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Steve Fetter & Charles Glaser

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Legal, but Lethal: The Law of Armed Conflict and US Nuclear Strategy

Starting around a decade or so ago, the law of armed conflict (LOAC) acquired new prominence in the development of US nuclear strategy. This was stimulated in part by a series of major intergovernmental conferences on the humanitarian impact of nuclear weapons, which led to a consensus among a group of nations that the use of nuclear weapons would result in catastrophic and unacceptable human suffering and was therefore incompatible with the LOAC.¹ This argument has been a key rationale for efforts to prohibit nuclear weapons, including the 2017 Treaty on the Prohibition of Nuclear Weapons (TPNW), which as of early 2022 had 86 signatories and 59 states parties.

The United States has stated that it does not target “civilian population[s] per se” but this had not translated into dedicated efforts to avoid targeting civilians.² In response to growing international support for the TPNW and other efforts to stigmatize and delegitimize nuclear weapons, combined with the United States’ desire to comply with international law, the United States began to require that its plans for the use of nuclear weapons are fully compliant with the LOAC. The LOAC requires that plans and decisions for the use of military force are guided by the principles of necessity, distinction, proportionality, and precaution.³ At the risk of some oversimplification, the LOAC prohibits attacks against innocent civilians and civilian targets, while permitting certain counterforce attacks (attacks against nuclear forces and command and control, and possibly conventional forces).

Steve Fetter is a professor in the School of Public Policy at the University of Maryland. He can be reached at sfetter@umd.edu. Charles Glaser is professor of political science and international affairs and director of the Institute for Security and Conflict Studies at the Elliott School of International Affairs. He can be reached at cglaser@gwu.edu.

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A 2013 review of US nuclear requirements states that “the new guidance makes clear that all plans must also be consistent with the fundamental principles of the Law of Armed Conflict ... plans will, for example, apply the principles of distinction and proportionality and seek to minimize collateral damage to civilian populations and civilian objects [and the] United States will not intentionally target civilian populations or civilian objects.”⁴ The 2018 Nuclear Posture Review completed during the Trump administration retains this position, explaining that “[if] deterrence fails, the initiation and conduct of nuclear operations would adhere to the law of armed conflict.”⁵ In a recent article, Stanford’s Scott Sagan and Allen Weiner argue, however, that certain elements of the posture review are inconsistent with the LOAC.⁶

The LOAC is seen as providing a range of advantages. Some analysts hold that it should be included among the criteria for judging US nuclear forces and that this would support reducing the size of nuclear arsenals.⁷ Robert Kehler, former commander of the United States Strategic Command, argues that US nuclear plans that failed to comply with international law could reduce adversaries’ assessments of the credibility of US threats, undermine public support for maintaining the US nuclear deterrent, and result in allies refusing to participate in certain military campaigns. In addition, he emphasizes that “lack of moral and

legal clarity at the tip of the spear can, at best, create confusion and, at worst, cause hesitation or inaction at critical moments.”⁸

Although abiding by the LOAC might appear to be a clearly good idea—better to be legal than illegal—we should not assume that it provides good guidance for US nuclear strategy and, in turn, US national security policy. Instead, we need to consider the implications of the LOAC for the prob-

The LOAC provides dangerous guidance across multiple dimensions of nuclear strategy

ability of a nuclear war and the damage that would result if war occurs. In particular, we need to consider the impact on deterrence and crisis stability, and on incentives for escalation and arms racing. Our analysis finds that the LOAC provides dangerous guidance across multiple dimensions of nuclear strategy.

First, depending on one’s understanding of the LOAC, the required strategy would leave the United States with an inadequate deterrent when facing certain types of adversaries. Second, and more importantly, the counterforce strategies that are legal under the LOAC would in practice (if not necessarily in theory) help to preserve and reinforce the long-standing US emphasis on counterforce targeting, including supporting improvements in its large and sophisticated counterforce arsenal. US nuclear doctrine includes a spectrum of counterforce options—ranging from limited attacks intended to deter conventional

war and nuclear escalation to full-scale attacks against nuclear forces, command and control, and leadership that are designed to reduce the damage the adversary can inflict against the United States and its allies.

