

Atomic Aversion: Experimental Evidence on Taboos, Traditions, and the Non-Use of Nuclear Weapons

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How strong are normative prohibitions on state behavior? We examine this question by analyzing anti-nuclear norms, sometimes called the “nuclear taboo,” using an original survey experiment to evaluate American attitudes regarding nuclear use. We find that the public has only a weak aversion to using nuclear weapons and that this aversion has few characteristics of an “unthinkable” behavior or taboo. Instead, public attitudes about whether to use nuclear weapons are driven largely by consequentialist considerations of military utility. Americans’ willingness to use nuclear weapons increases dramatically when nuclear weapons provide advantages over conventional weapons in destroying critical targets. Americans who oppose the use of nuclear weapons seem to do so primarily for fear of setting a negative precedent that could lead to the use of nuclear weapons by other states against the United States or its allies in the future.

Do normative prohibitions restrain state behavior? If so, what are the origins of these prohibitions and what costs are states willing to pay to avoid violating international norms? These questions lie at the heart of many of the most important debates in international relations today. In recent decades, scholars have explored the power of international norms to shape state behavior across a variety of different domains, including compliance with international law, respect for human rights, and changing patterns of humanitarian intervention. One set of norms that have received particular attention from scholars relate to the normative prohibitions on states’ choices of weapons and tactics during armed conflict, such as the use of chemical weapons, landmines, drones, and torture; the treatment of prisoners of war; and the deliberate targeting of civilian populations. Perhaps the most significant and widely recognized argument about the power of normative prohibitions to restrain states’ behavior during conflict, however, focuses on anti-nuclear norms. Numerous scholars and policy makers have endorsed

the view that a powerful norm against the first use of nuclear weapons has emerged after the end of World War II and has played a major part in the non-use of nuclear weapons since then.

The continued non-use of nuclear weapons is one of the most important puzzles in international relations. Few people alive to witness the bombing of Hiroshima and Nagasaki would have anticipated that 65 years later nuclear weapons would never have been used again in war. Realist perspectives on international politics would seem to offer few explanations for why states might voluntarily forego the use of such powerful weapons. Although mutual deterrence may explain the non-use of nuclear weapons against other nuclear-armed states (Jervis 1990; Sagan and Waltz 2012; Waltz 1990), since 1945, nuclear weapons states have never used these weapons against non-nuclear states either—despite military advisors developing nuclear strike options and urging consideration of nuclear use (Cohen 2010; Gaddis 1987; Posen 1997) and despite those states suffering military defeats and significant military casualties in some conflicts. For example, more than 58,000 Americans died in the Vietnam War and an estimated 13,400 Soviet soldiers died in the Afghan War, but neither the leaders in Washington nor those in Moscow chose to use nuclear weapons against adversary forces or enemy cities.

In this article we investigate the power of norms to shape how states and their citizens consider the choice of weapons and tactics in war, focusing specifically on nuclear weapons. Nuclear weapons afford a unique opportunity to study these kinds of norms. Not only do many scholars and policy makers agree that anti-nuclear norms are particularly strong and categorical but also the well-defined, binary nature of the divide between nuclear and conventional weapons makes it easier to study attitudes about these weapons. Norms against torture or the killing of noncombatants during war, for example, involve surprisingly nuanced and contested conceptions about precisely what actions constitute torture and who counts as a combatant or

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noncombatant. But the behavior prohibited by anti-nuclear norms—the first use of nuclear weapons—is universally recognizable.

We explore three broad theoretical perspectives on how states and their citizens think about nuclear weapons. The first perspective, which we call the “social-constructivist school,” sees the decision to use nuclear weapons as driven by what March and Olsen (1989) call “the logic of appropriateness.” Under this logic, decisions are motivated by actors’ preconceived notions about what kinds of behavior are appropriate or inappropriate in certain situations, rather than by a careful evaluation of the costs and benefits of alternative courses of action. Social constructivists emphasize that widely held ethical or social prohibitions against the use of nuclear weapons exert a powerful influence over decisions about their use. Indeed, some have argued that these prohibitions have become so ingrained and absolute that the use of nuclear weapons has become a taboo. Taboos are powerful prohibitions that are deeply rooted in culture; they do not merely shape decisions but also preclude some options from consideration. In the social-constructivist view, people do not view nuclear weapons as simply more powerful conventional bombs. Rather, they are seen as belonging to a separate category of inherently abhorrent weapons, the use of which has become virtually unthinkable.

A second school of thought sees states’ choices about weapons and tactics as determined instead by the logic of consequences—an essentially utilitarian comparison of available options. This perspective, which we call the “military utility school,” suggests that when choosing among different possible weapons or tactics, states focus primarily on the immediate efficacy of each alternative. In the case of nuclear weapons, this explanation begins with the observation that, although nuclear weapons are much more powerful than conventional weapons, in many situations this destructiveness is unnecessary or even counterproductive. Although military planners have identified plausible nuclear targets in a broad range of wars, the military utility explanation contends that the likelihood of nuclear use depends on the unique benefits that nuclear weapons are believed to provide (e.g., destroying critical hardened targets or massed conventional military formations) compared with the costs stemming from their immense destructiveness. Nuclear weapons are more likely to be used as their utility increases relative to conventional weapons (we operationalize a weapon’s “utility” in our study as its ability to destroy specific targets and thereby protect American cities and civilians, or to decrease the number of American servicemen who would be killed in an overseas combat operation).

The third school of thought also suggests that states’ policy choices follow the logic of consequences, but sees states’ decisions as conditioned by strategic interaction with other states. In this view, states may choose to avoid the use of certain weapons or tactics—even when they promise substantial military advantages—because of concerns that using them might set a precedent that could lead others to use them in the future. According to this “strategic interaction” explanation, a tradi-

tion of the non-use of nuclear weapons has emerged in which states have implicitly agreed to forego the immediate military gains of using nuclear weapons to their mutual, long-term benefit.

These three explanations are not mutually exclusive. There are good reasons to believe that states’ decisions regarding weapons and tactics, including nuclear weapons, are shaped by both the logic of appropriateness and the logic of consequences. Nevertheless, understanding the relative strength of those logics has important theoretical and policy implications. If decisions about nuclear use are powerfully constrained by views about the intrinsic immorality of nuclear weapons (e.g., if nuclear use is rejected and seen as taboo or unthinkable), then that would constitute convincing evidence that normative forces can have a major effect on state behavior even in matters of supreme national security, a central claim of social constructivism. With respect to policy implications, such a finding would suggest that nuclear first use is unlikely to be seriously considered by leaders or supported by the public in future conflicts—at least in those countries that subscribe to these norms. If, however, decisions about the use of nuclear weapons are driven primarily by consequentialist calculations, then nuclear use might be more easily contemplated and accepted as necessary in many more circumstances. The different schools of thought also suggest different consequences should nuclear use occur. If nuclear weapons are seen as taboo, their use might generate revulsion that could lead to deeper restraint in the future. If non-use is merely a tradition, however, breaking it could set a new precedent, potentially increasing the likelihood that others will use nuclear weapons in the future.

We evaluate these explanations by conducting an original survey experiment on a representative sample of American citizens. Although not without their own limitations, survey experiments provide an especially powerful method for understanding how people think about the use of nuclear weapons. We find relatively little evidence that the U.S. public strongly opposes the U.S. use of nuclear weapons. Although the American public is averse to using nuclear weapons when conventional and nuclear strikes promise identical levels of effectiveness, sizable fractions of the American public prefer nuclear options if they promise even modest benefits in effectiveness over conventional strikes. A majority of the public is willing to approve the use of nuclear weapons even when the target of the U.S. nuclear strike does not include an adversary with weapons of mass destruction (WMDs) and when nuclear weapons are expected to kill large numbers of the adversary’s civilians.

Second, the aversion to using nuclear weapons has none of the bright-line, absolute, or unthinkable qualities of a taboo. Rather, support for nuclear strikes rises steadily as a function of their perceived military utility. And third, consistent with the strategic interaction explanation, those subjects who opposed using U.S. nuclear weapons overwhelmingly did so out of fear that nuclear use might set a dangerous precedent and lead eventually to nuclear attacks against the United

States or its allies, not because of moral reservations, concern for America's reputation, or a sense that the weapons are inherently uncivilized. Overall, our findings suggest that the logic of consequences, not the logic of appropriateness, dominates in this issue area: Even when contemplating nuclear use options—where normative prohibitions are believed to be powerful—norms create only weak constraints on behavior.

NUCLEAR NORMS AND THE LOGIC OF APPROPRIATENESS

For several decades, scholars have been exploring and debating how international politics is shaped by the formal and informal norms that guide how states and other international actors behave (Finnemore 1996; Kratochwil 1989; Wendt 1999). As Peter Katzenstein explains, norms are “collective expectations for the proper behavior of actors with a given identity” (Katzenstein 1996, 5). They are the foundation of the categories we create—such as legitimacy, terrorism, or sovereignty—that help us understand the world, form identities, and facilitate ethical judgments (Finnemore 1996; Onuf 1989; Wendt 1999). Norms can also have regulatory effects on actions, directly shaping the decisions of leaders by constraining their conceptions of appropriate behavior (Lumsdaine 1993; Ruggie 1992). In this view, many of the most important decisions that states and their citizens make are driven primarily by what James March and Johan Olsen famously called “the logic of appropriateness,” which posits that “action is often based more on identifying normatively appropriate behavior than on calculating the return expected from alternative choices” (March and Olsen 1989, 22).

This social-constructivist research paradigm, which draws extensively on earlier work in the fields of sociology and psychology, has become one of the most productive approaches in the field of international relations. Scholars working in this paradigm have reported evidence of the influence of social norms in almost every aspect of international relations, ranging from the emergence of the modern state system itself, to the adoption of the neoliberal international economic system, to the spread of a wide range of human rights, to emerging norms about humanitarian intervention (Finnemore and Sikkink 2001).

