleet. Paul M. Kennedy, *The Rise and Fall of British Naval Mastery* (London: Ashfield, 1976), pp. 216–229.

55. Steinberg, *Yesterday's Deterrent*, pp. 83–84; and Kennedy, “Strategic Aspects of the Anglo-German Naval Race,” pp. 132–133.

56. Art, “The Influence of Foreign Policy on Seapower,” p. 185.

alliance with Britain was possible and that Germany's naval buildup was driving Britain to ally with Germany's enemies.⁵⁷

A possible counterargument is that German naval policy was motivated by greed—specifically Germany's desire for colonies—and therefore risks to its security were warranted. Colonies, however, were at most a secondary interest, whereas continental security was Germany's overwhelming vital interest, so it made little sense to trade the former for the latter.

GERMAN ARMY, 1912–14

In 1912, increasingly convinced that enemies encircled it and that war was growing more likely, Germany decided to build up its army.⁵⁸ In reaction, France and Russia strengthened their armies, and France and Britain advanced their plans for cooperating against Germany.⁵⁹ In response to these measures, and especially to the worsening balance of power created by the First Balkan War of 1912, in 1913 Germany launched a much larger buildup, which spurred its opponents to accelerate their buildups.⁶⁰

This is a case of defense advantage and German power advantage. German planning recognized that defense had the advantage in the west. In addition to appreciating the difficulty of frontal assaults, Germany recognized that flanking operations would require substantial numerical superiority. Although France and Germany had roughly equal peacetime armies, Germany planned to employ reserves with its main fighting forces and expected them to be effective in combat; as a result, in 1905 Germany planned in the initial battles to deploy thirty-six corps against France's twenty-one, an advantage of roughly 1.7:1.⁶¹ Nevertheless, Chief of the German General Staff Alfred von Schlieffen

57. Kennedy, *The Rise of the Anglo-German Antagonism, 1860–1914*, pp. 224, 419.

58. The 1912 bill provided for roughly a 5 percent increase in manpower and more than a 10 percent increase in the army's budget. For somewhat different estimates, see David G. Herrmann, *The Arming of Europe and the Making of the First World War* (Princeton, N.J.: Princeton University Press, 1996), pp. 233–235; and Stevenson, *Armaments and the Coming of War*, pp. 8, 210. On the reasons for this decision, see Herrmann, *The Arming of Europe and the Making of the First World War*, pp. 161–172. Stevenson, *Armaments and the Coming of War*, p. 146, suggests that the start of the race may be better attributed to Russia's decisions in 1910.

59. Herrmann, *The Arming of Europe and the Making of the First World War*, pp. 174–176; with somewhat different emphasis, Stevenson, *Armaments and the Coming of War*, pp. 216–224, who sees the French reaction as quite limited.

60. Herrmann, *The Arming of Europe and the Making of the First World War*, pp. 173–198; and Stevenson, *Armaments and the Coming of War*, pp. 285–323. Germany planned to increase its manpower by roughly a sixth, over two years.

61. Herrmann, *The Arming of Europe and the Making of the First World War*, pp. 44–45; see also Jack Snyder, *The Ideology of the Offensive: Military Decision Making and the Disasters of 1914* (Ithaca, N.Y.: Cornell University Press, 1984), pp. 109–110.

believed that Germany's forces were inadequate, concluding that the flanking operation was "an enterprise for which we are too weak."⁶² This ratio therefore provides a conservative (biased toward offense) estimate of the German understanding of the balance.⁶³

The measure of power that was relevant for gauging Germany's prospect in a land arms race was its power relative to France. This is because Germany's plan for victory on the continent relied on defeating France first and quickly. Although Germany suffered a power disadvantage relative to the combined resources of France, Russia, and possibly Britain, it had a power advantage over France that it had not fully exploited. Although Germany's population was about 60 percent larger than France's, their peacetime forces were of comparable size.⁶⁴ Even if France responded, Germany would be able to increase its advantage in force size.⁶⁵

By 1912 German leaders viewed their adversaries' motives as quite threatening. For example, Gen. Franz von Wandel, head of the German General War Department, worried not only about growing Russian forces but also about Russia's inclination "to vent to the ever-growing anti-German mood through active participation in war" and that "we are never safe from war, but rather that our enemies will force one upon us without fear of consequences."⁶⁶ These views combined with a variety of other factors—including growing encirclement, negative shifts in the balance of power in the Balkans, and ongoing Russian efforts to rebuild its army⁶⁷—to convince German leaders that war in the near future was quite likely, if not inevitable.

62. Gerhard Ritter, *The Schlieffen Plan: Critique of a Myth* (Westport, Conn.: Greenwood, 1979), p. 66. Agreeing with this assessment is B.H. Liddell Hart, "Forward," in *ibid.* Schlieffen did little, however, to use this conclusion to support increases in German forces (*ibid.*, p. 67), which suggests that he was not exaggerating his concerns for this purpose; but see also Herrmann, *The Arming of Europe and the Making of the First World War*, p. 184.

63. It is still further biased because Schlieffen's assessment overlooked a number of knowable factors that worked against his strategy. Ritter, *The Schlieffen Plan*; Martin Van Creveld, *Supplying War: Logistics from Wallenstein to Patton* (Cambridge: Cambridge University Press, 1977), pp. 113–141; and Snyder, *The Ideology of the Offensive*, pp. 112–113. Cutting in the other direction, however, were the French reserves that might have influenced the battle's outcome, but were not included in the ratio of initial frontline forces.

64. See Copeland, *The Origins of Major War*, p. 50, Table A2; and Herrmann, *The Arming of Europe and the Making of the First World War*, p. 234, Table A.1. The German general staff stressed this point—Germany inducted 52–54 percent of eligible men, whereas France inducted 85 percent—in calling for large increases in German manpower in the 1913 buildup. Herrmann, *The Arming of Europe and the Making of the First World War*, pp. 184–185; and Stevenson, *Armaments and the Coming of War*, p. 292.

65. Some German leaders, however, doubted that an arms race would benefit Germany. Stevenson, *Armaments and the Coming of War*, p. 294.