The problem is that a counterforce doctrine is not the United States' best option for dealing with opposing states that have deployed large capable arsenals, which make significant damage-limitation essentially infeasible. Under these conditions, a doctrine that targets civilians and the infrastructure that is necessary for their survival ("countervalue attacks" in the terminology of nuclear strategy)⁹ avoids a variety of dangers, including: incentives to launch a massive counterforce attack during a severe crisis or conventional war, which undermines crisis stability; and intensified arms competition with the United States' major-power nuclear competitors, Russia and China, which unnecessarily strains political relations and increases the probability of conflict. In addition, a countervalue strategy that includes a spectrum of options, ranging from small attacks against isolated infrastructure targets to large attacks against civilians, is the deterrent strategy that flows logically from the defining feature of nuclear weapons—their ability to inflict enormous damage. The increasing acceptance and legitimacy of the LOAC within the US government works to preserve the US counterforce strategy by adding another influential argument opposing the coercive countervalue logic of nuclear weapons.

Before jumping into this analysis, we raise a couple of reasons for skepticism about applying the LOAC to nuclear strategy. The LOAC is not designed to deal with the core challenge posed by nuclear weapons—how to avoid nuclear war. The LOAC was developed over centuries of armed conflict and was formalized in the 1864 Geneva Convention as well as the 1899 and 1907 Hague Conventions. It governs the conduct of forces when engaged in armed conflict (*jus in bello*), but neither the decision to go war (*jus ad bellum*), nor the preparation for deterring or fighting a war. The purpose of the LOAC is to not to deter or prevent war, but rather to moderate the conduct of armed conflict and to mitigate the suffering it causes.¹⁰ The premise is that war will occur, but that the horrors of war can be limited through applying certain legal and ethical principles.

This would appear to make the LOAC less relevant to nuclear strategy, for which the primary goal is to *prevent* nuclear war in the first place. The horrors of nuclear war can be limited primarily by deterring the use of nuclear weapons in the first place—and, if deterrence fails, by limiting escalation to large-scale attacks. We should not simply assume that legal and ethical principles that were developed to moderate the conduct of conventional conflicts would be

The LOAC is not designed to deal with the core challenge: how to avoid war

optimal or even suitable for deterring nuclear war and limiting escalation. Additional skepticism is due because the logic of nuclear strategy differs dramatically from the logic of conventional strategy.¹¹

The LOAC does not provide an analysis of nuclear strategy, but rather imposes constraints on it. It prohibits the targeting of civilians and civilian infrastructure but tells us little about what threats and capabilities are most likely to achieve US political, strategic, and military objectives. What if the LOAC bans the strategy that is best matched to achieving these objectives? We believe this is the case and do not believe that the value of complying with the LOAC for its own sake warrants adopting a strategically inferior strategy.

The Deterrence Problem

A closer look at the LOAC exposes specific shortcomings with this set of arguments. Most glaringly, the LOAC could leave the United States without adequate retaliatory options. Sagan and Weiner provide a clear and nuanced discussion of the implication of the law of armed conflict for US nuclear strategy. Among their key bottom-lines are that US acceptance of the LOAC prohibit “deliberate targeting of civilians (with the exception of civilians directly involved in military operations) or civilian objects.” They explain that although past US interpretations did allow for belligerent reprisal—US attacks against civilians if the adversary had violated the LOAC by attacking US civilians, if the response is proportional, and the response had the purpose of deterring future attacks—they reject these arguments.¹²

If the United States faces an adversary that follows the LOAC, the nuclear strategy allowed by the LOAC might be adequate for deterrence. The LOAC allows for responsive nuclear strikes designed to deter additional nuclear attacks, if the strikes satisfy the principle of proportionality—which requires balancing military advantage against civilian harm—and the principle of caution—which requires considering whether the military advantages could be achieved by a more limited response. An adversary abiding by the LOAC would attack US military forces and the United States would be allowed to respond with nuclear attacks against the adversary’s forces, if its response would inflict relatively small incidental civilian casualties and had reasonable prospects for deterring additional nuclear attacks, and if deterrence of additional attacks could not be achieved at lower cost to civilians.

