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Precision Weapons, Civilian Casualties, and Support for the Use of Force

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Precision weapons such as drones have become important elements of the military strategies of the United States and other countries. How does the use of precision weapons influence public support for the use of force? The public is averse to casualties, mission failure, and collateral damage. I argue that precision weapons increase the salience and importance of avoiding civilian harm. Individuals adopt their expectations about the outcomes of using these weapons and have lower tolerance for attacks that result in civilian deaths. This proposition is consistent with the results of two survey experiments. In the first, the possibility of civilian casualties leads to larger declines in support for the use of force than do military casualties or mission failure. In the second, respondents primed with information about an attack with precision weapons exhibited less tolerance for civilian harm than those primed with other weapons systems, despite the fact that the outcomes described to all respondents were identical.

KEY WORDS: counterfactual reasoning, norm theory, military force, precision weapons, technology

Using force involves trade-offs between protecting military personnel, hitting the desired target, and not hitting anything else. Until recently, few weapons systems could avoid these trade-offs. Consider air power. World War II-era bombers placed flight crews at great risk, were not very good at directing bombs to their target, and frequently caused enormous collateral damage. Subsequent technological developments have made the trade-offs between these goals less stark. Precision-guided munitions allow for quite specific targets to be attacked while avoiding harm to nearby structures and people (Gillespie, 2006). But most of these weapons still require a manned aircraft to deliver them to the target and thus risk the lives of their crews. The United States and other countries are now developing new technologies that permit precision attacks on targets, while also removing military personnel from immediate danger. The best example of such weapons systems is the drone, unmanned aerial vehicles with sensors that can detect and monitor targets and armed with small guided missiles. How does the use of such precision weapons influence public attitudes towards the use of force?

From the perspective of political and military leaders who must secure domestic acquiescence for their decisions to use force, precision weapons must look like a free lunch. Drone enthusiasts, for example, argue that the technology has the promise of eliminating risks to military personnel, accurately destroy their intended targets, and doing less collateral damage (Brown, 2007). Indeed, on average two-thirds of Americans approve of drone strikes against terrorists or insurgents, while a quarter or less express disapproval. The American public believes that drone strikes succeed in

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achieving their objectives. Three-quarters of respondents in one poll described drone strikes in Pakistan and Yemen as very or somewhat effective at “reducing the threat of terrorism against the United States” (Zenko, 2013).

In contrast to this narrative, some speculate that the use of precision weapons will increase the salience of *civilian* casualties. Beier (2003) holds that the development of precision weapons will create pressure to observe international norms governing protection of civilian populations. While the development of heavy bombers in the 1930s and 1940s, for example, made it very tempting for states to engage in indiscriminate bombing of population centers,

> [t]he possibility of carrying out discriminating attacks on bona fide military targets without causing “collateral damage” has led to a burgeoning popular expectation that non-combatants and critical civilian infrastructure—homes, hospitals, schools, and so forth—ought not to be imperiled. Instead, so-called “surgical strikes” should be carried out with a view to isolating enemy forces and installations, destroying them and them alone even if they happen to be situated in the heart of a crowded city. (Beier, 2003, p. 413)

Consistent with this conjecture, opinions about drone strikes, which are the most salient example of precision weapons in the public mind, reflect serious concerns about harm to civilians. In the one survey that asked about civilian deaths, 53% of respondents said they were “very concerned” about this issue; even among supporters of drone strikes, 42% were very concerned. These figures were considerably higher than other potential costs of drone strikes; 32% worried about retaliation by terrorists, 31% that the attacks were legal, and 26% that they would harm the United States’ international reputation (Pew Research Center, 2013).

What might explain this sensitivity to civilian harm when precision weapons are utilized? Drawing on insights from psychology about “counterfactual thinking,” I theorize that the very precision of these weapons raises expectations about the results that will obtain when they are used. The public wishes to avoid civilian casualties if this is possible. Precision weapons make it easier to achieve this objective, and the public adjusts its expectations with this in mind. This suggests that civilian casualties should reduce support for the use of force when precision weapons are available and that attacks with such weapons that result in civilian casualties should result in heightened concern about such deaths compared to similar attacks using nonprecision weapons or attack platforms armed with precision weapons that place military personnel at risk.

The available public-opinion data asks respondents only if they support the use of precision weapons such as drones and provides little leverage on the question of *why* they do so. To tackle this, I conducted two survey experiments of convenience panels of respondents in the United States. In experiment 1, each respondent was randomly assigned to read a hypothetical news story about planned military strikes on terrorist training camps in Yemen. Treatments varied the likely consequences of these strikes in terms of military casualties, the likelihood of success, and civilian harm. All three of these factors reduce support for the use of force. Respondents are more willing to use force when members of the military are not at risk. The reduction in support when a mission is described as unlikely to succeed is considerably smaller than the reduction we see when U.S. military casualties are introduced. This means that a greater fraction of respondents are willing to risk a mission that is described as likely to fail if military personnel are not at risk. Both of these factors mean that support for the use of force is likely to increase when precision weapons are employed. Consistent with the propositions developed here, the largest reduction in the willingness to support the use of force occurs when the attack produces civilian casualties. A second experiment directly tests propositions derived from the logic of counterfactual thinking about how precision weaponry makes individuals more sensitive to civilian harm. Respondents primed to expect fewer civilian casualties expressed more regret, more sympathy with victims’ families, and less satisfaction than did those primed with a higher risk of civilian deaths, despite the fact that the actual outcomes across treatments were identical. This effect weakens when precision strikes are carried out by manned platforms.