One of the areas that has received the most sustained attention from scholars has been the role of social norms in constraining state behavior regarding the use of force (Katzenstein 1996). Scholars have argued that international norms constrain the legitimate aims of war (Finnemore 2003), the need to obtain multilateral or institutional approval for the use of force (Hurd 2007), the treatment of enemy prisoners of war (Finnemore 1999), the use of child soldiers (Rosen 2007), and the killing of civilians during war (Kinsella 2011). The psychologist Steven Pinker argues that there has been a deep shift in norms about a variety of types of violence at both the individual and societal level: “Moral norms, even when ineffable, can sometimes be

effective brakes on violent behavior. In the modern West . . . the avoidance of some kinds of violence, such as mercy-killing an abandoned child, retaliating for an insult, and declaring war on another developed state, consist not in weighing the moral issues, empathizing with the targets, or restraining an impulse, but in not having the violent act as a live option in the mind at all. The act is not considered and avoided; it is unthinkable or laughable” (Pinker 2011, 624).

Much of the literature on norms and the use of force has focused on norms regarding the possession and use of particular kinds of weapons. In this area, scholars have argued that norms have powerfully shaped states' decisions to produce, use, or agree to limit chemical weapons (Price 1997), biological weapons (Cole 1998), cluster munitions (Bolton and Nash 2010), landmines (Cottrell 2009; Price 1998), and a multiplicity of other “unconventional” weapons. Perhaps the most important and widely debated arguments about the ability of norms to restrain state behavior during war, however, focus on nuclear norms. A growing literature has explored the evolution and effects of nuclear norms, for example on governments' decisions about the acquisition of nuclear weapons. Some scholars maintain that the growth of global anti-nuclear norms has made nuclear acquisition unappealing to the political elite in many countries—in some cases because the elite genuinely endorse these anti-nuclear norms and in other cases because they fear the political or commercial consequences of violating the international norm (Ruble 2009; Sagan 1996; Solingen 2007). Other research stresses the importance of formal agreements against proliferation, codified in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) (Müller and Schmidt 2010; Potter 2010). A significant number of scholars, however, have also cautioned against overstating the causal power of norms in this area, arguing that the national security interests of governments and the psychology of specific leaders also play a key role (Hymans 2006; Sagan 2011; Singh and Way 2004).

Although there is no consensus about the link between norms and the acquisition of nuclear weapons, there is greater agreement that norms have helped prevent the use of nuclear weapons since World War II. In her path-breaking study, Nina Tannenwald argues that a powerful, ethically based social norm has emerged since World War II that has “stigmatized nuclear weapons as unacceptable weapons of mass destruction” (Tannenwald 1999, 433). Tannenwald argues that the normative prohibition against the first use of nuclear weapons is so powerful that it has become “taboo-like.” Taboos—such as the near-universal proscriptions on cannibalism and incest—do not operate by subtly shifting peoples' calculations of costs and benefits. Rather they trigger powerful, visceral responses. Hutton Webster describes taboo behavior as being “mystically dangerous” (Webster 1942, 2), and according to Sigmund Freud taboos define the “forbidden” and “unclean” (Freud 1950). As Verna Gehring writes, “the strength of taboos depends not on considered reflection, but on revulsion” (quoted in Tannenwald 2007, 11). According to Tannenwald, the

prohibition against the first use of nuclear weapons is like a taboo; it is a bright-line norm, one that is characterized by “absoluteness, unthinkingness, and taken-for-grantedness” (Tannenwald 2007, 11).

As evidence, Tannenwald highlights the repeated instances in which the United States fought non-nuclear adversaries without resorting to nuclear weapons, even though it faced no immediate risk of retaliation. She also provides evidence that U.S. officials frequently used what she calls “taboo talk” to explain their opposition to the use of nuclear weapons. For example, when former White House Chief of Staff John Sununu was asked whether the United States had been prepared to use nuclear weapons in the 1991 Gulf War, he replied simply, “We just don’t do things like that” (Tannenwald 2007, 303). General Buster Glosson, the chief planner of the U.S. bombing campaign during that war, said that the contemplation of using nuclear weapons was “absolutely so repulsive to me that it would change me as a person” (Glosson 1995; quoted in Tannenwald 2007, 301). The prohibition against the first use of nuclear weapons, Tannenwald emphasizes, does not depend on precisely how the weapons are used, how militarily advantageous they might be, or how many people are killed. Rather, she writes, “leaders and publics have come to view this phenomenon not simply as a rule of prudence, but as a taboo, with an explicit normative aspect” (Tannenwald 2007, 14).

Influential policy makers have also expressed the belief that using nuclear weapons is simply unthinkable. In a 1983 article, George Ball, a former senior official in the Kennedy and Johnson administrations, argued that “the public instinctively knows that nuclear weapons differ not merely in degree but in kind from conventional weapons” and that a “revulsion” had “enveloped nuclear weapons in a rigid taboo” (Ball 1983, 37). In 2007, a group of 22 prominent scientists, including 12 Nobel Prize laureates, published a letter in the *New York Times* arguing that “crossing the nuclear threshold, even with a low-yield weapon, would erase the 60-year-old taboo against the use of nuclear weapons” (Anderson et al. 2007). The presumption that a powerful norm has rendered the use of nuclear weapons unthinkable has led some policy makers to call for anti-nuclear norms to include complete nuclear disarmament. In 2008, for example, UN Secretary General Ban Ki-moon stated, “Today, there is support throughout the world for the view that nuclear weapons should never again be used.... Some call this the nuclear ‘taboo.’ Yet nuclear disarmament has remained only an aspiration, rather than a reality. This forces us to ask whether a taboo merely on the use of such weapons is sufficient” (Ban 2008).

MILITARY UTILITY, TRADITION, AND THE LOGIC OF CONSEQUENCES

Although much of the recent scholarship on attitudes toward nuclear weapons has focused on normative arguments that follow March and Olsen’s logic of appropriateness, two additional explanations focus on

their “logic of consequences,” in which “behaviors are driven by preferences and expectations about consequences” (March and Olsen 1989, 160). From this perspective, considerations concerning the morality and appropriateness of the use of nuclear weapons take a back seat to assessments of their advantages and disadvantages compared to other military options.

The first consequentialist explanation, which we call the military utility explanation, focuses on considerations of immediate effectiveness and suggests that support for nuclear weapons use depends primarily on the degree to which people believe that nuclear weapons will provide significant military advantages over conventional options. In its unqualified form, the military utility perspective suggests that the choice between nuclear and conventional weapons is little different from the choice between air power and ground forces: Each option will be preferred when its unique strengths and weaknesses best fit the strategic circumstances. In certain situations, nuclear weapons can provide unique capabilities compared to conventional munitions. Nuclear weapons, for example, offer an unmatched capability to destroy hardened structures, such as buried command bunkers, and large “area targets” (e.g., cities, massed military formations, ports, and airfields). They are especially advantageous in situations in which extremely important, hardened targets must be destroyed in a single strike. This does not mean that nuclear weapons will always be favored, however, even when they have a greater probability of destroying a target, because nuclear weapons also have significant military limitations. In many cases they could destroy infrastructure that an attacker might wish to spare, threaten allied military forces, disable critical means of communications, and potentially contaminate regions an attacker might wish to occupy and rebuild after a war. In such cases, conventional weapons might be preferred, even if using them might entail greater costs and risks of failure. As John Mueller (2010) writes,

Although nuclear countries have been at war or at military loggerheads with other countries from time to time since 1945, their nuclear restraint in these contests... seems to stem at least as much from perceptions of the weapons’ military uselessness as from concerns about breaking any prohibitory tradition or taboo. That is, it has been less a tradition of nonuse than of non-usefulness.... At no point, it may well be, were there reasons to use the weapons that were compelling from a strictly military point of view (62).

A second school of thought, which we call the strategic interaction school, also sees attitudes about nuclear weapons as guided by the logic of consequences. The strategic interaction explanation, however, suggests that decisions about the use of nuclear weapons depend not simply on a calculation of the immediate costs and benefits of different military options but also on the longer term consequences of changing other states’ views about the utility and likelihood of nuclear use. In particular, this perspective suggests that attitudes about the use of nuclear weapons are influenced by concerns that using these weapons could set a

precedent that might encourage other states to build or use nuclear weapons in the future.

The strategic interaction school draws on a large literature that also points to the power of norms, but not necessarily cultural or ethical prohibitions, as important determinants of state behavior. Rather, these norms tend to emerge out of repeated interaction and serve to encourage cooperation by providing information, reducing the transaction costs associated with making agreements, and decreasing the incentives to renege on agreements by holding out the prospect of long-term gains (Keohane 1984; Simmons and Martin 2002). Ward Thomas has usefully labeled such traditions as “convention-dependent norms,” arguing that they “rely heavily on precedent and patterns of reciprocal adherence” (Thomas 2001, 34).

Scholars working in this tradition see norms as a way to reach desirable outcomes that might not occur without some kind of coordination. By implicitly or explicitly identifying certain acceptable and unacceptable behaviors, these norms can shape expectations about other states’ behavior that make cooperation easier. International relations scholars have argued that these kinds of norms explain coordination in military alliances, international law, international environmental policy, economic sanctions campaigns, and more (Duffield 1992; Goldsmith and Posner 2005; Haas, Levy, and Keohane 1993; Martin 1992). James Morrow (2007) argues that a similar dynamic may also drive compliance with the laws of war governing the use of chemical and biological weapons, the treatment of enemy prisoners of war, and other wartime conduct.

According to the strategic interaction explanation, there may be no nuclear taboo *per se*. Instead, there is a tradition of non-use that helps states solve a classic prisoners’ dilemma: Nuclear weapons states occasionally have a short-term, battlefield interest in “defection” (e.g., using nuclear weapons against a non-nuclear adversary), but they forego those short-term gains and cooperate to extend the tradition—to their mutual benefit. In T.V. Paul’s words, “Over time, the iterated non-use of nuclear weapons became self-perpetuating through the establishment of an informal norm: that is, later decisions to refrain from nuclear use were based, in part, on previous decisions to desist and a desire to continue the practice” (Paul 2009, 2). Thomas Schelling expresses a similar view, describing the tradition of non-use as “a jointly recognized expectation that [nuclear weapons] may not be used in spite of declarations of readiness to use them, even in spite of tactical advantages in their use” (Schelling 1980, 260; in Paul 2009). In the case of nuclear weapons, an equilibrium centered on an unambiguous norm of non-use might be easier to maintain than an equilibrium that permitted nuclear weapons to be used under some circumstances. As George Quester writes, “the difficulty with accepting any ‘good’ use of nuclear weapons . . . is that it may set a precedent for a host of ‘bad’ uses” (Quester 2006, 115).