66. Quoted in Herrmann, *The Arming of Europe and the Making of the First World War*, pp. 167–168.

67. In assessing the overall quality of German decisionmaking, it is important to recognize that

To evaluate whether under these material and information conditions Germany should have launched an arms race, it is first necessary to consider whether Germany required an offensive doctrine. As discussed in the theory section, although defense advantage usually supports a defensive doctrine, there are conditions under which a country facing a two-front war should choose an offensive doctrine to fight its adversaries sequentially. This purpose guided the Schlieffen Plan: To take advantage of Russia's slower mobilization, Germany would first launch a massive offensive operation against France, then turn the weight of its forces against Russia. The wisdom of Germany's offensive doctrine has been the focus of substantial debate, which I do not attempt to resolve here.⁶⁸

Assuming that Germany required an offensive capability, the case for launching an arms race was solid, although not overwhelming. Given the substantial defense advantage, Germany's decision to use its power advantage to increase the relative size of its army promised to improve Germany's chances against France.⁶⁹ Launching the buildup in 1912 promised to provide this capability before the completion of Russia's military modernization, which German military experts feared was going to undermine Germany's two-front war strategy. Chancellor Theobald von Bethmann Hollweg recognized that Germany faced countervailing security-dilemma pressures, yet concluded that a buildup was warranted. According to David Stevenson, "The bill had increased international tension, but [Bethmann] had had to choose between evils and could not leave so many able-bodied men untrained."⁷⁰ With the probab-

some of these factors—for example, the insecurity generated by the tightening of alliances opposing Germany—were largely the result of Germany's own policies. Other factors—shifts in the Balkan balance of power and improvements in Russian army capabilities—were not the result of Germany policies, but their significance may have been exaggerated by Germany's evaluation of its military environment.

68. Jack Snyder, "Civil-Military Relations and the Cult of the Offensive, 1914 and 1984," and Stephen Van Evera, "The Cult of the Offensive and the Origins of the First World War," both in *International Security*, Vol. 9, No. 1 (Summer 1984), pp. 108–146 and pp. 58–107, respectively; and Scott D. Sagan, "1914 Revisited: Allies, Offense, and Instability," *International Security*, Vol. 11, No. 2 (Fall 1986), pp. 151–175. Copeland, *The Origins of Major War*, does not focus on doctrine, but his argument that Germany preferred a preventive war leads to a requirement for an offensive doctrine.

69. However, there are reasons to believe that the plan's logistical problems limited the value of additional troops. See Ritter, *The Schlieffen Plan*; Van Creveld, *Supplying War*; and Snyder, *The Ideology of the Offensive*.

70. Stevenson, *Armaments and the Coming of War*, p. 296. The German war minister, who favored the 1912 bill, warned that a major army buildup would be the prelude to war and therefore "a step to be taken only if such a struggle seemed inevitable and imminent." Herrmann, *The Arming of Europe and the Making of the First World War*, p. 165. Both France and Russia appreciated Germany's security requirements and therefore did not impute more malign motives. Herrmann, *The Arming of*

ity of war already believed to be very high, Germany's decision to make this trade-off in favor of increasing capabilities at the cost of making war more likely was a reasonable way of managing its security dilemma.

On the other hand, if Germany could have adopted a more defensive doctrine, which German recognition of defense advantage in the west might well have made possible, then its entire strategic environment would have appeared different. With a defensive doctrine, a larger army would have been unnecessary to defend against a French attack, a larger fraction of German troops could have been shifted to defense in the east, and continuing improvements in the Russian army would have been less dangerous.⁷¹ As a result, pressures for German arms buildups, and reactions by its continental adversaries, as well as Germany's incentives for preventive war, would have been smaller. Given this view of its doctrinal requirements, Germany's entire military strategy, including the arms race, was suboptimal.

JAPANESE NAVY IN THE EARLY 1920S

During World War I, the United States launched a naval buildup that had the potential to undermine Japan's defense of East Asia and spurred Japan to initiate a major buildup of its own.⁷² Instead of continuing with naval competition, Japan agreed at the Washington Conference of 1921–22 to significant limits on its naval forces, including force ratios that fell below those required by Japanese doctrine. Although the agreement was not fully satisfactory, both material and information conditions made cooperation Japan's best option.

Japan enjoyed defense advantage, but suffered a power disadvantage that exceeded the defense advantage. Japan's military leaders believed that a 7:10 ratio in naval deployments was required to ensure its security.⁷³ As a result, Japan could satisfy its naval requirements while suffering a degree of naval inferiority. Japan, however, lacked the power to maintain this ratio in an arms race, if the United States devoted itself to acquiring an offensive naval capability.

Europe and the Making of the First World War, pp. 174, 191–192. War became more likely, however, because they understood the German buildup as an indication of the high probability that Germany placed on war, which in turn required them to intensify preparations.

71. Snyder, *The Ideology of the Offensive*, p. 119.

72. John H. Maurer, "Arms Control and the Washington Conference," in Erik Goldstein and Maurer, eds., *The Washington Conference, 1921–22* (Essex, U.K.: Frank Cass, 1994), pp. 268–274; and Roger Dingman, *Power in the Pacific: The Origins of Naval Arms Limitation, 1914–1922* (Chicago: University of Chicago Press, 1976).

73. On the origins of the 70 percent requirement, see David C. Evans and Mark R. Peattie, *Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy, 1887–1941* (Annapolis: Naval Institute Press, 1997), pp. 141–144.

For example, in 1922 Japanese production of iron and steel amounted to only 3 percent of U.S. production,⁷⁴ and its economy was less than a tenth the size of the United States'. Consequently, an arms race would leave Japan far short of its defensive military requirement.

At the Washington Conference, Japan agreed to 6:10 inferiority to the United States in battleships, which was below the 7:10 ratio that Japan believed it required.⁷⁵ U.S. naval experts agreed with their Japanese counterparts that there was potentially a militarily significant difference between these ratios.⁷⁶ Japan's decision to accept this less-than-completely satisfactory ratio was heavily influenced by recognition of its inability to compete effectively with the United States and by the U.S. ability to impose an even less desirable ratio. Naval Minister Kato Tomosaburo, who represented Japan at the conference, accepted the 6:10 ratio partly because he believed that the United States would win the naval race that would result if the conference failed.⁷⁷ In addition, Japan accepted the less favorable ratio because the United States and Britain agreed not to fortify their bases in the western Pacific, which reduced their ability to project naval power in the event of war.⁷⁸ Although controversial within the Japanese navy,⁷⁹ these agreements arguably provided Japan with naval dominance in the region.⁸⁰

74. Correlates of War data, <http://www.umich.edu/cowproj>.

75. The countries also agreed to qualitative limits on the size of ships and their guns, because otherwise a country could gain an advantage by building larger ships, while meeting the limitations on total tonnage. Stephen E. Pelz, *Race to Pearl Harbor: The Failure of the Second London Naval Conference and the Onset of World War II* (Cambridge, Mass.: Harvard University Press, 1974), p. 1. Emphasizing the political dimension of the agreements is Emily O. Goldman, *Sunken Treaties: Naval Arms Control between the Wars* (University Park: University of Pennsylvania Press, 1994).

76. James B. Crowley, *Japan's Quest for Autonomy: National Security and Foreign Policy, 1930-1938* (Princeton, N.J.: Princeton University Press, 1966), p. 46.