Of course, the United States could not know whether the adversary would continue to abide by the LOAC, so counterforce retaliation would carry the risk of escalation to attacks against US civilians and civilian targets. To determine whether US counterforce retaliation fulfilled the requirements of the

LOAC, US decisionmakers would have to weigh the prospects that counterforce retaliation would deter further attacks, lead to additional counterforce attacks, or fuel countervalue attacks.

But what if the United States faces an adversary that is not constrained by the LOAC and attacks US “value” targets—cities, populations centers, industrial capabilities, and energy or other critical infrastructure and related nodes? The standard approach to deterring these types of attacks, which according to the LOAC is illegal, is to threaten the adversary’s value targets. The logic is that to deter extremely costly attacks on the United States, which the adversary might launch expecting to effectively coerce the United States to make large concessions or severely weaken it, the United States needs to threaten extremely costly retaliation. Threatening retaliation only against military forces might threaten inadequate costs, thereby weakening or undermining the US ability to deter attacks against its population and economic infrastructure. This appears to be a glaring shortcoming of an LOAC-compliant strategy.

What if the United States faces an adversary not constrained by the LOAC?

One counterargument is that adversaries could be deterred by counterforce attacks because many states, especially authoritarian ones, have leaders who do not care about the lives of their civilian populations, but care greatly about their military power and own survival. In this case, US attacks against military targets and the leaders themselves would impose extremely high costs.¹³ This argument gained currency during the Cold War, when the countervailing strategy made this assumption about Soviet leaders. According to that argument, the United States needed extensive counter-nuclear capabilities to deter the Soviet Union because the ability to destroy the Soviet society and economy was not a sufficient deterrent.¹⁴ This Cold War argument has always seemed weak to us—what good are the survival of military forces and leadership, if one’s country has suffered truly catastrophic damage? But if such a leader exists, they would be deterred by the threat of a counterforce attack and little deterrence would be lost by foregoing countervalue attacks. An LOAC-compliant strategy can be effective in such a case, or if the United States faces a leader that would be deterred by either a counterforce or countervalue attack, because little would be lost by threatening only counterforce retaliation.

But what if the United States confronts a state and leader that would not be deterred by the destruction of its military forces? This state could then launch or threaten to launch a limited attack against US population and infrastructure targets, possibly to compel the United States to make major concessions or to deter the United States from continuing to fight or escalate a conventional

war. The United States would lack an adequate deterrent threat or response, and the adversary would find itself free to continue making demands and imposing costs on US society.

One way out of this bind is to adopt a less restrictive understanding of the LOAC, which allows for belligerent reprisal, a position that some experts hold.¹⁵ In this case, the United States would

An LOAC-compliant strategy makes crises and nuclear conflict more likely

restrict itself to counterforce attacks when using nuclear weapons first and in response to counterforce attacks but retain the option of countervalue retaliation if its cities or other value targets were attacked.

Another less restrictive understanding is to consider certain industrial and infrastructure targets acceptable under the LOAC. Oil refineries, electrical grids, and communication networks are civilian objects, but are also essential for military operations. The destruction of such targets could be justified in the pursuit of military objectives, rather than punishment of civilian populations. Such attacks would inflict heavy civilian casualties (particularly indirect casualties from the collapse of civilian infrastructure) and it would be difficult to demonstrate that they met the requirements of distinction and proportionality, but military planners might argue that there are no better alternatives to deter additional nuclear attacks.