The article first draws on extant research to develop hypotheses about how precision weapons may alter the public's willingness to support the use of force. The subsequent section draws on the psychology literature on counterfactual thinking to suggest that individuals are more sensitive to civilian casualties in particular when precision weapons are employed. Following this is a description of the design and results of the two experiments. The conclusion outlines areas of future research and suggests that while precision weapons may make it easier for political leaders to use force because they eliminate the possibility of military casualties, they may replace this constraint with heightened concerns about the consequences of the use of force for noncombatants.

Precision Weapons and Support for the Use of Force

How might precision weapons influence public attitudes? We can draw on the large literature on public support for the use of force to develop answers to this question.

Support for the use of force declines when military casualties are incurred (Baum & Groeling, 2010; Gartner, 2008; Mueller, 1973). Precision weapons allow the use force while reducing the risks that military personnel face. Peter Singer (2012), whose work has done much to highlight the political implications of new military technologies, writes that:

> The strongest appeal of unmanned systems is that we don't have to send someone's son or daughter into harm's way. But when politicians can avoid the political consequences of the condolence letter—and the impact that military casualties have on voters and on the news media—they no longer treat the previously weighty matters of war and peace the same way.

The absence of military casualties may lead, as Singer suggests, to more public support for the use of precision weapons than for attacks that risk military casualties. If such casualty aversion reduces support for the use of force, then drone technology creates a politically easy way to strike overseas. A straightforward hypothesis drawn from this literature, then, is:

> *H1*: The public will express greater support for military missions in which there is no risk of military casualties because precision weapons are employed compared to missions where such casualties may occur.

Another body of research finds that Americans are more likely to support the use of force when they believe the military operation will be successful (Eichenberg, 2005; Gelpi, Feaver, & Reifler, 2009). Can this conclusion be extended to the use of precision weapons? On the one hand, the public may recognize that attacks that rely on precision weapons, like any military mission, may fail to achieve their objectives. If this is the case, such failure should reduce support for the use of force as it would for any other type of attack. But the characteristics of precision weapons may make the risk of mission failure less salient to the public. In particular, the lower likelihood of military casualties may make individuals willing to support attacks with precision weapons even if their likelihood of achieving their objective is low. A similar calculus may apply to other potential costs of using force that are lower when precision weapons are employed, such as the possibility of civilian casualties. This suggests that:

> *H2*: When precision weapons are employed, the likelihood of success will exert little influence on support for the use of force.

Precision Weapons, Civilian Casualties, and Support for the Use of Force

What effect might the deaths of foreign civilians from attacks with precision weapons have on the support for the use of force? Existing research does not provide the straightforward answers that work on military casualties and success does. Much less attention has been devoted to analyzing if and how civilian deaths influence support for the use of force. Some systematic studies of the issue find that the deaths of noncombatants exercise little effect on American public opinion. Mueller's (2000) review of aggregate polling data from the World War II through the 1990s leads him to conclude that the American public is not much influenced by such casualties. Tirman's (2011) historical analysis reaches a similar conclusion.

Other work, though, indicates that civilian casualties might influence public attitudes under certain conditions. Eichenberg (2005) found that survey questions mentioning civilian casualties led to a reduction in support for the use of force. The size of the effect of civilian casualties was similar in size to that of military casualties and as large as many of the "principal policy objectives" such as foreign policy restraint and humanitarian intervention that Eichenberg stresses. Larson and Savych (2006) suggest one explanation for this finding. Their study also finds that Americans attach considerable importance to avoiding civilian casualties. They conclude, though, that the actual effects of civilian casualties on support for the use of force is rather small. The reason is that Americans also have high confidence in the military's ability and desire to prevent such casualties. A large share of Americans, they argue, are confident that the military takes reasonable steps to minimize civilian deaths and that any resulting casualties are most likely the result of unavoidable accidents or opponents' deliberate attempts to create such casualties by positioning military targets near noncombatants.

In this section, I push this understanding of the influence of civilian casualties one step further, arguing that many people may exhibit *more* concern about civilian harm when precision weapons are employed. At first glance, this position may seem counterintuitive. Precision weapons should, on average, produce outcomes in terms of civilian casualties that are at least as good, and frequently superior, compared to those resulting from the use of nonprecision weapons.