77. Asada Sadao, "Japanese Admirals and the Politics of Naval Limitations: Kato Tomosaburo vs. Kato Kanji," in Gerald Jordan, ed., *Naval Warfare in the Twentieth Century, 1900-1945* (London: Croom Helm, 1977), pp. 151-152; and Robert Gordon Kaufman, *Arms Control during the Pre-Nuclear Era: The United States and Naval Limitation between the Two World Wars* (New York: Columbia University Press, 1990), p. 61. For a related argument, see Crowley, *Japan's Quest for Autonomy*, p. 27.

78. Carl Boyd, "Japanese Military Effectiveness: The Interwar Period," in Allan R. Millett and Williamson Murray, eds., *Military Effectiveness, Vol. 2: The Interwar Period* (London: Allen and Unwin, 1988), pp. 142-148. In addition, the treaty did not limit cruisers, destroyers, or submarines, which Japan believed would increase its ability to wear down U.S. forces as they crossed the Pacific, thereby helping to make up for the undesirable battleship ratio. Pelz, *Race to Pearl Harbor*, p. 3.

79. An influential faction in the Japanese navy believed that the arrangement did not meet Japan's minimum security requirements. Kaufman, *Arms Control during the Pre-Nuclear Era*, pp. 59-60, 71; Asada Sadao, "The Japanese Navy and the United States," in Dorothy Borg and Shumpei Okamoto, eds., *Pearl Harbor as History: Japanese-American Relations, 1931-1941* (New York: Columbia University Press, 1973), pp. 226-228; and Asada, "Japanese Admirals and the Politics of Naval Limitations," pp. 149, 152.

80. Crowley, *Japan's Quest for Autonomy*, pp. 29-31; and Maurer, "Arms Control and the Washington Conference," p. 283.

The Japanese decision was further supported by the belief that the United States was not a greedy state bent on dominating East Asia, and that relations with the United States could be improved through military cooperation. Japan accepted the 6:10 ratio partly because Naval Minister Kato believed that improving U.S.-Japanese relations by stopping the naval competition deserved top priority: "Avoidance of war with America by diplomatic means is the essence of national defense."⁸¹ Although pursuing an arms control agreement would have been Japan's best option even if Japan believed that the United States was likely a greedy state, Japan's more benign view of the United States made arms control politically, as well as militarily, desirable.

U.S. NAVY IN THE EARLY 1920S

The United States faced a more complicated decision than Japan did, because it had the power required to gain an offensive naval capability. The naval limits agreed to at the Washington Conference reflected the U.S. decision not to acquire this capability. The U.S. Navy believed that the 10:6 ratio, combined with prohibitions on fortifying bases in the western Pacific, left it without forces adequate for winning on the offensive against Japan.⁸²

Because defense had the advantage, parity in naval forces was more than sufficient to give the United States high confidence in its ability to protect its homeland. However, because the United States had interests in the western Pacific—including protecting the Philippines and its trading interests in China—it required an offensive capability to project naval power into this region. As noted above, in the 1920s U.S. power was sufficiently great to overcome the defense advantage and provide an offensive capability in a naval arms race with Japan.

The United States was quite uncertain about Japan's motives—worried that recent Japanese behavior reflected malign motives, but also hopeful that future Japanese behavior would be guided by peaceful motives.⁸³ As a result, a key factor leading to the U.S. decision to exercise extensive restraint was the desire

81. Asada Sadao, "From Washington to London: The Imperial Navy and the Politics of Naval Limitations, 1921–1930," in Goldstein and Maurer, *The Washington Conference, 1921–22*, p. 153; see also Asada, "Japanese Admirals and the Politics of Naval Limitations," pp. 146–147. For similar views held by the prime minister and foreign minister, see Dingman, *Power in the Pacific*, pp. 184, 202.

82. The U.S. Navy believed that a 2:1 advantage and fortified bases were necessary; it would have been satisfied with a somewhat less favorable ratio, because the U.S. fleet would have been more modern than Japan's. W.R. Braisted, *The United States Navy in the Pacific, 1909–1922* (Austin: University of Texas Press, 1971).

83. Thomas H. Buckley, *The United States and the Washington Conference, 1921–1922* (Knoxville: University of Tennessee Press, 1970), p. 127.

to avoid naval policies that would appear provocative to Japan.⁸⁴ Secretary of State Charles Evans Hughes, who led the U.S. delegation, favored a complete halt in current building plans because “it would serve as an ideal way to gain Far Eastern concessions because the American fleet would not threaten Japan.”⁸⁵

Although the limits agreed to at the Washington Conference prevented the United States from building offensive naval capabilities commensurate with its power, this cooperative policy was within the range of optimal policies, given the security dilemma views that underpinned U.S. decisions. In addition, the risks of cooperation were limited because defense advantage ensured that the security of the U.S. homeland was not in jeopardy and because the U.S. interests that required offense for protection were not vital ones. Although insufficient to preserve peace in the decades ahead, the naval limits did achieve their goal of improving U.S.-Japan relations.⁸⁶

JAPANESE NAVY IN THE 1930S

In the mid-1930s Japan rejected arms control in favor of a naval buildup. The Japanese navy decided that it required parity in naval forces and successfully demanded that Japan terminate the Washington and London naval treaties at the beginning of the upcoming Second London Naval Conference (1935–36).⁸⁷ In 1936 Japan launched a buildup that went well beyond the treaty limits; the United States was somewhat slow to respond, then launched a buildup in 1938, two years after the arms control agreements had collapsed; Japan decided on a comparable arms increase in 1939, and the United States substantially expanded its building plans twice in mid-1940. In mid-1941 the ratio of

84. Other factors included doubts in President Warren Harding’s administration about whether Congress would fund the U.S. naval buildup (which partly reflected these security dilemma views) and doubts among some that the United States would go to war to protect its interests in China. On the latter point, see Braisted, *The United States Navy, in the Pacific, 1909–1922*, p. 595.

85. Quoted in Buckley, *The United States and the Washington Conference, 1921–1922*, p. 54; and *ibid.*, p. 15 on President Harding’s expression of views that in broad terms are consistent with a security dilemma worldview. See also Kaufman, *Arms Control during the Pre-Nuclear Era*, pp. 30–31, 43–53, who stresses the importance of Hughes’s view of the negative impact of arms races; and Robert H. Ferrell, *American Diplomacy in the Great Depression: Hoover-Stimson Foreign Policy, 1929–1933* (London: Oxford University Press, 1957), pp. 28–29, more generally on the U.S. belief that arms races were potentially dangerous.

86. Warren I. Cohen, *Empire without Tears: America’s Foreign Relations, 1921–1933* (New York: Knopf, 1987), pp. 53–55; and Thomas H. Buckley, “The Icarus Factor,” in Goldstein and Maurer, *The Washington Conference, 1921–22*, pp. 144–145.