Another counterargument is that an adversary could not be confident that the United States would abide by the LOAC despite its public declarations, which would preserve some of the deterrent value of the US ability to retaliate against civilian and infrastructure targets.¹⁶ Similar logic has been used in the debate over no-first-use, with proponents holding that nuclear weapons would retain much of their ability to deter conventional war because the adversary would not trust the US commitment not to initiate the use of nuclear weapons.¹⁷ The logic is sound—the US capability to act contrary to its publicly stated commitment would almost certainly contribute to deterrence, ameliorating the problem we identified above. However, an adversary that was considering a nuclear attack and was willing to run large risks—which is a requirement for launching a nuclear attack against a major nuclear power—could “test” the United States while keeping the risks relatively low. For example, it could attack an isolated value target—possibly an oil refinery or a component of the US electrical grid—with the expectation that US retaliation, even if it were against countervalue targets, would be limited. If the United States abided by its stated LOAC commitment and responded only with a limited counterforce attack, the adversary could launch a larger but still limited attack against additional US value targets. Eventually, the US commitment to the prohibition

on belligerent reprisal would be revealed, as would the inadequacy of its deterrent.

Underlying this strategic shortcoming of the targets allowed by the LOAC is that they attempt to eliminate the defining feature of nuclear weapons: their ability to inflict tremendous economic and societal damage. If all states are willing to treat them essentially like conventional weapons, then their damage potential—and with it their ability to coerce, weaken and destroy states—can be largely pushed aside. However, if an adversary is unwilling to embrace this deep conventionalization, which we believe is likely, then the defining feature of nuclear weapons reemerges, and the US would find itself trying to deter a nuclear conflict without the ability to make its most severe threats, thus making that nuclear conflict and escalation more likely. US nuclear strategy needs to be prepared for this possibility.

The Counterforce Problem

More important than the deterrence problem is the counterforce problem. The targeting policies allowed by the LOAC lend support to dangerous US force structures and nuclear strategies. This counterforce/damage-limitation emphasis generates a variety of well-known dangers, especially when facing another major nuclear power, including reducing crisis stability—creating both real and exaggerated incentives to launch preemptive attacks—and fueling military competition and straining political relations.¹⁸ In other words, an LOAC-compliant US nuclear strategy would not just limit the US ability to deter nuclear conflict, but by allowing large-scale counterforce targeting, the LOAC allows a strategy that makes nuclear conflict more likely through accident, miscalculation, or pre-emption in a crisis, and makes crises themselves more likely by damaging US relations with its major-power adversaries.

The problem we see is that in practice the LOAC will (and already does) lend significant support to US pursuit of large, sophisticated counterforce/damage-limitation forces. US nuclear strategy has a long history of emphasizing large counterforce missions, including pursuit of a damage-limitation capability against the Soviet Union during the Cold War,¹⁹ and the United States has been unwilling to forswear the pursuit of a damage-limitation capability against China's growing nuclear force.²⁰ During the Cold War, the United States offered a variety of weak arguments to explain and justify the acquisition of large counterforce forces. These included deterring additional limited nuclear attacks, protecting one's own forces from additional attacks, ensuring that the adversary could not gain an advantage in a counterforce exchange, and threatening nuclear forces because the adversary places great value on them.²¹ Still more

worrisome, the United States pursued damage-limitation for decades even when its prospects were clearly poor.²² Even though many of these specific arguments have had reduced currency since the end of the Cold War, the US commitment to counterforce continues and much of this is driven by pursuit of damage-limitation capabilities. Especially given the development of technologies that increase the prospects for making mobile forces vulnerable,²³ it is likely that the United States will continue to pursue the ability to destroy all of China's forces, and possibly Russia's.

The LOAC support this outcome by presenting a simple and appealing conclusion that proponents of counterforce forces can employ in support of their preferred strategy: with countervalue targets prohibited, all that is left is counterforce; and if attacking opposing forces is all that is permitted, the United States should do this as effectively as possible. Doing anything less would leave the United States with a weakened and possibly ineffective deterrent. Consequently, although a nuanced understanding of the LOAC prohibits damage-limitation counterforce attacks against states with truly massive retaliatory capabilities, the United States is likely to ignore this constraint when policy and plans are being made. The result is that the LOAC lends support to a dangerous US nuclear strategy.