A particularly important characteristic of precision weapons is that they sharply reduce the likelihood of military casualties. For some precision weapons, such as drones, the likelihood of military casualties falls to zero. As discussed above, the absence of military casualties by itself should increase support for the use of force. But research in cognitive psychology suggests good reasons to think that civilian casualties will reduce such support when combined with knowledge that military casualties cannot occur. Individuals tend to weigh positive and negative information asymmetrically. Negative information such as civilian casualties is viewed as more informative and exerts a greater influence over judgments than does positive information, such as absence of military casualties. When negative information (such as the possibility of civilian casualties) is presented alongside positive information (such as the impossibility of military casualties), the negative information exerts a larger influence on attitudes (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Rozin & Royzman, 2001). This negativity bias is consistent with prospect theory's principle of loss aversion, which holds that individuals have a stronger preference for avoiding losses than they do for acquiring gains (Kahneman & Tversky, 1979). This suggests that civilian casualties combined with no military casualties will push individuals to place a greater weight on the loss represented by the former than the gain represented by the latter outcome.

Negativity bias and loss aversion influence not only how individuals process information about civilian casualties when military casualties cannot occur but also how the media covers both types of deaths. The likely size of military casualties is a major element of war reporting. But coverage of attacks by drones and other precision weapons that do not risk military casualties frees up space in the media "news hole." One response of media outlets is to use this space to cover other consequences of precision strikes. Civilian casualties are likely to interest the media because they have many of the characteristics that communications research on "news values" identify as producing more media attention, including the fact that they involve conflict, occur unexpectedly, and can be attributed to specific actors (Galtung & Ruge, 1965; Harcup & O'Neill, 2001). Media outlets report on issues that are consistent with news values in part because their customers, influenced by their own negativity bias and loss aversion, are particularly drawn to such topics. And we know that the American public is interested in the issue of civilian casualties. When asked in a 1998 poll to list the considerations that are most important in their decisions to support or oppose the use of force, 79% of respondents identified civilian casualties. This was only slightly fewer than the 86% that identified American casualties as influencing their decisions (Larson & Savych, 2006).

There is some evidence that military interventions unlikely to produce military casualties attracted more coverage of the issue of civilian casualties. Larson and Savych (2006, p. 206) counted the number of times civilian casualties were mentioned in major American news outlets during six conflicts involving American forces since the end of the cold war (the Gulf War, interventions in Somalia, Bosnia, Kosovo, and invasions of Afghanistan and Iraq). By a small margin, the largest number of mentions occurred during the Kosovo campaign, followed by the invasions of Afghanistan and Iraq. This is remarkable because the Kosovo campaign involved far fewer military assets and presented a much less direct threat to the United States. One element that distinguished the Kosovo campaign from the remaining conflicts is that it did not involve any American ground troops. Combined with the fact that American warplanes were not permitted to operate at altitudes that exposed them to antiaircraft fire, this limited the possibility of military casualties in this conflict and appears to have pushed media outlets to devote more attention to civilian casualties. One consequence of this influence of negativity bias and consequent changes in media attention is that:

> *H3*: Civilian casualties will reduce support for the use of force when precision weapons that produce no military casualties are employed.

Heightened concern about noncombatant casualties is also a direct consequence of these weapons' precision. Drones, for example, are perceived by many as extraordinarily precise in their ability to identify and destroy a target while minimizing harm to nearby people and structures. As hypothesized earlier, this precision makes individuals more likely to support the use of force. But this precision also raises expectations: individuals are less tolerant of paying costs that might have been avoided as military technology becomes more precise. As Sapolsky and Shapiro (1996) noted some time ago, there are "ratchets in our war experience" (p. 123); the successful use of precision weaponry in a conflict today creates the expectation that the same degree of success will be achieved in tomorrow's wars.

I develop an explanation for this ratchet effect that applies insights from the study of counterfactual thinking. In psychology, the key work is Kahneman and Tversky (1982), who introduced the idea that counterfactuals can be integrated with the study of judgment and decision making. In this tradition, counterfactuals are conditional propositions with an antecedent and a consequence, where the antecedent is the action or decision of an individual or group, and the consequence is the outcome that results from this action. Counterfactual thinking involves a mental modification to the antecedent and then imagining how this modification would alter the consequence. Upward counterfactuals, which are most relevant here, occur when the outcome is judged to be inferior to what would have obtained if the imagined alternative to the antecedent had been chosen (Byrne, 2005; Roese, 1997). An example of an upward counterfactual is: "if the drone strike had not been authorized, the civilians would not have been killed."