87. Pelz, *Race to Pearl Harbor*, pp. 27–28, 53–55, 62; and Crowley, *Japan’s Quest for Autonomy*, pp. 196–200.

Japanese to U.S. naval forces was 7:10, but a Japanese study projected it would fall to 3:10 in 1944.⁸⁸

Material variables had not altered significantly since the early 1920s. Although Japan's assessment of its naval requirements changed, there was little analytic basis for this shift; Japan's understanding of naval technology and strategy had not shifted dramatically.⁸⁹ Whereas an influential faction in the navy had earlier opposed the naval agreements because they denied Japan a 7:10 ratio, by 1933 Japan's navy minister, Osami Mineo, decided that still more favorable ratios were required and by 1934 that parity was required.⁹⁰ Power also had not changed significantly—U.S. potential continued to dwarf Japan's. In 1937, U.S. national income was \$68 billion compared with Japan's \$4 billion, the United States was spending only 1.5 percent of this on defense compared with 28 percent for Japan, and the United States produced almost ten times as much steel as did Japan.⁹¹

Consequently, although the Japanese navy might reasonably have preferred naval limitations that were more favorable than the United States would accept, its prospects were nevertheless better within the naval treaty limits than in an unconstrained naval competition.⁹² Even if Japan did require the higher ratio that the navy now claimed (with little foundation) was necessary, rejecting cooperation was still a bad idea. This was especially true because the United States was not building up to the treaty limits; by refusing to extend them, Japan increased the probability that the United States would compete at levels more commensurate with its power.

A possible counterargument is that Japan had solid grounds for believing that the United States would not react to its buildup. When Japan's prime minister, Hirota Koki, expressed concerns about the U.S. reaction, he was told that the United States lacked the resolve to respond—it was preoccupied with recession and it was becoming more isolationist.⁹³ Although these arguments turned out to be incorrect, Washington's restrained naval policy could have

88. Pelz, *Race to Pearl Harbor*, pp. 196–211, 224. In 1941 the naval forces deployed in the Pacific were essentially equal in size. *Ibid.*, p. 221.

89. On the emotional and ideological arguments that were used to support the requirement for parity, see Asada Sadao, "The Japanese Navy and the United States," pp. 234–235; and Pelz, *Race to Pearl Harbor*, p. 27. The changes in technology that were potentially important were largely overlooked and did not influence this change in requirements. Evans and Peattie, *Kaigun*, p. 212.

90. Pelz, *Race to Pearl Harbor*, p. 19, 45–46.

91. Evans and Peattie, *Kaigun*, p. 364, and more broadly, pp. 363–370.

92. Evans and Peattie conclude, "These treaties provided Japan with a security vis-à-vis the United States that the navy could not provide by its own efforts." *Ibid.*, p. 463.

93. Pelz, *Race to Pearl Harbor*, pp. 173–174; also p. 82.

supported the Japanese conclusion that the United States lacked resolve. These arguments, however, did not support launching an arms race: If the United States lacked interests that were sufficient to generate a U.S. reaction, then it also would not fight in Asia; therefore Japan would not need to risk an arms race to protect itself from a U.S. attack.

Another possible counterargument focuses on Japanese motives. By the 1930s Japan had become more determined to achieve control over the western Pacific.⁹⁴ An explanation for this shift is that Japan was becoming greedier, which should have made it willing to run greater risks to achieve its territorial objectives. However, even more expansionist motives are insufficient to explain Japan's policy as rational. Given its large power disadvantage, Japan's best bet was not a naval race that it had little hope of winning and that increased the probability of U.S. intervention in the Pacific.

The naval race did provide Japan with a temporary advantage in naval forces—partly because it had been designing ships that violated the agreements and partly because the United States was slow to respond—but within a couple of years the United States' naval reaction left no doubt that Japan's naval capabilities were going to decline rapidly. As a result, Japan faced a closing window of opportunity that created pressure to attack the United States before it faced overwhelming naval inferiority in the Pacific.⁹⁵

U.S. NAVY IN THE 1930S

Throughout the treaty period, the U.S. Navy was smaller than allowed by the naval arms control agreements. The United States moderately increased its naval building in 1934, which promised to bring it up to the treaty limits by 1942. As described, United States did not launch a naval buildup that approached its potential and requirements until 1940, and its slowness in responding fully to the Japanese naval challenge created a window of opportunity that influenced Japan's decision for war.

As already noted, in the mid-1930s material variables continued to provide the United States with the option of acquiring an offensive capability—its huge power advantage far exceeded the extent of defense advantage that favored Japan. What had changed since the early 1920s was the U.S. assessment of Japan's motives.⁹⁶ By the early 1930s, Japan's policies had convinced key U.S.

94. Crowley, *Japan's Quest for Autonomy*, pp. 191–200.

95. Pelz, *Race to Pearl Harbor*, chap. 12.; and Van Evera, *Causes of War*, pp. 89–94.

96. Dorothy Borg, *The United States and the Far Eastern Crisis of 1933–1938* (Cambridge, Mass.: Harvard University Press, 1964); and Pelz, *Race to Pearl Harbor*, chaps. 5, 6.

decisionmakers that Japan's goals for controlling East Asia were ambitious and not driven simply by Japan's desire for security. Both Japan's invasion of Manchuria in 1931 and its declaration in 1934 that it would oppose all Western aid to China ran counter to its Washington treaty obligations. Also fueling the revised assessment of Japan's motives was Tokyo's declaration at the end of 1934 that it would abandon the naval treaties.

As a result, the United States needed to manage its security dilemma differently. It had to place less weight on cooperative policies designed to reassure Japan, which guided U.S. policy at the Washington Conference, and more weight on competitive policies. More competitive policies would provide the military capabilities the United States required to protect its interests and, closely related, communicate its resolve. U.S. leaders understood the implications of their increasingly negative view of Japan's motives. Instead of wanting to avoid competition, now they hoped a naval arms race (combined with cooperation with Britain that would isolate Japan) would "bring the Japanese government to its senses."⁹⁷ Even Norman Davis, the lead U.S. arms control negotiator, who had a strong inclination to prefer cooperative policies, concluded by 1934 that refusing to pursue further negotiations and instead launching a naval buildup was the United States' best option.⁹⁸ President Franklin Roosevelt pursued negotiations at the Second London Conference largely with the goal of ensuring that Japan was blamed for its collapse and gaining support for a naval buildup.⁹⁹

The United States, however, did not launch the naval buildup that Roosevelt's advisers increasingly favored. Given the continuing influence of isolationists in the Congress and the restraining impact of the recession, Roosevelt faced significant barriers to launching a major naval buildup. Because the United States waited until 1940 to launch a buildup that came closer to its potential, the years leading up to World War II saw a growing mismatch develop between U.S. naval capabilities and its political commitments.¹⁰⁰ Whereas restraint and cooperation were well matched to the international conditions the United States faced in the early 1920s, negative shifts in U.S. assessments of Ja-

97. Secretary of State Henry Hull, quoted in *ibid.*, p. 142; see also p. 85.

98. *Ibid.*, pp. 83–85, 140, 142; and Meredith W. Berg, "Protecting National Interests by Treaty: The Second London Naval Conference, 1934–36," in B.J.C. McKercher, ed., *Arms Limitation and Disarmament* (Westport, Conn.: Praeger, 1992), pp. 214–215.