Under this theory, leaders are strongly inhibited from using nuclear weapons not primarily by ethical considerations but rather because they fear that nu-

clear use will set a precedent they would eventually regret, increasing the probability that others would use nuclear weapons in the future (Paul 2010; Sagan 2004). “There is an important analytic difference,” Scott Sagan argues, “between cases in which you are refraining from an act because you think it is wrong versus refraining from an act because you fear that if you do it, others eventually will do it too, as a direct or indirect consequence of your action” (Sagan 2004, 76).

There are other potential pathways through which strategic considerations might discourage nuclear use. For example, T. V. Paul (2009, 25–37) argues that leaders may feel few ethical qualms about using nuclear weapons, but may expect allies or potential allies to disapprove of their actions. Such leaders may exercise restraint to avoid damaging their country’s reputation, which could harm their interests in the future. In addition, nuclear states may fear that using nuclear weapons against non-nuclear states could encourage other non-nuclear states to develop nuclear weapons of their own as a deterrent. The wider proliferation of nuclear weapons might then limit the ability of the state that used nuclear weapons to project power in the future. In these ways, breaking the precedent might ultimately do more long-term damage to a state’s interests than the short-term military advantage could justify.

Scholars in the strategic interaction school cite examples of decision makers explaining their opposition to using nuclear weapons by pointing to the risk of setting precedents for later use by others. General Colin Powell, for example, explained his reluctance to use nuclear weapons against Iraq in 1991 by arguing that “we’re not going to let that genie loose,” displaying a concern about the harmful precedent that a U.S. nuclear strike would create. (Powell and Perisco 1995, 472). Newt Gingrich, then the Republican minority whip in the House of Representatives, agreed. “We would not want to live in a world in which we had sent a signal to every country on the planet to get nuclear weapons as fast as you can,” he argued. “Maintaining a threshold . . . against the use of nuclear weapons is a very rational strategy in the long run, and will save a lot of lives in the long run” (Dillin 1991).

It is important to emphasize that there is no reason to expect that any one of the three explanations described here alone accounts fully for attitudes toward the use of nuclear weapons or the historical pattern of nuclear non-use. We describe these three alternatives as “ideal type” explanations, but even a cursory review of history suggests that a combination of the theories is probably necessary to explain the past 65 years of nuclear non-use. For example, few doubt the willingness of the United States to use nuclear weapons in the direst circumstances—say, to prevent an invasion of the United States. Likewise, the military utility theory alone cannot account for the fact that nuclear-armed states have repeatedly refrained from using nuclear weapons when they would have provided some marginal military benefits against adversaries who could not retaliate. The three specific questions we seek to answer are therefore as follows: (1) is there an aversion to the use of nuclear weapons;

(2) if this aversion exists, is it based primarily on ethical notions about the weapons themselves or on prudential concerns about precedent setting; and (3) how much additional military utility must nuclear weapons provide before people are willing, if ever, to support the first use of nuclear weapons?

Elite and Public Opinion on Nuclear Weapons

Where should we begin to look for evidence for how people think about the use of nuclear weapons? Most scholars who have studied nuclear norms have focused primarily on the attitudes and behavior of the political and military elites who make decisions regarding the use of nuclear weapons. Typically these scholars have focused on elite statements and actions in past military crises in which nuclear weapons were or were not considered. This kind of analysis has generated valuable insights, but studying elite statements and behavior to understand the power of nuclear norms has at least three significant limitations. First, leaders frequently take actions or express views that are consistent with more than one explanation. For example, as noted earlier, Colin Powell opposed the use of nuclear weapons in the 1991 Gulf War in part due to concerns not to “let that genie loose” and to avoid setting a precedent for the future use of nuclear weapons by others. This logic is consistent with the strategic interaction theory. Powell also suggested, however, that his decision was influenced by considerations of military utility. Describing his reaction to a report studying the possibility of using nuclear weapons against Iraq, Powell later wrote, “The results unnerved me. To do serious damage to just one armored division dispersed in the desert would require a considerable number of small tactical nuclear weapons If I had had any doubts before about the practicality of nukes in the field of battle, this report clinched them” (Powell and Perisco 1995, 486). Although there is no reason to doubt that Powell’s opposition to using nuclear weapons could have been motivated by both views simultaneously, it is impossible to evaluate which reasons were more influential.

Second, because many of the statements that elites have made about nuclear weapons have been issued in public or to reporters or in personal memoirs, it is impossible to rule out a self-serving bias. If elites believe that the public opposes nuclear weapons, they may find it advantageous to describe their opposition in moral rather than practical terms.¹ Finally, studying elite statements and behavior limits our analysis of nuclear attitudes to existing historical cases. Even if it were possible to identify the motives of elites in those cases, it is difficult to know how elites would have acted in military crises in which the incentives to use nuclear weapons were higher.

In this article, we argue that examining public opinion can provide important new insights into the strength and nature of the atomic aversion. As we describe later, although traditional public opinion polls are subject to many of the same limitations as historical case studies of political and military elites, survey experiments are not. Shifting our focus to the attitudes of the general public, however, does raise the question of whether anti-nuclear norms are primarily an elite phenomenon. Fortunately, scholars who attribute nuclear non-use to powerful norms clearly indicate that those norms are widely held. For example, Tannenwald describes the nuclear taboo as “a widespread popular revulsion against nuclear weapons” and argues that “domestic public opinion was an important factor both in constraining U.S. leaders’ resort to the use of nuclear weapons and in forming the taboo itself” (Tannenwald 2007, 8, 48). Thomas Schelling argues that “the antinuclear instinct” and belief in the tradition of nuclear non-use are “widespread among the people and the elites of the more developed countries” (Schelling 1994, 114–15). Taboos, in particular, are so deeply rooted in a society’s culture and psyche that it is difficult to imagine a contemporary taboo that would apply only to elites. Incest and cannibalism, for example, are considered unthinkable and trigger disgust across all social and political classes.

Moreover, there are strong reasons to believe that public opinion on nuclear weapons ought to affect the decisions of elites about whether or not to use them. Although the conventional wisdom once held that the public played a marginal role in foreign affairs (Holsti and Rosenau 1984), in recent years scholars of international relations and American foreign policy have increasingly explored the links between public opinion and critical decisions about the use of force. Much of the literature on public opinion and support for war is motivated by the belief that public opinion exerts a significant influence on wartime decisions (Croco 2011; Feaver and Gelpi 2004; Holsti 2004; Jentleson 1992; Larson 1996). Many scholars of the democratic peace argue that the democratic electorate has an important voice in war and peace decisions (Doyle 1997; Oneal and Russett 2001). Some scholars argue that latent public opinion—elites’ expectations of public reactions to policy choices—quietly shapes foreign policy (Powlick and Katz 1998; Zaller 1994), whereas others focus on the public’s expressed views as inputs to war and peace decisions (Baum and Groeling 2010; Foyle 1999; Sobel 2001). These debates are far from settled, but the direction of the scholarship has been to undermine the old trope that politics ends at the water’s edge and to extend familiar models of democratic politics into the realm of foreign policy decision making (Baum and Potter 2008; Berinsky 2009).

To the degree that public opinion is strongly opposed to nuclear weapons use, therefore, political leaders, at least in democracies, ought to be more constrained from making direct nuclear threats or using nuclear weapons. This conclusion, combined with the affirmation by scholars who propose the existence of strong anti-nuclear norms that these norms shape public as

¹ For examples of the stark differences between what American elites said in public and in private about bombing civilians during World War II see Crane (1993, 31–38).

well as elite attitudes, makes public opinion a reasonable place to test theories of nuclear non-use.

The earlier discussion suggests several specific hypotheses about American public opinion on nuclear weapons. At the broadest level, both the social-constructivist school and the strategic interaction school expect the public to exhibit a strong aversion to using nuclear weapons.

Hypothesis 1: All else equal, Americans will prefer conventional over nuclear military options.

Although social-constructivist and strategic interaction explanations of nuclear non-use each expect the public to prefer conventional weapons to nuclear weapons, they offer different explanations for why people will prefer conventional weapons. As we described earlier, social-constructivist explanations of nuclear non-use maintain that the preference for conventional weapons derives from social or ethical concerns about the use of nuclear weapons. This suggests that the public should justify its preference for conventional weapons with reference to the immorality of or disgust at using nuclear weapons or should claim that nuclear use violates its sense of identity (e.g., as members of a civilized state).

Hypothesis 2: Americans will explain their preference for conventional weapons over nuclear weapons by referring to the immorality or uncivilized nature of nuclear use.

The strategic interaction school, in contrast, implies that the public will favor conventional options because of concerns about the precedent that nuclear use would set for other countries.

Hypothesis 3: Americans will explain their preference for conventional weapons over nuclear weapons by referring to prudential concerns, such as the fear of setting a precedent that could lead to the future use of nuclear weapons by adversaries.

Finally, the military utility explanation suggests that attitudes toward nuclear weapons should depend primarily on considerations of their immediate military effectiveness compared to conventional military options.

Hypothesis 4: Americans will increase their support for nuclear strikes as the utility of such strikes increases relative to conventional military options.

Note that empirical support for Hypothesis 4 would also tend to disconfirm the strongest version of the social-constructivist explanation described earlier (i.e., that nuclear first use is taboo). Because taboos are bright-line norms—violated only in the most extreme circumstances—the public's preference for conventional military options over nuclear options should be largely insensitive to considerations of the effectiveness of nuclear weapons compared to conventional weapons.

Evidence from Existing Public Opinion Polls

What does previous polling tell us about public views on nuclear use? Public opinion polling on nuclear weapons began with the first use of nuclear weapons. A poll conducted soon after World War II, for example, found that 77% of Americans supported the use of atomic bombs against Japan, including 54% who said they approved of the decision to bomb Hiroshima and Nagasaki and 23% who wished that the United States had dropped *more* atomic bombs before the Japanese had a chance to surrender. In the wake of that brutal war, only 19% of respondents disapproved: the dissenters included 14%, who preferred a demonstration of the bomb before use (presumably to give Japan a chance to surrender), and only 5% actually opposed the use of atomic bombs on Japan altogether (Dower 1986, 54). Support for the attacks on Hiroshima and Nagasaki has decreased since 1945, but a majority of Americans continue to approve of the use of nuclear weapons in World War II: A 2009 Quinnipiac University poll, for example, indicated that 61% of Americans thought the United States did the “right thing” by dropping the atomic bombs, whereas only 22% said it did the “wrong thing” (Quinnipiac University 2009).