Upward counterfactuals have been shown to influence emotions and judgments. For example, they drive feelings of regret, defined as the recognition that a different antecedent action would have resulted in a superior outcome (Miller & Taylor, 1995). Subjects are willing to provide more compensation to victims of crime and negligence when an upward counterfactual is mentally available to them (Alicke, Buckingham, Zell, & Davis, 2008; Miller & McFarland, 1986). These effects are the consequence of two mechanisms, contrast effects and causal inference effects. Contrast effects arise “when a judgment is made more extreme via the juxtaposition of some anchor or standard” (Roese, 1997, p. 19). This is nicely illustrated by Medvec, Madey, and Gilovich’s (1995) study of Olympic athletes. They found that athletes winning Silver medals were less satisfied than those awarded Bronze metals. Silver-medal winners generated upward counterfactuals, comparing their outcome with winning a Gold medal, while Bronze medal winners thought in terms of downward counterfactuals, contrasting their metal with the outcome of no medal. The reference value that an individual uses to evaluate an outcome, then, has a decisive influence on the affect and judgments produced by counterfactual thinking (Kahneman & Miller, 1986). Casual inference effects occur when the imagined counterfactual is identical to the facts except for the action in the antecedent. This means that, in the mind of the individual, the antecedent action is the cause of the outcome. The practice of contrasting an otherwise identical counterfactual with the actual decisions and events and outcome highlights the causal link between the action and the outcome. Causal inferences are more likely when the antecedent is more “mutable” or subject to change. It is more difficult to imagine changing immutable causes, such as gravity. Actions and decisions, in contrast, are often perceived as more mutable, since in many cases it is possible to imagine that a different action had been chosen.

Based on this reasoning, I hypothesize that:

> *H4*: Compared to otherwise identical attacks with nonprecision weapons, attacks with precision weapons that result in civilian casualties produce less satisfaction, more regret, and more sympathy with the victims.

The contrast effect and causal inference effect contribute to this difference. Precision weapons are, by their nature, framed as less likely to produce undesirable outcomes. The political and military leaders that develop and deploy precision weapons justify them, in part, because they are more likely to produce desirable outcomes (such as killing the enemy) and less likely to result in undesirable consequences (such as killing civilians). The reference value for civilian casualties that individuals adopt for precision weapons should be lower than that for nonprecision weapons. If civilian casualties do result from an attack, the contrast between the reference value and the outcome will be greater when precision weapons are employed, leading to stronger affective and cognitive responses.

A second relevant feature of precision weapons is their tight integration of intelligence with targeting and attack decisions. This integration is one of the factors that makes such weapons so precise and contributes to the contrast effect. It also means that the decision to launch an attack is more mutable. Decision makers, such as military personnel controlling the weapon or political and military leaders who authorize its use, have more, higher-quality, and more up-to-date information about the target. This means that it is easier to imagine that intelligence could have been available that would have led to the calling off of an attack that results in civilian harm. Contrasting an old-fashioned “gravity” bomb with a guided missile fired from a drone illustrates this effect. It is not difficult to imagine many factors, some of which are not particularly mutable, preventing a gravity bomb from hitting its target—wind, the inability to view the target due to weather, or human errors in making the complex calculation of when and where to release the weapon. In the case of an attack from a precision-weapon platform such as a drone, imagining a different and better outcome is considerably easier. The weapon controllers are able to monitor the target in real time with video and other surveillance technologies impervious to cloud cover, can rely on software the guide the missile to a specific point, and can call off an attack if a civilian wanders into the target area.

Gelpi et al.'s (2009) focus is on the role of success, but they hypothesize that "the American public views civilian casualties much the same way they view military casualties—as a necessary evil to be minimized, but tolerable under the right conditions" (p. 255). Their project included a survey experiment that compared the effects of military and civilian casualties in a hypothetical war with North Korea. Civilian casualties reduced support for the war about as much as did U.S. military casualties. Furthermore, a majority agreed that military planners should limit harm to foreign civilians even if this placed American military personnel in greater danger. Most importantly for our purposes, their survey experiment directly asked respondents to rate the importance of limiting American military casualties compared to civilian casualties. Most respondents stated that the former goal was more important. This suggests a refinement to the previous hypothesis:

> *H5*: The effects of civilian casualties caused by attacks with precision weapons on satisfaction, regret, and sympathy will be attenuated when these weapons place military personnel at risk of harm.

The logic of Hypothesis 5 is that respondents would prefer to avoid both civilian and military casualties. When it is impossible to guarantee this outcome, the possibility of military casualties makes them somewhat more willing to tolerate civilian casualties.

In sum, individuals' assessments of an attack with precision weapons that may cause harm to civilians are shaped by three factors. The first is attention; since precision weapons minimize the chance of military casualties and mission failure, they draw attention to other negative outcomes such as civilian casualties. Second, attitudes are influenced by the difference between the reference point individuals adopt and the outcome. Negative differences lead to more negative assessments. This means that assessments of an attack with the same outcome can differ across individuals who begin with different reference points. These reference points, in turn, are shaped by how precise a weapon is depicted by opinion leaders such as the media. Finally, this effect is blunted when military personnel are placed at risk.