During the Obama administration, retention of substantial counterforce capabilities was justified partly by the requirement that all plans must be "consistent with the fundamental principles of the Law of Armed Conflict."²⁴ US nuclear planners embraced the LOAC as justification for the pursuit of counterforce and damage-limitation capabilities, especially because the LOAC is interpreted to impose a strict ban on countervalue retaliation. They rejected reductions to "minimum deterrent" force levels partly because the countervalue targeting that would be required for a small nuclear force to be an effective deterrent would be incompatible with the LOAC. The LOAC is therefore a barrier to deep reductions in nuclear arsenals, which is ironic for those who believe LOAC compliance can be achieved only through a prohibition on nuclear weapons and who see deep reductions as an essential waystation on the path toward nuclear disarmament.

We recognize that a variety of other factors lend support to the US preference for counterforce, including military organizational interests in modernized and technically advanced forces,²⁵ the demands of maintaining morale within the nuclear commands,²⁶ and worse-case planning that understandably influences nuclear strategy when the adversary's decision criteria and decision calculus cannot be entirely known. These factors are sufficient on their own to explain the US commitment to counterforce and its pursuit of damage limitation. Nevertheless, adding (or continuing to develop and sharpen) another sophisticated, appealing, and easily understood set of guidelines that favors counterforce risks

widening the internal coalition of government players who favor counterforce and provides current proponents with a powerful argument. Our hope is that the United States will eventually reject its counterforce doctrine against major powers. Taking the LOAC off the table will not be sufficient to bring about this radical change. But accepting the LOAC guidance for US nuclear strategy will make accomplishing this transformation still more difficult.

The United States should reject its counterforce doctrine against major powers

Reconsidering Countervalue Nuclear Strategy

Underpinning our assessment of the impact of applying the LOAC to US nuclear strategy is the logic that provided the foundation for the Cold War debate over nuclear strategy between states that possess assured destruction capabilities—that is, the ability to inflict such a high level of damage that the adversary cannot recover, at least in anything resembling its current form.²⁷ When both states have an assured destruction capability, they are in a condition of mutual assured destruction, or MAD.²⁸ This debate addresses which nuclear strategy and forces can best achieve US interests in MAD—including protecting US vital interests, avoiding nuclear war, maintaining US alliances, bolstering the nonproliferation regime, minimizing damage if nuclear war occurs, and most importantly, minimizing the potential loss of life and the risk to civilization.²⁹ Considering the LOAC within the context of the debate over US nuclear strategy provides an essential perspective from which to appreciate the implications of the LOAC.

In broad terms, the deep divide within this Cold War debate is between countervalue and counterforce strategies.³⁰ The counterforce school offers a variety of arguments for being able to threaten opposing nuclear forces even when a condition of mutual assured destruction exists. These arguments have changed over time and have included the spectrum of arguments noted above.

In contrast, the countervalue school emphasizes the futility of counterforce attacks when they are unable to significantly reduce the adversary's ability to inflict damage.³¹ There is essentially no role for strategic counterforce attacks, certainly not large ones. When the adversary has an assured destruction capability, there is no utility in attempting to destroy its nuclear forces, because doing so by definition does not reduce the adversary's ability to inflict cataclysmic retaliatory damage; their massive retaliatory capability is assured. In addition, the countervalue school also stresses that the logical use of nuclear weapons in MAD is coercive—threatening costs via attacks against cities, populations, and/or centers of economic activity.

Of course, this line of reasoning does not hold that the United States *should* engage in this type of coercive bargaining; rather, it holds only that if nuclear weapons are used, their logical use is against targets that the adversary values—civilian infrastructure and populations—and demonstrations that signal the increased probability of more costly attacks. A potential advantage of this seemingly brutal approach is that, by highlighting the punitive nature of nuclear attacks, it should eliminate the possibility that US leaders would underestimate the risks of nuclear use by incorrectly envisioning attacks in traditional/conventional terms and might therefore make US escalation less likely.