99. Pelz, *Race to Pearl Harbor*, pp. 126–129; for a somewhat different emphasis, see Kaufman, *Arms Control during the Pre-Nuclear Era*, pp. 176–177.

100. The United States did recognize that it could win a long war and developed plans for this possibility. Pelz, *Race to Pearl Harbor*, p. 76, 199. Nevertheless, basic requirements for the core U.S. war plan went unmet.

pan's motives called for a more competitive policy by the mid-1930s. The United States, however, failed to fully meet this challenge.¹⁰¹

U.S. COLD WAR NUCLEAR BUILDUPS

The deployment of large sophisticated nuclear arsenals by the United States and the Soviet Union was a defining element of the Cold War. During this period the United States faced a number of major decisions and pursued a mix of competitive and cooperative policies, with the mix heavily weighted toward competition.¹⁰² This section briefly assesses the U.S. buildup of a robust assured destruction capability and two of the key decisions that followed—the deployment of multiple independently targeted reentry vehicles (MIRVs) and the banning of large-scale antiballistic missile (ABM) systems.

BUILDING TO A ROBUST ASSURED DESTRUCTION CAPABILITY. By the early 1960s, the United States was in the process of deploying a survivable nuclear force that, although not initially designed as a strategically coherent package, promised to provide a diversified, redundant assured destruction capability.¹⁰³ Recognition of the limited value of still larger forces created a willingness to unilaterally limit the size of the U.S. buildup.¹⁰⁴ Although lagging behind the United States, the Soviet Union deployed comparable nuclear capabilities. The competition that led to a world of mutual assured destruction (MAD) capabilities generated a variety of dangers—the United States worried about becoming vulnerable to massive Soviet attack, about threats to its retaliatory capability, and about the implications of MAD for extended deterrence.¹⁰⁵ Nevertheless, U.S. policy was within the range of optimal options.

101. *Ibid.*; and more sharply, Kaufman, *Arms Control during the Pre-Nuclear Era*.

102. Albert Wohlstetter questioned whether there was a nuclear arms race. See Wohlstetter, "Is There a Strategic Arms Race?" *Foreign Policy*, No. 15 (Summer 1974), pp. 3–20; Wohlstetter, "Rivals, But No 'Race'," *Foreign Policy*, No. 16 (Fall 1974), pp. 48–81, and responses in the same issue; and Michael Nacht, "The Delicate Balance of Error," *Foreign Policy*, No. 19 (Summer 1975), pp. 163–177.

103. Overviews of U.S. forces and planning include William Burr, "Essay: U.S. Strategic Nuclear Policy, 1955–1968: An Overview," in Burr, ed., *U.S. Nuclear History: Nuclear Arms and Politics in the Missile Age, 1955–1968* (Washington, D.C.: National Security Archive, 1997); and Jerome Kahan, *Security in the Nuclear Age* (Washington, D.C.: Brookings, 1975).

104. Richard L. Kugler, "The Politics of Restraint: Robert McNamara and the Strategic Nuclear Forces, 1963–1968," Ph.D. dissertation, Massachusetts Institute of Technology, 1975, especially chaps. 2, 3; and Desmond Ball, *Politics and Force Levels: The Strategic Missile Program of the Kennedy Administration* (Berkeley: University of California Press, 1980). Some members of the White House staff believed that the force should be much smaller than planned. Ball, *Politics and Force Levels*, pp. 84–87. It is important to note, however, that at the time these decisions were made, the United States enjoyed a large lead in missiles and, at least rhetorically, the need for superiority was widely accepted. *Ibid.*, pp. 179–211.

105. Lawrence Freedman, *The Evolution of Nuclear Strategy* (London: Macmillan, 1989).

Nuclear weapons created a revolution for defense advantage. In the nuclear context, deterrence by retaliation is the functional equivalent of defense. During the Cold War, both the United States and the Soviet Union could build nuclear forces capable of inflicting massive retaliatory damage for substantially less than the cost of the forces required to undermine these capabilities. Therefore, assuming that the ability to retaliate (in limited as well as massive ways) provides an effective deterrent, nuclear weapons resulted in a large advantage for defense.¹⁰⁶ The United States enjoyed a power advantage during the first couple of decades of the Cold War, but this advantage was insufficiently large to offset the defense advantage.¹⁰⁷ Consequently, a nuclear arms race would not enable the United States to prevent the Soviet Union from achieving a massive retaliatory capability of its own.

The United States therefore had to choose between two broad force posture options:¹⁰⁸ building a nuclear force that would provide robust retaliatory capabilities, with the understanding that the Soviet Union would do the same, and negotiating an arms control agreement that would ban nuclear weapons. Because nuclear weapons had a large impact on the offense-defense balance, the transition to MAD could be dangerous—plagued by windows and transition problems—but once reached, MAD would provide substantial deterrent stability. Given the clear advantage of defense, the nuclear arms race should peter out once the superpowers deployed robust assured destruction capabilities, which could provide additional security.

In contrast, banning nuclear weapons held the attraction of preserving U.S. invulnerability, but the dangers if the Soviet Union cheated on a disarmament agreement were very large, because cheating would provide the Soviet Union with a nuclear monopoly. Consequently, a necessary condition for disarmament to be desirable was very high confidence that the Soviet Union was not a greedy state and similar confidence that Soviet concerns about U.S. motives

106. This is a controversial assumption. See Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithaca, N.Y.: Cornell University Press, 1984). On how different views of nuclear deterrence influence the offense-defense balance, see Glaser, *Analyzing Strategic Nuclear Policy*, pp. 94–99.

107. For example, in 1950 U.S. gross domestic product was almost three times the Soviet Union's, and in 1973 it was more than two times as large; in addition, the U.S. advantage was somewhat larger in per capita GDP. Angus Maddison, *The World Economy: A Millennial Perspective* (Paris: Organization for Economic Cooperation and Development, 2001), pp. 261, 264.