Experiment 1: Military Casualties, Success, and Civilian Casualties

I use a survey experiment to assess Hypotheses 1, 2, and 3 regarding the relative influence of military casualties, mission success, and civilian casualties on support for the use of force. The experiment was conducted in May 2012 among respondents over the age of 18 located in the United States. Respondents were randomly assigned to first read a hypothetical news story describing plans by the United States to launch military attacks on suspected al Qaeda terrorist locations in Yemen and then completed a short questionnaire. Embedded in the news stories are three variables, each of which can take one of two values (see appendix A in the supplemental information for the text of the news stories). The first element was the occurrence of U.S. military casualties. The attacks were described as either armed raids, in which about 25 American military personnel were expected to be killed, or a series of drone strikes that would result in no U.S. casualties. The second element was the likely outcome of the attack. Following Gelpi et al. (2009), the Joint Chiefs of Staff are described as confident or not confident that the attack will achieve its objectives. The third manipulation concerns the likelihood of civilian casualties. The news story states that the terrorist bases are in "remote areas of the country" and that the Joint Chiefs conclude that "no innocent civilians will be harmed by these attacks" or that the bases are in farming villages and that the Joint Chiefs conclude "that these attacks would kill innocent civilians with no connection to al Qaeda."

All respondents then completed the same questionnaire items. The first asked respondents if they strongly approve, somewhat approve, somewhat disapprove, or strongly disapprove of the attack plan. Answers to this question serve as the dependent variables in the analysis below. Following items used a standard bank of questions to ascertain the respondent's degree of authoritarianism and political knowledge. The survey instrument then asked how confident the respondent is in the U.S. military and if the respondent or a member of the respondent's family had ever served in the U.S. military or military reserves. These questions evaluate Larson and Savych's (2006) contention that civilian casualties do not reduce the American public's support for the use of force because respondents have faith that the U.S. military takes careful efforts to minimize the likelihood and number of civilian deaths. Subsequent questions measured the respondents' partisanship, political ideology, gender, racial and ethnic background, level of education, age, and family income.

The survey instrument was administered online. Respondents were recruited through Amazon's Mechanical Turk online labor market. Appendix B in the online supplemental materials provides details of survey administration. Comparable demographic data from the respondents in this experiment are summarized in Appendix B, Table B1. The demographic profile of respondents for this experiment is very similar to those that Berinsky, Huber, and Lenz (2012) report.

Figure 1 depicts the mean level of support for the eight experimental treatments and 95% confidence intervals. The baseline treatment—where the news story describes a successful attack that kills no military personnel or civilians—receives the highest level of support. This is not surprising, since it imposes no costs in terms of U.S. or foreign casualties and results in a successful military mission. The remaining treatments all lead to statistically significant reductions in support compared to this baseline. The smallest such reduction is introduced when the mission is described as unlikely to succeed. Perceptions of success do moderate support for the use of force (Gelpi et al., 2009). The likelihood that the mission will succeed still matters even when U.S. military casualties cannot occur. However, the fact that this effect is smaller than that of U.S. military or civilian casualties suggests

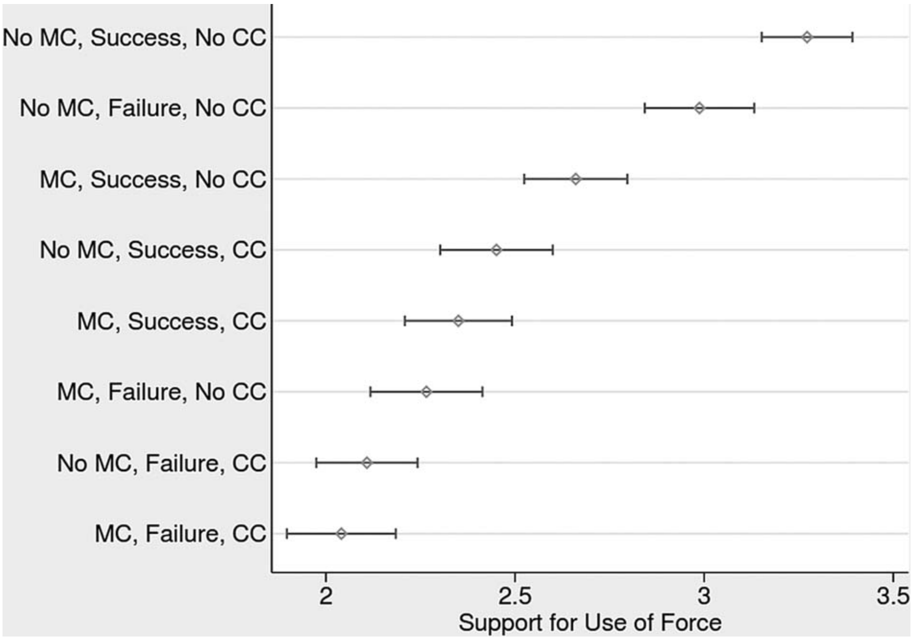

Figure 1. Support for use of force by experimental condition. Support ranges from 4 (strongly approve) to 1 (strongly disapprove). MC indicates treatment describes military casualties; CC indicates treatment describes civilian casualties. Horizontal bars indicate 95% confidence intervals. Sample sizes for each treatment group are: No MC, Success, No CC, (n = 158); No MC, Failure, No CC (n = 153); MC, Success, No CC (n = 162); No MC, Success, CC (n = 157); MC, Success, CC (n = 157); No MC, Failure, CC (n = 166); MC, Failure, No CC (n = 143); MC, Failure, CC (n = 147).

that there is willingness among some respondents to risk deadly force even when it has a high chance of failing.