Further, the countervalue school sees potentially large crisis and escalatory dangers in large counterforce forces because they create incentives to alert forces early in a crisis and to launch attacks before the adversary's forces are fully alerted and support the mistaken belief that meaningful damage limitation is feasible. This does not mean that nuclear weapons should be targeted only against cities and industrial centers. Nuclear bargaining could begin with less costly and horrible attacks, including demonstration attacks and attacks against isolated industrial targets. Attacks should be limited to preserve the adversary's incentives for restraint and war termination. The purpose of any initial nuclear attack would be to increase the adversary's assessment that it will suffer still greater damage if the conflict is not resolved. Along these lines, Thomas Schelling argued that while "[t]he choice is presented as one between a counterforce campaign that is subject to control and a purely retaliatory campaign that is a total spasmodic response[,] I find it more plausible that the actual choice is between the opposite alternatives."³²

The LOAC essentially bans the strategy recommended by the countervalue school. In contrast, the LOAC allows for some of the types of counterforce attacks supported by the counterforce school. Proponents of applying the LOAC suggest an openness to their logic, for example, regarding targeting

nuclear forces to inflict costs on leaders that highly value their nuclear forces but not their population and responding in-kind to limited counterforce attacks.³³

We fall solidly into the countervalue school, which provides the foundation for our conclusion that applying the LOAC to US nuclear strategy leaves the United States with strategy options that are poorly matched to achieving its goals and which are poten-

tially quite dangerous. The US counterforce strategy that is allowed by the LOAC reduces US security, increasing the probability of nuclear war and

The LOAC leaves only quite dangerous strategy options poorly matched to achieving US goals

likely the magnitude of civilian casualties if nuclear war occurs. The costs of abiding by the LOAC greatly exceed the political/diplomatic value of doing so.

Preventing Nuclear War Should Guide Nuclear Strategy

In sum, we believe that the LOAC provides poor guidance for US nuclear policy. Although intuitively appealing—because attacking civilians would be horrible—this appeal is misleading. Nuclear policies guided by the LOAC risk leaving the United States without an adequate deterrent and, more importantly, support force postures that make both nuclear war and escalation to all-out war *more* likely. Moreover, a nuclear war driven by the pressures created by large counterforce forces would likely inflict the very huge costs to civilians that abiding by the LOAC seeks to avoid.

So long as the United States retains nuclear weapons, it should rely on a strategy that meets its deterrence requirements while minimizing incentives and pressures for nuclear use during crises, the probability of accidents and unauthorized use, and strains in political relations that are generated by arms races. In addition, if deterrence fails, the strategy should create incentives for the slow and deliberate use of nuclear weapons, not impulsive, rapid, or massive attacks. This can be achieved by a countervalue strategy that includes a range of limited nuclear options and little or no counterforce capability. The United States could adopt this policy unilaterally, but cooperation with major-power nuclear adversaries would increase both the prospects for and effectiveness of this policy. Arms control agreements that constrain counterforce forces, thereby reducing incentives to attack early and massively, would reduce the probability of nuclear war and, if desirable, pave the way to reductions in the size of states' forces. This type of agreement would also reduce the danger posed by the targeting allowed by the LOAC, although the logic for targeting nuclear forces would remain weak.

The LOAC misguides US nuclear policy. The most ethical and moral nuclear policy is the one that minimizes the probability of nuclear war and the probability as well as extent of escalation if nuclear war does occur. This strategy is precluded by the law of armed conflict.