Unfortunately, the results of existing polls are inconclusive regarding the strength and causes of the public aversion to the use of nuclear weapons. Polling on nuclear weapons use has been relatively infrequent and survey questions have been inconsistently worded. Furthermore, most polls simply ask subjects whether they support the use of nuclear weapons, without asking why they do or do not. As a result, it is impossible to ascertain whether a respondent's opposition to using nuclear weapons stems from ethical considerations, fear of setting a negative precedent, or the calculation that nuclear weapons may be militarily counterproductive. In fact, in any real-world military crisis or conflict, subjects' views on nuclear use could be influenced by their beliefs about the justness of the war, the identity of the adversary, the stakes involved, the number of expected casualties on all sides, or the popularity of the U.S. president who ordered the strike, among countless other factors. Existing polling data do not permit scholars to disentangle the influence of these crisis-specific factors or the effects of concerns about ethics, precedent, or military utility on respondents' preferences.

This problem is compounded by the fact that almost all existing polls pose abstract questions about nuclear use—without providing details about the advantages and disadvantages of nuclear weapons compared to conventional weapons. Several of these abstract polls seem to show relatively high levels of opposition to nuclear use. For example, a 2006 Chicago Council on Global Affairs poll found that only 20% of the U.S. public agreed that “in certain circumstances the United States should use nuclear weapons even if it has not suffered a nuclear attack.” A majority of respondents (58%) said that the United States “should only use nuclear weapons in response to a nuclear attack,” and another 20% said that the United States “should

never use nuclear weapons under any circumstances” (Chicago Council on Global Affairs 2006).² This poll, however, asked respondents to react to the prospect of U.S. nuclear weapons use in the abstract, without presenting a scenario or describing the tradeoffs that a U.S. leader might face in a crisis or war.

When confronted with real-world conflicts in which nuclear weapons might be militarily useful, the U.S. public has sometimes registered greater support for nuclear use. For example, in a January 1991 poll, only 24% of Americans supported the use of nuclear weapons “if allied forces [could] not quickly defeat Iraq with conventional weapons,” but support jumped to 45% if respondents were told that using tactical nuclear weapons “might save the lives of United States troops” (Gallup 1991; Time/CNN/Yankelovich 1991). Two polls conducted in the lead-up to the second U.S.-Iraq war found that 60% of respondents (in December 2002) and 65% (in March 2003) supported a U.S. nuclear response if Iraq used weapons of mass destruction in the conflict (ABC News/Washington Post 2002; Fox News/Opinion Dynamics 2003).³ More broadly, scholars have demonstrated the importance of providing survey respondents with context and information about tradeoffs in any poll measuring attitudes about public policy choices. Richard Eichenberg, for example, demonstrates that the failure of most polls on the use of military force to provide respondents with estimates of expected U.S. casualties in prospective military operations systematically inflates estimates of support for the use of force (Eichenberg 2005, 167; see also Gelpi, Feaver, and Reifler 2009, 255–60).

In sum, polls since 1945 provide numerous snapshots of U.S. attitudes about nuclear weapons use across the decades, but the often abstract framing of their questions, the absence of context, and the lack of follow-up questions on the reasoning underlying their respondents’ answers limit these polls’ ability to shed light on the strength and sources of the U.S. public’s aversion to using nuclear weapons.

RESEARCH DESIGN

To help overcome these issues with existing poll data, we conducted a survey experiment on a large, representative sample of American citizens over the age of 18.⁴ Survey experiments have been used effectively in the international relations literature in recent years to investigate the nature of domestic audience costs, the causes of the democratic peace, and the gender gap in

public support for U.S. war involvement (Brooks and Valentino 2011; Tomz 2007; Tomz and Weeks 2012). This article marks the first major use of survey experiments to test prominent theories about the use of nuclear weapons. Unlike case study evidence or public opinion data drawn from historical wars or crises in which nuclear weapons were (or were not) considered, a survey experiment allows us to generate a military scenario in which we can hold most relevant facts about the scenario constant (e.g., the target of a potential military strike and the number of “enemy” civilian casualties or U.S. military casualties) while varying only one aspect of the crisis (e.g., whether nuclear or conventional weapons are used or the relative consequences or military effectiveness of nuclear and conventional options). This allows us to isolate the effects of these variables on the public’s willingness to use nuclear weapons and to examine how subjects might respond to the use of nuclear weapons in situations that have not occurred in history. The survey format also allows us to ask subjects about their personal reasons for supporting or opposing U.S. nuclear weapons use in ways that enable assessment of the competing explanations for nuclear non-use.

To conduct this survey we contracted with YouGov/Polimetrix, an internet polling and experimental research firm. Polimetrix uses a technique called “sample matching” to approximate a representative sample. This sampling technique is still in its infancy compared to simple equal probability random sampling, but it is becoming increasingly popular for use in academic research applications, and its samples have been shown to meet or exceed the quality of those based on more traditional telephone polling techniques (Berrens et al. 2003; Sanders et al. 2007).⁵

In the two experiments that are the principal source of data for this article, subjects were randomly selected into one of five separate conditions (one experiment had two conditions, and the other had three) with approximately 150 subjects in each condition. All the research subjects were told they were about to read a fictional news story about a military crisis between the United States and Syria. Syria was chosen as the target of the U.S. attack because it is a state that does not have operational nuclear weapons, thereby eliminating the possibility of nuclear retaliation against the United States, and because polls showed that—at the time of this survey—most U.S. citizens did not hold strong views (positive or negative) about Syria (Gallup 2007).⁶ Subjects were told to read

² In a 2005 poll, however, support for using nuclear weapons first jumped to 46% (with 43% opposed) if another country “seriously threatened to use nuclear weapons against the U.S.” (Pew Research Center 2005).

³ Unfortunately, the Fox News poll asked respondents if they would support “the United States using weapons of mass destruction in response” to Iraq use of WMDs, without informing respondents that this meant the United States would be using nuclear weapons, because the United States has no chemical or biological weapons in its arsenal. However, the Fox News finding is nearly identical to the results of the ABC/Washington Post result from four months earlier.

⁴ The experiments were conducted between January 19 and 23, 2011.

⁵ Some scholars (Hill et al. 2007) have suggested that YouGov/Polimetrix’s sampling technique may tend to overrepresent highly politically engaged subjects. YouGov/Polimetrix, however, has attempted to adjust for this by including political engagement in its recruitment and weighting methodology. A comparison of our subjects’ self-reported political engagement to the results of a 2008 ANES survey found no significant differences in levels of engagement.

⁶ The experiments were conducted before the 2011 “Arab Spring” protests in Syria. A 2007 poll, for example, found that only 22% of Americans held a “very unfavorable” view of Syria and only 2% a “very favorable view.” The remainder of the population had no

the story carefully and urged to “imagine how you would feel about these events if they were happening in the real world today.” The story was constructed to look like a typical newspaper story with an Associated Press byline. The five stories—one per treatment group—are included in Online Appendix 2 (available at <http://www.journals.cambridge.org/psr2013005>).

Although the use of explicitly hypothetical stories may have decreased the realism of the subjects’ experience, we did not believe it was possible or ethical to deceive subjects into believing that nuclear weapons had been used or were about to be used in the real world. Indeed, attempting to do so would have introduced noise and bias, because a nonrandom subset of respondents would have believed the vignettes were real. Nevertheless, the use of hypothetical situations such as those described in our stories has long been accepted as a method to assess public opinion (Brooks and Valentino 2011; Finch 1987; Tomz 2007).

The two experiments used two different types of stories—prospective and retrospective—although both experiments presented a variation of a common scenario. In the first experiment, which was designed to vary the relative military utility of nuclear weapons, three treatment groups were presented with prospective news stories (see Figures A1–A3 in Online Appendix 2) in which subjects read that the United States had discovered an Al Qaeda lab in Syria producing nuclear weapons using materials smuggled out of Russia. The articles reported that U.S. officials were deciding between nuclear and conventional military options for destroying the Al Qaeda lab. The news stories described a report to the president produced by the Joint Chiefs of Staff that outlined the expected effectiveness of each military option, as well as the Syrian civilian fatalities and U.S. military fatalities estimated for each strike. Each story also provided estimates of how many U.S. civilians might be killed if Al Qaeda used these weapons against the United States. In these prospective stories, the experimental treatment varied the reported effectiveness of nuclear weapons compared to conventional weapons in destroying the target. One treatment group read that the conventional and nuclear options under considerations would have equal probability (i.e., 90%) of destroying the lab. The other two treatment groups read that the nuclear strike would have a higher chance of destroying the target than the conventional option: 90% vs. 70% for one treatment group, and 90% vs. 45% for the other. All the other aspects of the strikes were held constant across the stories.

In the second experiment, the two treatment groups were presented with retrospective stories about a U.S. military strike that had already been carried out against the Al Qaeda lab (see Figures A4–A5 in Online Appendix 2). In these stories, the target of the strike and the consequences of the attack (e.g., the number of Syrian civilian fatalities and the extent of U.S. military losses) were held constant while we varied the type

of weapons used by the United States: conventional (100 conventional cruise missiles) versus nuclear (2 nuclear cruise missiles). The Al Qaeda lab was successfully destroyed in both stories, but subjects in these retrospective stories were given no information about pre-strike estimates of the effectiveness or potential consequences of alternative military options.

The news stories carried the experimental manipulations in the headline, the head lead, a pull quote, several sentences throughout the story, and (in the prospective experiment) in a table summarizing the comparison between nuclear and conventional options. Nevertheless, the relatively long length of the treatment articles raises a concern that some subjects may not have read the news stories closely. Our results, however, strongly suggest that subjects were attending to the most critical aspects of the stories. For example, our prospective stories suggested that nuclear and conventional weapons would kill the same number of civilians, and we found that less than 2% of the subjects who opposed using nuclear weapons chose “using nuclear weapons increased the expected number of Syrian civilian fatalities in the operation” as their primary reason for opposing the nuclear strike.