108. The other key option was preventive war. See George H. Quester, *Nuclear Monopoly* (New Brunswick, N.J.: Transaction, 2000); and Marc Trachtenberg, "A 'Wasting Asset': American Strategy and the Shifting Nuclear Balance, 1949–1954," *International Security*, Vol. 13, No. 3 (Winter 1988/89), pp. 5–49. Another possibility was a cooperative transition to MAD; however, this faced many of the political and technical barriers that prevented disarmament, albeit to a lesser degree.

would not generate Soviet incentives to gain nuclear advantages.¹⁰⁹ The United States' information about the Soviet Union was not nearly this positive.¹¹⁰ As a result, in nuclear disarmament negotiations at the beginning of the nuclear era, Washington insisted on highly intrusive inspections and a number of other demanding terms, which Moscow found unacceptable.¹¹¹ Whether the United States hoped the Soviets would accept these terms or intentionally designed its proposal to ensure Soviet rejection remains open to debate.¹¹² Given the clear military and political significance of nuclear weapons, however, there is a powerful case that the Soviet Union would not have accepted any realistic disarmament agreement.¹¹³

Although the U.S. nuclear buildup that followed was within the range of optimal policies, it is important to note that U.S. nuclear strategy was not fully consistent with the basic offense-defense and power arguments. The United States continued to place substantial importance on being able to destroy Soviet forces to reduce the damage of a Soviet attack. This partly reflected the possibility of some damage limitation during the period before the Soviet Union acquired a robust assured destruction capability. Counterforce targeting for damage limitation continued to play an important role in U.S. nuclear doctrine, however, even after the growth of Soviet forces made significant damage limitation essentially infeasible by the mid-1960s.¹¹⁴ In spite of this, the types of forces the United States deployed did not heavily reflect its choice of strategy, because the delivery systems then available for retaliation and counterforce were quite similar; offense and defense were largely indistinguishable.¹¹⁵ The continuing U.S. interest in counterforce targeting was however the seed of future trouble.

U.S. MIRVs. In the late 1960s and 1970, the United States had the opportunity to try to ban the further development and the deployment of MIRVs in the Strategic Arms Limitation Talks (SALT) with the Soviet Union.¹¹⁶ Highly accu-

109. Glaser, *Analyzing Strategic Nuclear Policy*, chap. 5.

110. McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years* (New York: Random House, 1988), pp. 168–169, 175–176.

111. Bernhard G. Bechhoefer, *Postwar Negotiations for Arms Control* (Washington, D.C.: Brookings, 1961), pp. 27–82.

112. Quester, *Nuclear Monopoly*, pp. 140–144.

113. Bundy, *Danger and Survival*, pp. 192–196.

114. See Desmond Ball, "Development of the SIOP, 1960–1983," in Ball and Jeffrey Richelson, eds., *Strategic Nuclear Targeting* (Ithaca, N.Y.: Cornell University Press, 1986); and Freedman, *The Evolution of Nuclear Strategy*.

115. This characterization does, however, underplay the importance of survivability for retaliation.

116. On SALT, see John Newhouse, *Cold Dawn: The Story of SALT* (New York: Holt, Rinehart and Winston, 1973); Gerard Smith, *Double Talk: The Story of SALT I* (Garden City, N.Y.: Doubleday, 1980);

rate MIRVs were going to increase each country's ability to destroy the other's land-based intercontinental ballistic missiles (ICBMs). However, the United States (as well as the Soviet Union) failed to pursue seriously a ban on MIRVs. The vulnerability of U.S. ICBMs increased significantly and became the most influential symbol of American insecurity during the last decade and a half of the Cold War.¹¹⁷ U.S.-Soviet relations were strained as both countries interpreted the other's counterforce programs as a reflection of malign motives.

By reducing the difficulty of destroying the adversary's retaliatory capability, highly accurate MIRVs would shift the offense-defense balance toward offense. The overall balance would continue to favor defense, however, because the superpowers deployed delivery systems that were not threatened by MIRV and because even a small number of surviving nuclear weapons could threaten enormous damage. Nevertheless, MIRVs would make preserving diversified retaliatory capabilities more difficult. Because MIRVs were more valuable for offensive (damage-limitation) missions than defensive (retaliatory) ones, offense and defense were distinguishable, which created the opportunity for qualitative arms control.

The United States still enjoyed a power advantage, but MIRV was not going to shift the offense-defense balance enough to make an offensive (damage-limitation) capability feasible. By the mid-1960s, the continuing Soviet buildup was leading increasingly to the conclusion within the Pentagon, at least among civilians, that significant damage limitation was going to be infeasible, primarily because the Soviet Union could react efficiently to offset U.S. efforts.¹¹⁸

Under these conditions, the United States should have pursued an arms control agreement that banned MIRVs. Banning MIRVs would have enabled the United States to retain greater confidence in the adequacy of its nuclear retaliatory forces (or, alternatively, to have invested significantly less to preserve its confidence) and to signal its benign motives to the Soviet Union. Because MIRVs could not provide the United States with a significant damage-limitation capability, it would have given up little in return for these benefits.

Two sets of considerations, however, made the U.S. MIRV decision more complicated than suggested by these basic offense-defense arguments. First,

Mason Willrich and John B. Rhinelander, eds., *SALT: The Moscow Agreements and Beyond* (New York: Free Press, 1974); and Raymond L. Garthoff, *Détente and Cooperation: American-Soviet Relations from Nixon to Reagan* (Washington, D.C.: Brookings, 1985), chap. 5.

117. The danger, however, was exaggerated. See Albert Carnesale and Charles L. Glaser, "ICBM Vulnerability: The Cures Are Worse Than the Disease," *International Security*, Vol. 7, No. 1 (Summer 1982), pp. 70-85.

118. Kugler, "The Politics of Restraint," pp. 94-108.

there were a variety of others missions for MIRVs, which at least in theory created the possibility that they could favor defense, not offense. An influential argument was that MIRVs were necessary to preserve U.S. retaliatory capabilities by ensuring that U.S. warheads would penetrate Soviet ABM systems.¹¹⁹ This argument suggests that the United States should have pursued a MIRV ban in combination with a ban on ABMs, especially once negotiated limits on ABMs appeared likely. The United States, however, failed to do this.¹²⁰ Other potential missions for MIRVs reflected U.S. strategic doctrine, which continued to require counterforce to extend deterrence to U.S. allies, to deter limited nuclear attacks against the U.S. homeland, and to control escalation if nuclear war occurred.¹²¹ Disagreements over whether the United States required counterforce for these purposes formed the core of the Cold War debate over U.S. nuclear policy and are too extensive to explore here. In the end, the case against counterforce in MAD is powerful.¹²² Moreover, even if the United States required limited counterforce options, its ability to perform these missions was not going to be enhanced if both countries added MIRVs to their arsenals.

Second, there was the possibility that a MIRV ban could not be verified with high confidence. Although the United States would have been better off if both states did not deploy MIRVs, if the probability of Soviet cheating was high, then an arms control agreement might not increase U.S. security. This was a salient concern because the United States believed that the Soviet Union might well have had malign motives.¹²³ Deployment of MIRVs could not be monitored by national technical means. Consequently, proponents of banning MIRVs argued for an arms control agreement that banned testing.¹²⁴ The U.S.

119. Ted Greenwood, *Making the MIRV: A Study of Defense Decision Making* (Cambridge, Mass.: Ballinger, 1975), pp. 40, 44, 76–77.