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Notes

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2. In 1973, Secretary of Defense Elliott Richardson testified that “We do not in our strategic planning target civilian population per se”; quoted in Desmond Ball and Jeffrey T. Richelson, eds., *Strategic Nuclear Targeting* (Ithaca: Cornell University Press, 1988), 241.
3. See Scott S. Sagan and Allen S. Weiner, “The Rule of Law and the Role of Strategy in U.S. Nuclear Doctrine,” *International Security* 45, no. 4 (2021), 126-166.
4. US Department of Defense, Report on Nuclear Employment Strategy of the United States Specified in Section 491 of 10 U.S.C., June 12, 2013, 4-5, <https://www.hsdl.org/?view&did=739304>.
5. Nuclear Posture Review, Office of the Secretary of Defense, February 2018, 23.
6. Sagan and Allen S. Weiner, “The Rule of Law and the Role of Strategy in U.S. Nuclear Doctrine,” *International Security*, 161-163. See also Jeffrey G. Lewis and Scott D. Sagan, “The Nuclear Necessity Principle: Making U.S. Targeting Policy Conform with Ethics & the Laws of War,” *Daedalus* 145, no. 4 (2016): 62-74.
7. George Perkovich, “How Much is Too Much: Bounding Nuclear Deterrents,” *Washington Quarterly* 43, no. 4 (2020): 65-78; and George Perkovich and Pranay Vaddi, *Proportionate Deterrence: A Model Nuclear Posture Review*, Carnegie Endowment for International Peace, 2021.
8. C. Robert Kehler, “Nuclear Weapons & Nuclear Use,” *Daedalus* 145, no. 4 (2016): 50-61, quote at 55.
9. We use “countervalue targets” and “civilian and supporting infrastructure” interchangeably. Some readers may find countervalue to be obfuscating; we use it because it is well-established in the nuclear strategy discourse and captures the sharp distinction with counterforce.
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11. See for example Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University, 1966) and Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon* (Ithaca: Cornell University Press, 1989).
12. Sagan and Weiner, “The Rule of Law and the Role of Strategy in U.S. Nuclear Doctrine,” 129.
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15. See Christopher Ford in Christopher A. Ford, et al., “Correspondence: Are Belligerent Reprisals Against Civilians Legal,” *International Security* 46, no. 2 (2021): 166-168.

16. Sagan and Weiner, "The Rule of Law and the Role of Strategy in U.S. Nuclear Doctrine," 164.
17. See for example, McGeorge Bundy, et al., "Nuclear Weapons and the Atlantic Alliance," *Foreign Affairs* 60, no. 4 (1982): 766.
18. Schelling, *Arms and Influence*, chap. 6; Charles L. Glaser, *Analyzing Strategic Nuclear Policy* (Princeton: Princeton University Press, 1990), chap. 7.
19. Fred Kaplan, *The Bomb: Presidents, Generals, and the Secret History of Nuclear War* (New York: Simon and Schuster, 2020).
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26. See for example Russell E. Dougherty, "The Psychological Climate of Nuclear Command," in Ashton B. Carter, John D. Steinbruner and Charles A. Zracket, *Managing Nuclear Operations*, Brookings, 1987, 424.
27. See Glaser and Fetter, "Should the United States Reject MAD?," 54-62.
28. MAD is not a strategy; see Jervis, *The Meaning of the Nuclear Revolution*, Chap. 3.
29. Some of these are derivative interests that we include here without engaging the underlying debates; on derivative interests see Charles Glaser, "Rational Analysis of Grand Strategy," in Thierry Balzacq and Ronald R. Krebs, eds., *The Oxford Handbook of Grand Strategy* (Oxford: Oxford University Press, 2021).
30. See Glaser, *Analyzing Strategic Nuclear Policy*; and Jervis, *The Illogic of American Nuclear Strategy*.
31. The question of pursuing damage-limitation capabilities against states that lack an assured destruction capability is less controversial, although complex. We have addressed this issue in Charles L. Glaser and Steve Fetter, "Counterforce Revisited: Assessing the Nuclear Posture Review's New Missions," *International Security* 30, no. 2 (2005): 84-126; and Charles L. Glaser and Steve Fetter, "National Missile Defense and the Future of U.S. Nuclear Weapons Policy," *International Security* 26, no. 1 (2001): 40-92.
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33. Sagan and Weiner, "The Rule of Law and the Role of Strategy in U.S. Nuclear Doctrine," 163-164.