In addition, to increase subjects’ incentives to attend to the story, all subjects were informed at the outset of the study that if they failed to read the story carefully and to demonstrate basic comprehension, they risked being ineligible to complete the survey, but that if they answered comprehension questions correctly they would be eligible for a raffle for a \$100 gift certificate. If subjects failed the manipulation check, they were given an opportunity to reread the story. To ensure that reading the story a second time did not influence the results, all analyses reported in the article were estimated again, dropping subjects who read the story twice. There were no meaningful changes in the substantive size or statistical significance of any of our findings.

Immediately after reading the news stories, subjects answered a series of approximately 50 survey questions (see Online Appendix 1, available at <http://www.journals.cambridge.org/psr2013005>, for the full question wordings of questions used in this article). The first set of questions included the manipulation check and focused on the subjects’ immediate reactions to the news story—including their preferences for nuclear vs. conventional attacks in the prospective stories or their approval or disapproval of the attack in the retrospective stories. Next, subjects proceeded to answer a series of additional questions, including some prompts for demographic information and questions designed to probe attitudes about nuclear weapons and the use of force more generally.

RESULTS

The results in Figure 1a provide a direct test of the claim that, all else equal, the American public prefers conventional weapons to nuclear weapons (Hypothesis 1). The figure shows the responses from the treatment

opinion or held more moderate views. This compares to 48% of the population in the same poll that registered a “very unfavorable” view of Iran.

FIGURE 1A.
Prefer Nuclear or Conventional Strike?

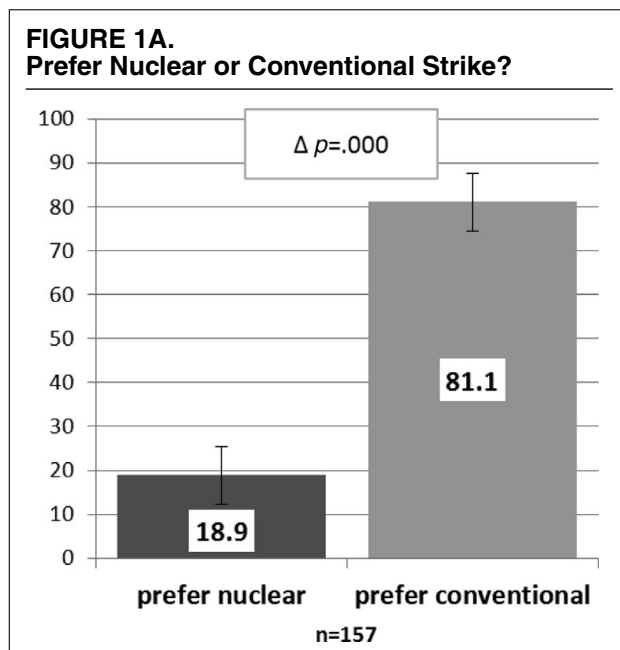
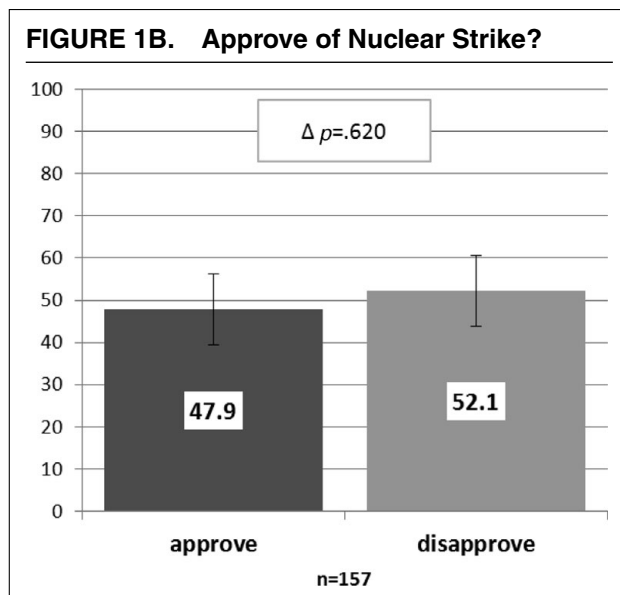


FIGURE 1B. **Approve of Nuclear Strike?**



group that received the prospective news story explaining that Al Qaeda was building atomic bombs in Syria and that U.S. conventional and nuclear strike options were equally likely to destroy the Al Qaeda lab. Subjects were asked: “If you had to choose between one of the two U.S. military options described in the article, would you prefer the nuclear strike or the conventional strike?”⁷

The respondents’ answers provide support for the claim (Hypothesis 1) that the U.S. public is generally

averse to the use of nuclear weapons. Respondents preferred using conventional weapons to nuclear weapons by a ratio of 4:1, with 19% preferring the nuclear option. Most respondents who preferred the nuclear strike in this scenario—even though nuclear weapons offered no additional effectiveness—articulated coherent explanations for their view: 49% cited the desire to send a “strong message to Al Qaeda and other potential enemies of the United States that we will not permit them to build weapons of mass destruction” as the primary reason for their choice. Another 30% selected this option: “the United States cannot hold back when fighting enemies who seek to destroy us.”

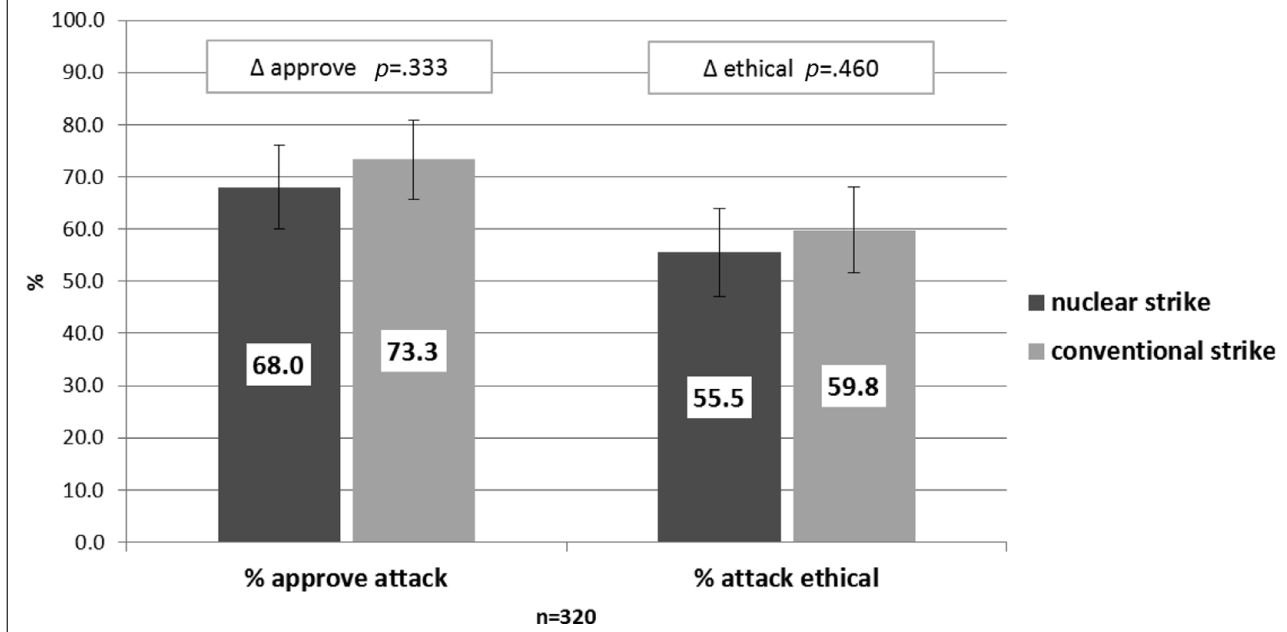
Although these results confirm that a widespread aversion against nuclear use exists, other findings suggest that this aversion has a relatively weak effect on public attitudes. For example, the respondents who were told that conventional and nuclear options would produce identical results (i.e., in effectiveness and casualties) were also asked, “[I]f the United States decided to conduct a *nuclear* strike to destroy the Al Qaeda base, how much would you approve or disapprove of the U.S. military action?” Figure 1b shows the fraction of respondents who said they would “approve” of the nuclear option. Even though nuclear weapons promised no additional increment of effectiveness in this scenario and even though 80% of respondents *preferred* the conventional option, roughly half of respondents said they would *approve* of a U.S. nuclear strike in this situation. Indeed, there was no statistically significant difference between the number of subjects who approved of using nuclear weapons and the number who disapproved.

Results from our second experiment further illustrate the limits of the norm against nuclear use. In this *retrospective* experiment, subjects read news stories about a U.S. military strike on an Al Qaeda nuclear weapons lab. Half the subjects read a story in which the U.S. attack was carried out using two nuclear-tipped cruise missiles. The other half read that the United States had launched 100 conventionally armed cruise missiles. All other aspects of the story were identical, including the number of Syrian civilian deaths (1,000) and U.S. military deaths suffered in the attack (none).

The results of this experiment are presented in Figure 2. More than two-thirds of subjects approved of the nuclear strike, and more than half viewed a U.S. nuclear strike as ethical. Although subjects approved of a conventional attack at slightly higher rates than they approved of a nuclear attack, and were slightly more likely to see the nuclear attack as unethical, these differences were substantively small and not statistically significant.

Combined with the results from Figure 1, these findings suggest that, although Americans prefer conventional weapons when presented with a choice that clearly specifies that nuclear weapons provide no advantages, a large proportion are willing to “approve” of a strike when presented with a description of an attack after the fact. Although the prospective experiment may more closely approximate the experience of

⁷ Most questions used a 4- or 6-point scale (ranging from strongly agree/approve/prefer to strongly disagree/disapprove/do not prefer). In this article we present dichotomized results for ease of interpretation. We note the very few instances when we obtained substantively different results using the full scale of responses.