The treatment introducing military casualties also leads to a lower level of support for the use of force. The chance to avoid military casualties by using unmanned precision weapons rather than soldiers produces a noticeable increase in willingness to use force. This decline is larger than that for the treatment discussed above that defined the attack as less likely to succeed, and the difference between these two treatments is statistically significant. The possibility of U.S. military casualties, then, reduces support for the use of force more than does the possibility of mission failure. Note as well that the number of U.S. military casualties—25—introduced in this treatment is quite small. Other survey experiments that manipulate the number of military casualties typically include much larger numbers. This means that even a few military casualties reduces support. As precision weapons that allow the projection of force over long distances are further developed, this may result in a greater willingness to use force than is currently the case.

Finally, the possibility of civilian casualties leads to the largest drop in mean support compared to be baseline treatment. We know from earlier research that the public wishes to avoid civilian casualties, so it is not too surprising that the possibility of such casualties reduces support for the use of force compared to situations where such casualties are absent. More interesting is that the difference from the baseline treatment is larger than for the treatments introducing mission failure and American military casualties and that these differences are statistically significant ($p = .02$ for the difference between military and civilian casualties and $p < .01$ for the difference between mission failure and civilian casualties). This means that, in this experiment, civilian casualties from a drone strike creates the largest decline in the willingness to support the use of force. Note that even in this treatment, the respondents are evenly split about the wisdom of the attack. Even in the case that produces the lowest level of support for the use of force, a sizable number of the respondents will favor this course of action. This is consistent with the finding that the public is more willing to risk the use of force for counterterrorism goals than it is for other goals, such as humanitarian assistance (see Gelpi et al. [2009] for this specific finding about counterterrorism, and Jentleson [1992] for how principal policy objective influences public support for the use of force).[1]

Figure 1 also summarizes how support changes when more than one factor is included in the news story respondents read. When the attack was described as unlikely to succeed, introducing civilian casualties, military casualties, or both results in further, statistically significant declines in support for the use of force. The addition of civilian casualties or a low likelihood of mission success or both further reduce the mean value of the dependent variable when combined with military casualties. But this is not the case when comparing the treatments in which civilian casualties are expected. Adding military casualties or low success does not lead to statistically different levels of support for the use of force, although the addition of both factors does. When the mission is unlikely to succeed or the United States will incur casualties, providing additional information that civilians will also be killed further reduces support. But the opposite is not the case—once respondents learn that civilian casualties are likely, reading about U.S. casualties or the likelihood of mission failure do not alone alter their preferences. Civilian casualties, then, appear to have the largest single influence on support for the use of force among the treatments introduced here, and this effect is less heavily influenced by other negative information.

The results of this survey experiment are consistent with Hypotheses 1, 2, and 3. Support declines when the attack is expected to produce military casualties, to fail, or to result in civilian harm. Of these findings, the last is the most noteworthy. Civilian casualties have the largest effect on

[1] These conclusions are unchanged when the data is analyzed with logistic regression models that include control variables; see appendix C for details. In results not reported here, I also interacted each condition with levels of political knowledge, party identification, and degree of authoritarianism. Results were not conditional on these individual characteristics.

support for the use of force. This differs from work which concludes that Americans are not much concerned about harm to foreign civilians (Mueller, 2000; Tirman, 2011). Instead, it is more consistent with earlier work that has found that the public does exhibit some concern about civilian harm (Eichenberg, 2005). This specific result should not be overemphasized. As Gelpi et al. (2009) point out, the public may be more likely to express disapproval in hypothetical situations than in response to actual attacks by the United States. Nonetheless, civilian casualties lead to such a sizable reduction in support, particularly because the threat of harm to the United States is quite direct in these treatments, which would lead us to expect that respondents might be most willing to tolerate civilian casualties in order to eliminate the terrorist training camps. I have suggested that this is the case because, in the situations involving the use of force similar to that described in the experimental treatments, the public has high expectations that precision weapons will be able to avoid killing the wrong people. The following experiment tests this causal mechanism directly.