120. A related argument—that MIRV was required to hedge against Soviet upgrading of its Tallinn air defense—was not directly affected by the 1972 ABM treaty. Lawrence Freedman, *U.S. Intelligence and the Soviet Threat* (Princeton, N.J.: Princeton University Press, 1986), pp. 90–96; Greenwood, *Making the MIRV*, pp. 116, 124, 173–176; and Newhouse, *Cold Dawn*, pp. 11–12, 72–73, 122.

121. On these missions, as well as damage limitation, see Greenwood, *Making the MIRV*; Kugler, “The Politics of Restraint,” especially chap. 4; and Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961–1969* (New York: Harper and Row, 1971), pp. 181–183.

122. Jervis, *The Illogic of American Nuclear Strategy*; and Glaser, *Analyzing Strategic Nuclear Policy*, chap. 7.

123. Douglas Seay, “What Are the Soviet’s Objectives in Their Foreign, Military, and Arms Control Policies?” in Lynn Eden and Steven E. Miller, *Nuclear Arguments: Understanding the Strategic Nuclear Arms and Arms Control Debates* (Ithaca, N.Y.: Cornell University Press, 1989), pp. 47–108, analyzes the spectrum of influential beliefs.

124. Greenwood, *Making the MIRV*, pp. 111–112, 123–128; and Smith, *Double Talk*, pp. 158–165.

government was split on the feasibility of monitoring a flight test ban. Agencies that favored a ban argued the Soviet Union would not deploy MIRVs without extensive testing, while those opposed argued the Soviet Union might test using a variety of deceptive techniques.¹²⁵ The critical question was whether the Soviets could develop an accurate MIRV with these techniques, because inaccurate MIRVs would not pose a serious counterforce threat. Technical considerations, however, appear not to have played a key role in the U.S. decision. Instead, they were used to support broader preferences regarding MIRVs.¹²⁶ Therefore, although not entirely clear cut, it appears that a MIRV ban could have effectively constrained Soviet counterforce capabilities.¹²⁷ In short, even once the risks that opponents identified are considered, the U.S. decision not to pursue a MIRV ban was suboptimal.

U.S. ABMS. During the 1960s and early 1970s, the United States also faced a major decision about whether to negotiate limits on antiballistic missile systems.¹²⁸ Proponents believed that ABMs could enhance the U.S. nuclear deterrence and reduce the costs if war occurred. Opponents worried that deploying ABMs would generate a costly arms race that would fail to reduce U.S. societal vulnerability to a Soviet nuclear attack, while damaging U.S.-Soviet relations and increasing the economic costs of U.S. strategic forces. The United States decided to pursue limits on ABMs and succeeded in negotiating the 1972 Antiballistic Missile Treaty with the Soviet Union.

In the context of U.S.-Soviet nuclear competition, ABMs intended to protect cities and concentrations of economic infrastructure were a type of offense because they threatened the retaliatory capabilities that the opposing state required for deterrence. Offense and defense were therefore distinguishable. As

125. On the controversy, see Smith, *Double Talk*, pp. 161, 173; and Alton Frye, *A Responsible Congress: The Politics of National Security* (New York: McGraw-Hill, 1975), pp. 61–62.

126. Garthoff, *Détente and Cooperation*, p. 138, focuses on divergent positions on the value of on-site inspection for verifying a MIRV ban, but the point appears to be more general. See Smith, *Double Talk*, p. 173. For a somewhat different interpretation, see Steve Weber, *Cooperation and Discord in U.S.-Soviet Arms Control* (Princeton, N.J.: Princeton University Press, 1991), pp. 193–199.

127. This conclusion is supported by the fact that opponents took flawed or exaggerated positions on a number of key issues, including the costs of delaying MIRV testing, whether the Soviets had tested a MIRV or only a maneuverable reentry vehicle, and the value of on-site inspection. See Greenwood, *Making the MIRV*, pp. 125; Smith, *Double Talk*, p. 159; Freedman, *U.S. Intelligence and the Soviet Threat*, pp. 137–144; and Garthoff, *Détente and Cooperation*, pp. 138–139.

128. Histories include Ernest J. Yanarella, *The Missile Defense Controversy: Strategy, Technology, and Politics, 1955–1972* (Lexington: University of Kentucky Press, 1977); Edward Randolph Jayne, “The ABM Debate: Strategic Defense and National Security,” Ph.D. dissertation, Massachusetts Institute of Technology, 1969; and David N. Schwartz, “Past and Present: The Historical Legacy,” pp. 339–342, in Ashton B. Carter and Schwartz, eds., *Ballistic Missile Defense* (Washington, D.C.: Brookings, 1984).

with MIRVs (although probably to a lesser extent), ABMs would have made it more difficult for an opposing state to preserve its retaliatory capabilities, in effect shifting the balance of deployed forces toward offense. However, the offense-defense balance would continue to favor defense: Studies of the cost-exchange ratio showed that the Soviet forces required to defeat U.S. ABMs would cost significantly less than the ABMs themselves.¹²⁹

Under these conditions, the United States' best option was to pursue limits on ABMs. Given the continuing advantage of defense (retaliation), the Soviet Union would have been able to defeat the U.S. ABM system with a combination of increases in the size of its retaliatory forces and the addition of countermeasures to its existing missile force. Because retaliatory capabilities were essential for deterrence, the Soviet Union would have had large incentives to respond. As a result, as opponents argued, superpower deployment of ABM systems would have fueled an action-reaction process that would have left the United States essentially as vulnerable as before the competition.¹³⁰ This competition, however, would have signaled malign motives because, in a world of defense advantage and offense-defense distinguishability, security seekers would be more willing than greedy states to forgo ABMs. As a result, deploying ABMs would have strained superpower relations and wasted resources, while not reducing U.S. vulnerability.

The theory suggests a number of possible counterpoints that supported a different conclusion, but none are powerful in this case. The decision to limit ABMs could have been suboptimal if the basic action-reaction argument was flawed.¹³¹ In fact, ABM proponents challenged its logic, questioning whether the Soviets measured their forces in terms of assured destruction capabilities and therefore whether they would respond to the U.S. ABM system. However, proponents had a difficult time making a convincing case. They argued that

129. Jayne, "The ABM Debate," pp. 231–233, 267–268; but see David Goldfischer, *The Best Defense: Policy Alternatives for U.S. Nuclear Security from the 1950s to the 1980s* (Ithaca, N.Y.: Cornell University Press, 1993), pp. 168–171.

130. This competition might have been more intense than suggested simply by the offense-defense balance, because both countries were inclined to base their strategic programs on worst-case assessments of the adversary's military programs. Robert S. McNamara, "The Dynamics of Nuclear Strategy," Department of State bulletin, October 9, 1967; and Rathjens, "The Dynamics of the Arms Race."