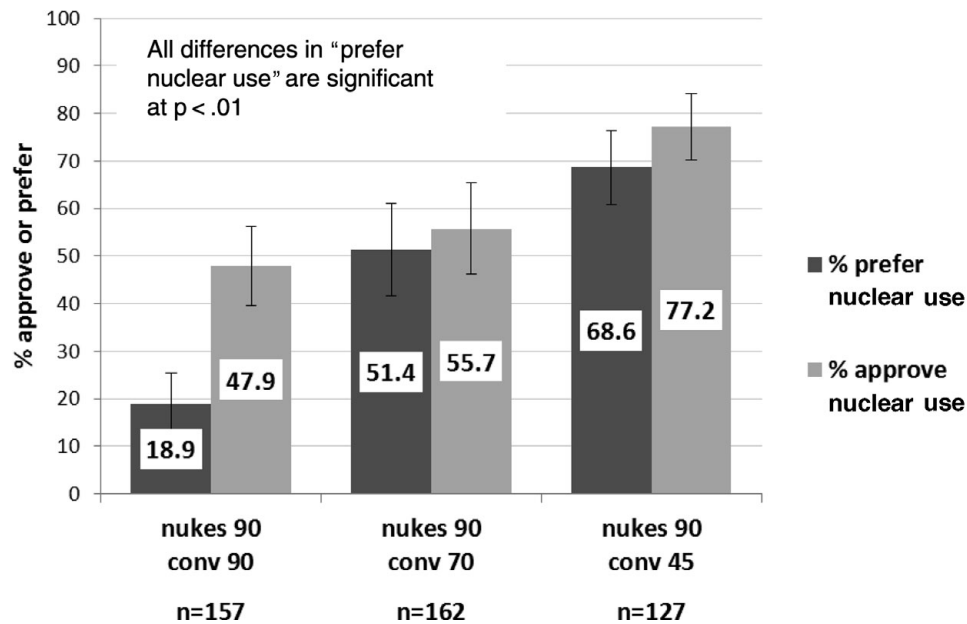
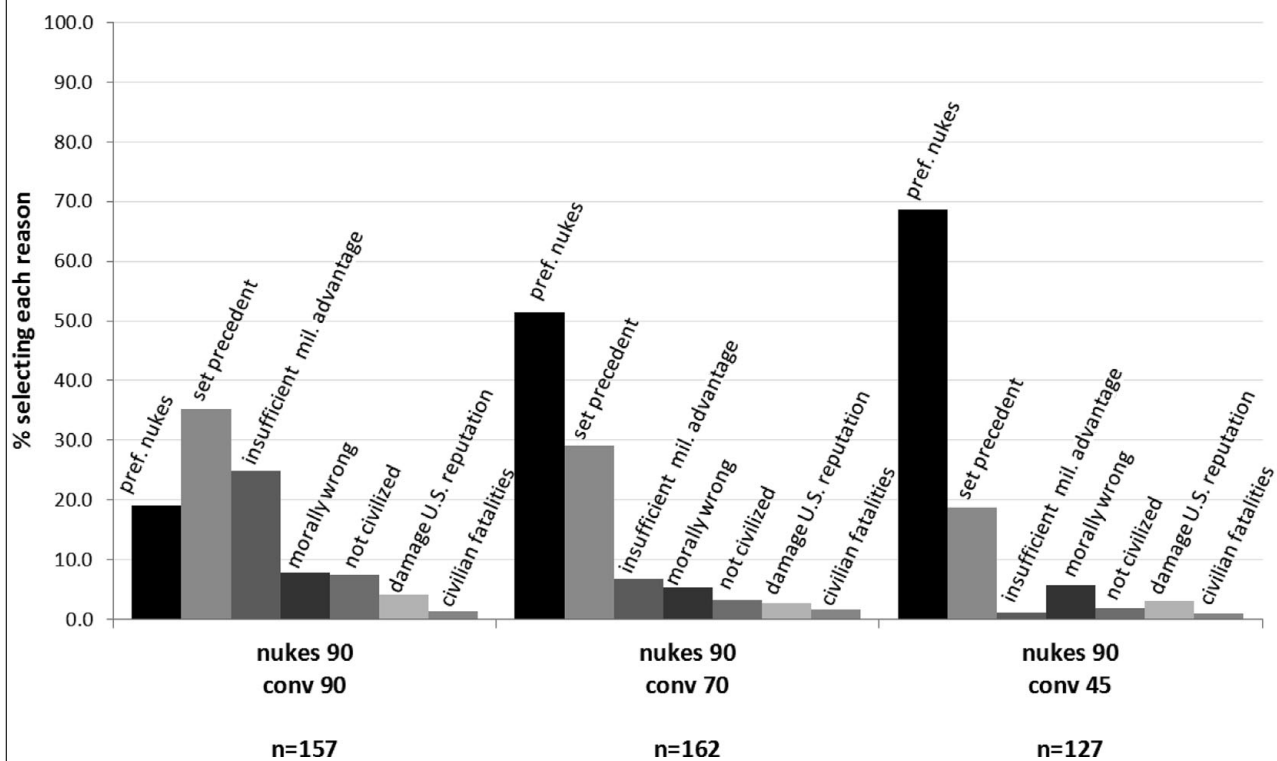
FIGURE 2. Attack approval and morality in retrospective nuclear and conventional attack stories

political or military decision makers, the retrospective experiment is probably closer to the way the public would learn about an attack in the real world. Thus, these results suggest that public opinion is not likely to exert a strong restraining influence on decision makers in situations similar to the one described in our stories. Furthermore, the evidence in Figures 1 and 2, taken together, raises significant questions about the claim that a “taboo-like” norm against nuclear use exists in the American public. Far from being unthinkable or repulsive, the experiments suggest that U.S. nuclear use is something that a substantial majority of the American public is prepared to support, at least in high-stakes situations.

The data presented in Figure 3 provide a direct measure of the strength of atomic aversion, because it demonstrates the degree to which public support for U.S. nuclear first strikes varies in proportion to the perceived relative military utility of nuclear weapons. The data in Figure 3 are drawn from the three treatment groups who read the “prospective” stories about Al Qaeda’s bomb lab in Syria (stories A1–A3 in Online Appendix 2). One treatment group (already discussed in reference to Figures 1a and 1b) was told that the president’s military advisors estimated that U.S. conventional and nuclear options promised the same chance of destroying the lab (90%). The second treatment group was told that nuclear weapons would give the United States a “small” advantage (90% vs. 70%) over the conventional option. The third treatment group read that a nuclear strike was twice as likely to succeed as the conventional alternative (90% vs. 45%). After reading one of these stories, subjects were asked which option they preferred and whether they would approve of a nuclear strike.

The data in Figure 3 lend strong support to the idea that the aversion to nuclear weapons use is relatively weak: The proportion of respondents who preferred a nuclear attack increased dramatically along with the weapons’ utility (Hypothesis 4). As noted earlier, only 19% of respondents preferred nuclear weapons if they offered no additional capabilities compared to conventional forces. But the respondents who were told that nuclear weapons offered a 20% increase in effectiveness preferred nuclear and conventional options at roughly equal rates: 51% nuclear vs. 49% conventional. Respondents who were told that a nuclear strike would double the odds of success preferred the nuclear option by more than 2:1 (69% to 31%). The fraction that “approved” of a nuclear strike also grew with its effectiveness—from 48% when nuclear and conventional weapons were equivalent to 77% when the nuclear option offered twice the effectiveness of conventional weapons.

Although these results suggest that the aversion to nuclear weapons is relatively weak, it is still important to understand the sources of that aversion. The results in Figure 4 allow us to distinguish the specific reasons why subjects who preferred conventional weapons did not prefer the nuclear option, enabling us to differentiate between social-constructivist reasons and strategic interaction reasons for preferring conventional weapons (and to evaluate Hypotheses 2 and 3). In Figure 4, the solid black columns show the percentage of respondents in each of the three prospective treatment groups who preferred a U.S. nuclear strike. The gray columns reveal—for all those respondents who preferred the conventional options—the single most important reason why they *did not* prefer the nuclear strike. Specifically, all subjects who

FIGURE 3. Preference and approval of nuclear weapons, by relative effectiveness**FIGURE 4. Reasons for preferring conventional strike**

reported that they preferred the conventional option were asked this question: “Which of the following is the most important reason why you *did not prefer* the nuclear strike?” They selected one choice from the list of responses in Figure 4.

As Figure 4 shows, across all three treatment groups the most common reason why respondents did not prefer a nuclear strike was their fear of setting a precedent (“using nuclear weapons in this situation might encourage other states or terrorist groups to use

nuclear weapons against the U.S. or our allies in the future”). This finding supports Hypothesis 3. Furthermore, among those respondents who offered strategic interaction explanations for opposing a nuclear strike, those who were mainly concerned about “precedent” outnumbered those who focused on “reputation” by a ratio of more than 8:1. Social-constructivist reasons for preferring conventional weapons were cited much less often. Even in the treatment group that was told that conventional and nuclear options were equally effective, only 15% of respondents said that they preferred the conventional option because using nuclear weapons would have been “morally wrong” or “uncivilized” (combined), compared with the 35% who feared setting a precedent.⁸ Indeed, even if we interpret all answers except “using nuclear weapons did not provide a significant advantage over conventional weapons in destroying the target” as potentially ethical reasons for preferring conventional weapons, the fear of setting a precedent outweighed all the other reasons combined in every treatment.⁹

Further evidence on the importance of ethical considerations can be gleaned from the following survey question, which was asked of subjects in all five experimental conditions described in this article: “Some people consider the question of whether to use nuclear weapons to be a moral question. Others think of it as a practical question about how best to protect American security. Do you personally consider it to be mostly a moral question or mostly a practical question?” Only 18% of subjects agreed that the decision was mostly moral, whereas 59% indicated it was mostly practical (this difference is significant at $p < .001$).¹⁰

Finally, although our subjects were selected to provide a representative sample of the American population, we can also examine whether certain subpopulations were more or less likely to support the use of nuclear weapons. Because the decision to use nuclear weapons in the real world is made by political elites, it is especially interesting to look at how potential indicators of elite status correlate with nuclear attitudes. To explore this question we combined the subjects from all three *prospective* treatment groups and regressed (logit) several individual-level characteristics on subjects’ preferences for nuclear over conventional

TABLE 1. Preference for Nuclear Weapons (logit)

	Coef.	Robust SE	p-value
College graduate	−0.779	0.252	0.002
Republican	0.710	0.230	0.002
Political interest	0.121	0.130	0.35
Income	−0.034	0.037	0.348
Age	−0.004	0.008	0.599
Male	0.380	0.225	0.09
Constant	7.277	15.110	0.63
N = 446			

weapons. Our measures of elite status included education level, income, age, gender, and subjects’ self-reported level of interest in political events. We also included a measure of political partisanship.