Experiment 2: Precision Weapons and Counterfactual Thinking

To assess Hypotheses 3, 4, and 5, I conducted a second survey experiment in the summer of 2013, again with respondents recruited via Mechanical Turk. After collecting information about their demographic characteristics, political attitudes, and political attention, respondents were randomly assigned to read one of four hypothetical news stories (the text of which can be found in online appendix A; survey administration details and summary statistics for demographic characteristics are in online appendix B). All four described a planned attack by the U.S. military on the hide-outs of militants groups in Pakistan that had attacked American troops in Afghanistan. These hide-outs were described as located near civilian residences. The vignettes stated that civilian casualties were one possible outcome of the planned attack. The treatments varied the military technology that would be used in the attack, as well as the assessment of military experts regarding the likelihood of civilian casualties. In the "high precision, unmanned" treatment, the attack was described as being carried out by a drone equipped with video surveillance that allowed the attacks to be launched when civilians were not nearby and using highly accurate missiles that would minimize the risk of civilian casualties. The vignette also stated that in 2012, only 3% of those killed in similar drone strikes were civilians. This number is drawn from the estimates of the Bureau of Investigative Journalism, which carefully tracks drone strikes and civilian casualties (Woods, Serle, & Ross, 2013). This information was intended to provide respondents with a low reference value regarding the likelihood of civilian harm. The "high precision, manned" attack was identical to this first treatment but described the attacks as conducted from piloted aircraft. This treatment stated explicitly that the militants lacked weapons capable of firing on the attack aircraft, meaning that the crews were not at risk of harm from the enemy. Differences between these two treatments allow an assessment of Hypothesis 5, which states that the effects of civilian casualties should be attenuated when conducted with manned rather than unmanned platforms. This design creates a difficult test for Hypothesis 5, since respondents are explicitly told that the air crews cannot be attacked. Respondents must imagine some way in which the crews could experience harm, for example as a consequence of equipment malfunctions over hostile territory or the possibility that the militants have acquired weapons unknown to the United States that are capable of targeting the aircraft.

The "moderate precision" treatment described the attack as bombs dropped from aircraft. These aircraft would fly at high altitudes so that their crews would not be at risk from militant fire and would drop bombs on the militants' hide-outs. These bomb attacks were described as possibly producing civilian casualties because of their larger blast size and the fact that the pilots could not easily determine if civilians were near the targets. In this treatment, experts stated that civilian casualties were "possible," and 35% of those killed in similar attacks in 2012 were described as civilians. Since the goal of this treatment was to prime respondents to imagine a much higher likelihood of civilian harm than those assigned to the high-precision treatment, I selected a number here that was an order of magnitude larger than in the high-precision treatment. Finally, the "low precision" treatment was identical to the moderate-precision treatment except that it stated that 50% of those killed in similar attacks were civilians. The third and fourth treatments assess Hypothesis 4, which states that differences in respondents' degree of sympathy and regret for civilian casualties should be lower than is the case for the unmanned, high-precision treatment.

Immediately after reading the vignette, respondents in all four treatment conditions were asked if they supported the plan to attack militant bases, their assessment of the likelihood of civilian casualties, and their level of satisfaction with the attack plan. All respondents were then informed that the attack was carried out, resulting in the death of the targeted militants as well as civilians. After learning this information, they were asked again the same question regarding their level of satisfaction with the attack plan. Respondents also indicated how surprised they were that the attack resulted in civilian casualties and how important they thought it was that the United States issue an apology for killing civilians. They were also told that in past conflicts, the United States has offered compensation to victims' families and asked them how much compensation should be offered in this case. Possible responses ranged from no compensation to $40,000 or more in increments of $5,000. Respondents were informed that the average amount suggested was $20,000.

Hypothesis 4, derived from the theory of counterfactual thinking, creates three expectations about how responses should differ across treatments, even though the outcome was identical for all respondents. First, those primed by the unmanned, high-precision treatment to expect fewer civilian casualties should be more sympathetic to the victims and favor higher levels of compensation to victims' families. This measure draws from Miller and McFarland (1986), who assessed how counterfactual thoughts accounted for sympathy with victims of violent crime but, following the subsequent work of Van Dijk and Zeelenberg (2005), uses a between subjects design with priming. Second, those assigned to the high-precision, unmanned treatment should be more willing to issue an apology, since doing so would indicate more regret for the outcome of the attack. Third, the degree to which their satisfaction with the attack plan changes from before to after they learn that civilian casualties have been inflicted should be larger for those in the high-precision treatment.

The top panel of Table 1 indicates the measurement scale and mean values for these variables across the four treatments.[2] Asterisks indicate if the mean values for the moderate- and low-precision treatments are statistically distinguishable from the mean value for the high-precision treatment. Respondents in the high-precision treatment preferred higher levels of compensation. These differences in means are not large—the mean value for the high-precision treatment is $30,000, while that for the other two treatments falls between the values of $25,000 and $30,000—but are statistically significant. Recall as well that, following Miller and McFarland (1986), respondents were "anchored" at a value of $20,000. This anchoring pulled many respondents' choices in the direction of this value, as it was the modal choice for respondents in all three treatments. There were no discernible differences between the treatments in the importance attached to issuing an apology. This is surprising; one might expect that those more willing to offer compensation would also be more willing to offer an apology. One possible explanation is that respondents viewed an apology as "cheap talk," and they were willing to support an apology but were unwilling to support large payments to victims' families, which impose a monetary cost on the government and also might suggest a greater degree of responsibility than verbal apology alone. The third measure, satisfaction change, is calculated by subtracting each respondent's level of satisfaction after learning the outcome of the attack from his or her response to the identical question asked before learning this outcome.

[2] Results reported here are unchanged when the data is analyzed with logistic regression models that include control variables; see Appendix C for details.