131. A related challenge held that ABM could be combined with limits on offensive forces, thereby reducing the importance of cost-exchange ratios. Donald G. Brennan, "Post-Deployment Policy Issues in BMD, in *Ballistic Missile Defense: Two Views*, Adelphi Paper No. 43 (London: International Institute for Strategic Studies, 1967); more recently, see Goldfischer, *The Best Defense*. For critiques of this argument see Glaser, *Analyzing Strategic Nuclear Policy*, pp. 177–180, 297–301.

ABMs would contribute to the preservation of U.S. nuclear superiority, but this contradicted their claim that the Soviets would lack incentives to react. Even if the Soviets were unconcerned with their ability to inflict retaliatory damage, which seemed unlikely, ABMs would also have threatened their ability to perform other nuclear missions. Another possibility is that the Soviet Union would not react because it lacked the resources, which might have significantly increased the value of the United States' ABMs.¹³² However, although the Soviet economy was weaker than the U.S. economy, there were strong reasons for believing that a Soviet response was feasible: The U.S. power advantage was smaller than the extent of defense advantage; the Soviet Union was already in the midst of significantly enlarging its intercontinental missile force; and many of the reactions that could contribute to offsetting the United States' ABMs were relatively inexpensive. Negotiating severe limits on ABMs was therefore the United States' best option.

Figure 3 summarizes the assessments of arming decisions presented in this section.

Conclusions and Policy Implications

The preceding section shows that a number of key major-power arms races were suboptimal—states chose to build up arms when this was not their best policy option. The results included unnecessarily strained political relations, decreased security, and an increased probability of war. Unlike the large literature on the consequences of arms races, this finding is not based on a correlation between arms races and war, but instead on a comparison of the arming options that were available to the states. The comparison was guided by the strategic choice theory presented in this article.

This finding does not imply that in general states should avoid arms races. Under some conditions, arming (and, if necessary, competing militarily) will be a state's best option. Arms races are not always bad. As a result, failing to build up arms can sometimes reduce a state's security. Nevertheless, in many of the major-power arms races of the past century, states have erred in the opposite direction.

On the theoretical front, this finding suggests the need for research that explains why states have made these significant military errors. A number of

132. Proponents made this point as well. Jayne, "The ABM Debate," pp. 329, 332, 357.

Figure 3. Assessment of State's Arming Decisions.

		State should have armed/raced	
		Yes	No
State did arm/race	Yes	German army, 1912–14* U.S. nuclear buildup to assured destruction	German navy, 1898–1912/14 Japanese navy, 1934/36 U.S. MIRVs
	No	U.S. Navy, 1930s	Japanese navy, 1922 U.S. Navy, 1922 U.S. ABMs

*Assumes that Germany required an offensive doctrine; otherwise shifts to “should not have armed/raced.”

candidates exist in the broader literature on suboptimal decisionmaking—including the bias of military organizations, the cognitive limits of decision-makers, and the domestic structure of states.¹³³ A theory of suboptimal arming could have important policy implications, providing states with guidance on how to avoid choosing overly competitive military policies.

On the more immediate policy front, my finding that major powers have frequently adopted overly competitive policies should serve as a cautionary note to the United States. Although the United States has a defense budget that is comparable to the rest of the world combined, it is not currently involved in a major-power arms race. The U.S. National Security Strategy of 2002, however, prescribes maintaining “defenses beyond challenge” to “dissuade potential adversaries from pursuing a military build-up in hopes of surpassing, or equaling, the power of the United States.” Presumably, if military dominance fails to prevent such a challenge, this strategy calls for building up arms to defeat it. The basis for this policy, however, is not well developed; the National Security Strategy notes only that deterrence can fail and that some enemies cannot be deterred.¹³⁴

133. See, for example, Posen, *The Sources of Military Doctrine*; Deborah Welch Larson, *Anatomy of Mistrust: U.S.-Soviet Relations during the Cold War* (Ithaca, N.Y.: Cornell University Press, 1997); Snyder, *Myths of Empire*; and Stephen Van Evera, “Why States Believe Foolish Ideas: Non-Self-Evaluation by Government and Society,” paper presented at the annual meeting of the American Political Science Association, Washington, D.C., September 1988.

134. Bush, *The National Security Strategy of the United States of America*, pp. 29–30.

A fuller analysis is required to identify the conditions under which military superiority is the United States' best option. First, which potential challengers would be dissuaded by U.S. efforts to maintain superiority and which would be provoked into launching more intense arms buildups? Under most conditions, a rising power is likely to attempt to protect its interests by building forces to defend against the United States. The exception would be a state that was virtually certain the United States was not a threat to its interests. But this is a rare combination—the United States finds the state so threatening that deterrence requires overwhelming superiority, while the state is confident that the United States has benign motives and intentions. Second, if U.S. superiority would be likely to generate competition, when would competitive arming policies nevertheless be the United States' best option? As I have shown, the answer depends on a variety of factors, including the nature of military technology and the United States' assessment of its adversary's motives. Under certain military conditions, maintaining equal forces would provide the United States with military capabilities sufficient to protect its interests; under others, it would not be. Similarly, under certain information conditions, cooperative policies are more capable than competitive ones of reducing both military and political risks. Consequently, the United States needs to reevaluate its blanket commitment to preserving unending military superiority.

Although a major power challenger is at least a couple of decades away, the United States should not wait to revise the unconditional, potentially provocative nature of its national security strategy.¹³⁵ Insisting on the preservation of U.S. military dominance could itself signal malign motives, making a potential future challenger more fearful of the United States, thereby increasing the likelihood that it will challenge the United States once it has the necessary power. Although preserving superiority is not an issue today, the potential for trouble is already evident in policies that suggest that the United States can essentially ignore others' security concerns. China's anxiety about U.S. withdrawal from the ABM treaty and deployment of national missile defense provides a useful illustration.¹³⁶ Moreover, there is some danger in allowing the belief that U.S. security requires maintenance of overwhelming military superiority to become the prevailing conventional wisdom. If a potential challenger does arise, the United States is more likely to choose the wrong policies if it has become at-

135. For a recent assessment of China's future military capabilities, see Harold Brown, chair of Task Force, *Chinese Military Power: Report of an Independent Task Force* (New York: Council on Foreign Relations, May 2003), http://www.cfr.org/pdf/China_TF.pdf.

136. Joanne Tompkins, "How U.S. Strategic Policy Is Changing China's Nuclear Plans," *Arms Control Today*, Vol. 33, No. 1 (January/February 2003), pp. 11–15.

tached to a misguided military requirement.¹³⁷ Establishing a more nuanced assessment of U.S. military requirements will increase the prospects for avoiding a self-defeating arms race in future decades.

137. For example, Secretary of Defense Robert McNamara believed that, in MAD, strategic superiority was not valuable; however, he used the concept when it supported his policy preferences. When he later explicitly rejected its significance, his earlier use of the concept reduced his effectiveness. Kugler, "The Politics of Restraint," pp. 177–78, 202. On the more general phenomenon of "blowback," see Snyder, *Myths of Empire*, pp. 41–42.