Table 1 reports the results of this regression. We found that college graduates were significantly less likely to prefer nuclear weapons, but none of the other elite characteristics significantly affected subjects’ preferences.¹¹ Republicans were also more likely to prefer nuclear weapons, but this is not an indicator of elite status. Although more research is necessary to explore elite attitudes on nuclear weapons, these findings suggest that elites may not differ dramatically from the general public in their views toward nuclear weapons.

DISCUSSION

Overall, these findings suggest that the public is inclined to give American leaders wide latitude on the decision to use nuclear weapons, at least in the short term and in high-threat scenarios like the ones we presented to our subjects. We believe that these kinds of scenarios are also the ones in which leaders are most likely to perceive utility in using nuclear weapons. Indeed, our results are consistent with the long-standing literature on the “rally around the flag” effect, which maintains that the U.S. public initially strongly supports the president after he makes decisions to use force, though support may erode as U.S. casualties increase over time (Brody 1991; Lian and O’Neal 1993). Our finding that a larger percentage of respondents consistently “approved” of the president’s use of nuclear weapons compared to those who personally “preferred” nuclear use in identical prospective scenarios might be seen as a “rally around the bomb” phenomenon.¹² The finding that 13% of the public was willing to “approve” of a

⁸ We operationalized “ethical reasons” by adding those who selected “morally wrong” and those who chose “not civilized.” It is not clear whether two of the rationales for selecting conventional weapons—“minimize enemy civilian fatalities” and prevent “damage [to] U.S. reputation”—should also be considered social-constructivist norm answers. There could be prudential reasons to avoid killing civilians or protect America’s reputation. Because subjects were asked to choose the single most important reason why they did not prefer nuclear weapons, subjects motivated primarily by ethical concerns should have been most likely to select “morally wrong” or “not civilized.”

⁹ The percentage choosing “set precedent” was statistically significantly larger ($p < .05$) than these other answers combined in all treatments except the treatment in which nuclear weapons were twice as effective ($p = .11$). However, this finding is most likely because so few people preferred conventional weapons at all in this treatment.

¹⁰ The remainder selected the option exactly midway between mostly moral and mostly practical (4 on a 7-point scale).

¹¹ Holding all other variables at their median values, college graduates were 16% less likely to prefer using nuclear weapons than noncollege graduates.

¹² Our experiments, however, did not test whether that support might erode over time if the nuclear strikes caused massive environmental damage, produced grisly descriptions or photographs of nuclear bomb victims in the media, or led to major protests from foreign publics or governments. Future experiments could usefully examine this issue.

nuclear strike even if they personally judged it to be unethical is additional evidence of this effect.

Several of our scenarios elicited even higher levels of support for the use of nuclear weapons than those found in wartime public opinion polls in recent American conflicts, such as the 1991 and 2003 Gulf Wars. It is likely that our explicit comparison of nuclear and conventional military options, the moderate level of civilian casualties in most scenarios, and the nature of the target—an Al Qaeda nuclear weapons lab—led to increased support for nuclear weapons among our subjects. As noted earlier, without details such as these it is virtually impossible for subjects to form meaningful opinions about the use of nuclear weapons. Indeed, the results of our experiments raise questions regarding the validity of most existing public polls regarding U.S. nuclear weapons, which rarely provide subjects with critical details such as the relative effectiveness of nuclear and conventional options or estimates of the U.S. military or civilian lives saved or “enemy” noncombatant lives that would be lost in any hypothetical use of nuclear weapons. Our findings suggest that public opinion is highly sensitive to these factors, with support rising as nuclear weapons are seen as more effective at destroying critical targets and falling as adversary or third-party civilian deaths increase. Future experiments could usefully assess the critical question of how the American public evaluates the often unavoidable tradeoff between reducing collateral civilian casualties and reducing the risk of U.S. military or civilian losses.

Some readers may object that our experimental design does not effectively isolate normative concerns about nuclear use from military utility because in our experiment the U.S. military strikes destroyed an Al Qaeda nuclear facility that could have been used to develop weapons that could kill large numbers of American civilians. As a result, choosing nuclear weapons because they were more effective than conventional alternatives may have seemed to some survey respondents to be the most moral course of action. It is also possible that respondents who favored nuclear weapons use believed that retribution is an important moral good and therefore that any attack on Al Qaeda was morally justified in response to the September 11, 2001, terrorist attacks, even if it caused significant collateral damage. We do not claim that our findings suggest that the American public ignores or rejects normative concerns about nuclear use. However, the findings do demonstrate that the norm against nuclear weapons use is much weaker than has been previously assumed and that whatever moral objections people may have about using these weapons do not seem to stem from the fact that they are “nuclear” per se. Our experiments were designed to explore the strength of the norm against the first use of nuclear weapons that is supposed to make such attacks “unthinkable”—and the conditions under which that norm might outweigh the desire to protect American lives.

Readers might also wonder whether our experimental treatments “stacked the deck” against the ethical aversion explanation by choosing scenarios that involved grave threats to U.S. national security. In fact,

some might argue, given the high stakes involved in these scenarios, that what is noteworthy is that 32% of respondents would *not* approve of a nuclear strike (Figure 2), even when it doubled the chances of destroying an Al Qaeda atomic bomb lab. Is this evidence of a strong ethical norm against nuclear weapons use?

We suggest three reasons to reject this interpretation. First, as Figure 2 illustrates, approximately 27% of respondents also disapproved of a *conventional* U.S. strike on the Al Qaeda lab, a proportion that is statistically indistinguishable from the 32% who disapproved of using nuclear weapons. In other words, among those willing to use *some* kind of military force in this situation, the public was no less likely to approve of a nuclear strike than a conventional one. Whatever factors caused many Americans to oppose the conventional operation (perhaps its preemptive nature, the civilian fatalities, or the desire to avoid another war in the Middle East), the choice of nuclear or conventional weapons swayed very few additional subjects. Second, it is important to recall that the majority of respondents who did oppose using nuclear weapons in these scenarios did not cite ethical reasons for their position.

Third, although it is reasonable to assume that the high-stakes nature of the scenarios likely generated higher overall levels of approval for U.S. nuclear strikes than a low-stakes situation would have produced, we also explored an additional scenario that examined U.S. attitudes in a situation in which nuclear strikes were not essential to protect large numbers of U.S. civilians.¹³ In that experiment, we presented subjects with a scenario in which the target of the U.S. nuclear strike did not possess weapons of mass destruction (see Figure A6 in Online Appendix 2). In that scenario, Al Qaeda operatives had launched an attack using speed boats rigged with conventional high explosives to sink a U.S. cruise ship at sea, killing 4,200 civilians. The United States retaliated with a nuclear strike on the Al Qaeda base in Syria from which the attack was planned. More than 72% of respondents approved of the U.S. nuclear strike in this scenario. This finding suggests that high levels of public support for nuclear weapons are not limited to operations designed to prevent major U.S. loss of life or to circumstances in which adversaries may use WMDs.

The data presented in this article may lead readers to wonder whether leaders’ reluctance to use nuclear weapons—even against non-nuclear weapon states—stems not from an aversion to nuclear weapons, per se but from the large number of civilian fatalities that nuclear weapons could cause in many plausible scenarios.¹⁴ In other words, perhaps scholars of the

¹³ These experiments were conducted as part of a broader study designed to examine other factors that might affect U.S. public support for the use of nuclear weapons.

¹⁴ Nuclear strikes against targets in sparsely populated regions might produce fatalities of 1,000 or even fewer. The prompt lethal effects of nuclear explosions only extend, at most, a few miles from the detonation. Fallout poses a major lethal hazard and can contaminate vast regions, but only if detonations occur below the “fallout threshold,” which is a function of warhead yield (Glasstone and Dolan 1977; Lieber and Press 2009, appendix).

nuclear taboo/tradition have conflated evidence of a growing opposition among many countries (including many nuclear-weapon states) to intentionally targeting noncombatants with evidence of a normative aversion to nuclear weapons. In another experiment, we explored whether subjects would be willing to use nuclear weapons in situations in which nuclear weapons killed large numbers of adversary civilians. In this scenario, the target of the strike was again an Al Qaeda atomic weapons lab in Syria (see Figure A7 in Online Appendix 2). Subjects were told that nuclear weapons were twice as likely as conventional weapons to destroy the lab, but that the nuclear strike would also kill 25,000 Syrian civilians, compared to only 100 civilian deaths in the conventional strike. In this scenario, 39% of subjects still preferred the nuclear option, and 52% were willing to approve it.¹⁵ These are surprisingly high levels of support for using nuclear weapons especially because—unlike in the bombing of Japan during World War II or most other cases of strategic bombing—there was no implication in our scenario that the local civilians who were killed were in any way affiliated with or supported Al Qaeda.

Indeed, recent research about U.S. attitudes toward adversary civilian casualties in wartime suggests that the public's tolerance for civilian casualties is higher than has been often assumed. In an analysis of dozens of polls across four major U.S. military operations, Eric Larson and Bogdan Savych find that, although the "prospect of civilian casualties can affect support prior to the onset of a military operation, during armed conflict it is not so much beliefs about the numbers of civilian casualties that affect support for U.S. military operations as the belief that the United States and its allies are making enough effort to avoid casualties" (Larson and Savych 2006, xx). Larson and Savych also find that the public is inclined to trust the U.S. military to minimize civilian casualties and that "substantial majorities of Americans have consistently expressed the belief that the U.S. military and its coalition partners were making all necessary efforts to avoid civilian casualties and that the casualties that resulted, while regrettable, ultimately were unavoidable consequences of war" (Larson and Savych 2006, 209). It seems likely, therefore, that subjects who approved of nuclear weapons in our scenario concluded that, despite the high number of civilian casualties, the United States had taken reasonable precautions to minimize the loss of life.

Of course, we cannot rule out the possibility that support for the use of nuclear weapons would decline further in lower stakes situations or when nuclear weapons generated even higher costs compared to conventional options. Further experiments might fruitfully explore those scenarios. Nevertheless, the ability to destroy, with high confidence, high-value, time-sensitive

hardened targets similar to the ones described in our stories constitutes one of the distinguishing capabilities of nuclear weapons. These situations therefore are also ones in which nuclear weapons are most likely to be considered in the real world. Lower value targets, in contrast, are less likely to be extensively hardened, and U.S. military planners should be able to provide higher levels of confidence that such targets would be completely destroyed in a conventional strike.¹⁶

CONCLUSIONS

Scholars and policy makers alike have pointed to the non-use of nuclear weapons as one of the most powerful regulative norms constraining the use of force in international relations. However, our findings indicate that, for most Americans, the inhibitions against using nuclear weapons are relatively weak and decidedly not subject to a taboo. In the nuclear domain, the logic of consequences is stronger than the logic of appropriateness. Most Americans appear to weigh the consequences of using nuclear weapons in the narrow terms of immediate military effectiveness. As a result, the public's attitudes toward nuclear weapons lack the bright-line nature of a taboo. People do not dabble in cannibalism when they are a little hungry; rather they resist until they are on the verge of starvation, and only then might they break the taboo. With nuclear weapons, however, the U.S. public's preference for nuclear options seems to grow steadily as a function of perceived utility.

Furthermore, those Americans who oppose the use of nuclear weapons—regardless of their immediate military utility—seem to do so because of their concerns about the future responses of other countries. In our experiments, subjects who rejected the use of nuclear weapons overwhelmingly explained their preference by referring to the risks of setting a dangerous precedent. Only a small fraction of respondents explained their preference for conventional weapons by focusing on the immorality of nuclear attacks or the uncivilized nature of these weapons.

These findings have broader implications for the debate about the role of normative constraints in international relations more generally. Our research does not

¹⁵ Note that these reduced levels of support compared to other scenarios cannot be taken as evidence of an aversion to the use of nuclear weapons per se, because we do not know whether the public would be more approving of a conventional strike that also killed 25,000 civilians.

¹⁶ Some may also question the ability of our fictional news stories to elicit visceral "taboo-like" reactions given the hypothetical nature of the scenario or the medium of an online survey. To examine this, we asked subjects to consider three situations that might elicit these reactions: the U.S. use of nuclear weapons in the story they read, the U.S. attacks on Hiroshima/Nagasaki, and the idea of a neighbor eating dog meat. For each situation subjects were asked, "When thinking about [this situation], which of the following would best describe your reaction?" Subjects selected from "unnecessary," "unwise," "disgusting," "reasonable," "immoral," and "none of the above." Nearly 40% of respondents responded to the idea of a neighbor eating dog meat as "disgusting," confirming that we could trigger disgust among respondents. In contrast, only 5% used the word "disgusting" to describe the U.S. use of nuclear weapons in the story they read or for the atomic bomb attacks on Hiroshima and Nagasaki (and only 6% called them immoral). By far the most common reaction to those scenarios was to describe the attacks as "reasonable."

refute the important role of norms in shaping human behavior. Indeed evidence of the influence of norms is everywhere. Most Americans cannot imagine eating insects or dog meat, and most devout Hindus cannot imagine eating beef. Most people do not contemplate murder, even if killing someone might be in their interest and even if they could be assured they would get away with it. But adherence to even these powerful norms erodes in extremis. Starving people eat dogs and insects or even resort to cannibalism. Even peaceful people will kill to protect their family.

The notion that norms may break down in extreme circumstances is well known, but it has not been adequately appreciated in the international relations literature, in part because measuring the strength of most norms is so difficult. But the possibility that even seemingly powerful norms may break down is not limited to nuclear weapons. Before World War II, many leaders in the United States and Britain decried the bombing of civilian populations. In September 1939, President Roosevelt issued a plea to all parties to the war to stop the bombing of civilian populations that “has sickened the hearts of every civilized man and woman, and has profoundly shocked the conscience of humanity” (Crane 1993, 32). A poll taken just over two years later on December 10, 1941, however, found that 67 % of Americans favored “unqualified and indiscriminant bombing of Japanese cities,” and Roosevelt would soon order the devastating strategic bombing campaign against Japan that killed up to 900,000 people, almost all of them civilians (Sherry 1987, 314).

Similarly, the norm against torture in the United States eroded after the September 11 attacks. Many scholars have noted that torture is widely considered illegal and immoral, and some have considered the prohibition to be strong enough to be called a taboo (Luban 2005; Tannenwald 2007, 16). Henry Shue wrote in 1978 that “torture is indeed contrary to every relevant international law, including the laws of war. No other practice except slavery is so universally and unanimously condemned in law and human convention” (Shue 1978, 124). Steven Pinker argued in 2011 that “another brake on sadism is a cultural taboo: the conviction that deliberate infliction of pain is not a thinkable option. . . . [T]oday the infliction of torture by governments is almost entirely clandestine, showing that the taboo is widely acknowledged—though like most taboos, it is at times hypocritically flouted” (Pinker 2011, 552).

Shue, however, later presented the clearest explanation of the weakness of the norm against torture: “Torture is wrong. But sometimes we feel justified in doing what we know is wrong because the stakes are so very high” (Shue 2006, 231). After the shock of 9/11, a plurality of the public and elites supported some forms of torture as useful and necessary, and therefore appropriate, for intelligence gathering. In October 2005, a Pew Research Center poll on the use of torture against suspected terrorists found that 46% of the U.S. public felt that torture was “often” or “sometimes” justified, 17% felt it was “rarely” justified, and only 32% said it was “never” justified (Carney 2006).

Opposition to torture has continued after 9/11, but it has been less effective than before. Some of the opposition has been based on moral grounds, conforming to the belief that such actions are simply wrong. But consistent with our findings, much of the public debate has revolved around questions of utility and consequences, with some scholars and policy makers basing their opposition to torture on evidence that it produces false confessions and faulty intelligence (Costanzo and Gerrity 2009; McKeown 2009; Soufan 2011) and others arguing that if the United States tortures terrorist suspects, it will set a precedent for enemies to torture U.S. soldiers (Powell 2002; Taft 2002). Others explain their opposition to U.S. practices as stemming from all three motives: moral opposition to cruel punishment, lack of utilitarian effectiveness, and the fear of setting precedents (McCain 2011). We have found no polling or experimental survey data, however, that can be used to measure the strength of these different reasons for opposing the use of torture.

Like the norms against counter-civilian bombing and torture, the tradition of the non-use of nuclear weapons may be overturned under extreme, yet plausible, circumstances. If nuclear weapons spread to more countries around the world, the circumstances in which using nuclear weapons might offer substantial military advantages may proliferate as well. Suspected nuclear proliferators have strong incentives to place weapons facilities in hardened tunnels, bunkers, or caves, which makes them less vulnerable to conventional attacks, as North Korea and Iran have already done (National Security Archive 2012). In addition, the fear that weapons of mass destruction could fall into the hands of groups such as Al Qaeda—the very kinds of scenarios we examined in this study—may create greater incentives for the United States to use these weapons than in the past. These new situations may present American policy makers and the public with the kind of choices they rarely had to face thus far in the nuclear age. The perceived military advantages of nuclear weapons could be even greater for other nuclear-armed countries, especially those with more limited conventional military capabilities (Lieber and Press 2009).

Our findings also suggest one particularly important direction for future research. It would be valuable to determine whether the patterns identified in this study are limited to the U.S. public or reflect global characteristics of mass opinion. Perhaps the normative aversion to using nuclear weapons is stronger in other nuclear powers. International polling on atomic attitudes is extremely limited, but does suggest that public support for nuclear weapons use varies widely between countries. According to a 2007 poll, for example, only 9.6% of Italians, 11.7% of Germans, 15.0% of the French, and 16.9% of the British public agreed that the use of nuclear weapons would ever be justified in a war, compared to 24.9% of Americans and 34.9% of Israelis (Angus Reid 2007). A 2006 poll also found that 22% of the Indian public agreed that “India should never use nuclear weapons under any circumstances” and 42% agreed that “India should only use nuclear weapons in

response to a nuclear attack” (Chicago Council 2006). As we noted earlier, however, because these polls did not provide subjects with the details about the costs and benefits of using nuclear weapons, it is difficult to determine how robust these findings are and it is impossible to isolate the reasons for the variations across countries.

It is essential to understand whether taboos or traditions of non-use are present in all nuclear weapons states because the international community’s response after an initial nuclear attack by any state may play a critical role in determining whether other states will be more likely to use nuclear weapons in the future. Traditions are more fragile than taboos. If the atomic aversion were taboo-like, then a violation would likely trigger revulsion, not emulation. But if the norm is a tradition, then one violation may reduce all actors’ confidence that others will continue to abide by the tradition—thereby reducing the chances they will forego short-term gains from using nuclear weapons because the long-term payoff from cooperation is less likely. The self-reinforcing dynamic that strengthens traditions when everyone follows them, weakens them when people observe others defecting. Our findings about the importance of utility calculations suggest that, if nuclear weapons are used, the durability of the tradition of non-use would likely hinge on whether the state that uses nuclear weapons first is perceived to have benefited or suffered from its action.

Perhaps the biggest surprise in our findings is that U.S. public support for the first use of nuclear weapons appears to have changed far less than most observers have assumed since 1945 when polls on the bombing of Hiroshima and Nagasaki found that more than 20% of Americans advocated dropping more bombs on Japan before it could surrender. Today, almost 20% of the public favors using nuclear weapons even in situations in which nuclear weapons provide no military advantage over conventional options. Majorities approve of the first use of U.S. nuclear weapons if they are told that such options are militarily advantageous, even at the costs of killing many innocent foreign civilians. Michael Walzer has proclaimed the “triumph of just war theory” in recent decades (Walzer 2004). He may be correct in that this ethical framework has become widely used by academic theorists, U.S. and allied military lawyers, and at least some political leaders, including Barack Obama in his 2009 Nobel Peace Prize speech (Obama 2009). But among the majority of the American public, the first use of nuclear weapons seems to be readily supported in multiple settings, including some not easily defensible under just war theory.

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