Table 1. Regret, Sympathy, and Civilian Casualties

Variable	Measurement	High Precision, Unmanned (n = 177)	Moderate Precision (n = 184)	Low Precision (n = 175)
Support for Attack	1 = Strongly approve, 4 = strongly disapprove	2.36	3.01*	3.14*
Estimate of Civilian Casualties	1 = Definitely, 6 = Very probably not	3.63	2.40*	1.97*
Surprise at Civilian Casualties	1 = Very surprised, 5 = Not at all surprised	3.83	4.42*	4.53*
Compensation	1 = No compensation, 9 = $40,000 or more	7.06	6.54*	6.46*
Apology	1 = Very important, 5 = Not at all important	1.87	1.98	2.06
Satisfaction Change	1 = Very satisfied, 5 = Very dissatisfied	−.63	.09*	.09*
Variable	**Measurement**	**High Precision, Manned (n = 195)**	**Moderate Precision (n = 184)**	**Low Precision (n = 175)**
Support for Attack	1 = Strongly approve, 4 = strongly disapprove	2.32	3.01*	3.14*
Estimate of Civilian Casualties	1 = Definitely, 6 = Very probably not	3.56	2.40*	1.97*
Surprise at Civilian Casualties	1 = Very surprised, 5 = Not at all surprised	3.90	4.42*	4.53*
Compensation	1 = No compensation, 9 = $40,000 or more	6.32	6.54	6.46
Apology	1 = Very important, 5 = Not at all important	1.79	1.98*	2.06*
Satisfaction Change	1 = Very satisfied, 5 = Very dissatisfied	−.59	.09*	.09*

*$p < .05$

We would expect that respondents primed to expect no civilian casualties would exhibit a negative value for this variable. This is the case, and these changes are significantly different from satisfaction change in the other two treatments.

Table 1 also reports mean differences for the remaining three variables which serve as manipulation checks assessing how effective the information provided to respondents was in influencing their attitudes. Respondents assigned to the high-precision treatment should be more willing to support the attack plan presented to them, since it risks no military personnel and presents a low risk of civilian casualties. These respondents should also provide lower estimates of the likelihood of civilian casualties and exhibit more surprise when informed that such casualties resulted from the attack. All three of these expectations are supported by the data. This suggests that the treatments were effective in shaping the ways that respondents thought about the value and consequences of the attacks. As important, it is experimental support for the supposition that the precision weapon technology shapes individuals' assessments of its desirability and likely consequences.

The bottom panel of Table 1 assesses Hypothesis 5 by comparing the high-precision, manned treatment with the moderate- and low-precision treatments. The mean values for the three manipulation checks are nearly identical to those for the unmanned precision treatment, suggesting that the experimental conditions produced similar reference points for respondents in both of these treatment groups. The fact that respondents in the high-precision manned treatment experience statistically significant declines in their satisfaction with the attack plan after learning that it produced civilian casualties indicates that they also experience regret over civilian casualties. Compared to the moderate- and low-precision treatments, respondents in the high-precision, manned treatment were more willing to offer an apology but were not willing to pay more compensation. This is the opposite of the pattern we see in the top panel of Table 1, and it is consistent with the logic of Hypothesis 5. Even the rather remote possibility of military casualties reduces respondents' willingness to make costly payments to compensate for civilian casualties. Instead, they are now more willing to offer a less costly apology. This suggests that respondents in this condition continue to feel some regret for civilian casualties but less than is the case when the precision weapon is an unmanned platform.

Conclusions

These experimental results are consistent with the proposition that the use of precision weapons makes individuals more sensitive to civilian casualties. Like most experiments of this nature, it is not possible to generalize the specific effect sizes to the population at large. The sample employed here is not representative of the adult population in the United States, and the treatments likely provide many respondents with more information, and lead them to think more intensively about it, than they would in more realistic settings, and the duration of any effects of the treatments on attitudes is uncertain (Barabas & Jerit, 2010). The primary purpose of this exercise, though, has been to establish the plausibility of, and the operation of the mechanisms behind, hypotheses relating precision weapons to concerns about civilian harm. Future work could establish if these relationships hold in more representative samples. There are also a number of ways that these findings could be extended. It would be valuable to see if similar results obtain among citizens of other countries that have employed precision weapons (such as Israel) as well as countries where this is not the case. In the present article, the "principal policy objective" of the use of force is countering terrorism. Varying the principal policy objective in which precision weapons are employed, as well as the number of expected civilian casualties, would usefully supplement the results reported here. In the experiments presented here, the targets of the strike are described as militant or terrorist groups that have targeted American civilians and military personnel. There is good reason to think that the identity of the target serves as a reference value for respondents and exercises an important influence on the willingness to use force. Mintz and Geva (1993), for example, find that subjects in democratic states are less willing to support the use of force against other democratic states. It is possible that targets such as these, which are the subject of considerable enmity by the American public, increased toleration for civilian casualties. Conversely, American respondents might be less willing to use force with precision weapons against targets who are American citizens or who are located in the United States, issues that have received considerable political attention recently. While varying the identity of the target is the beyond the scope of the work reported here, doing so could be an important value of future research. It would also be useful to disaggregate the concept of precision weapons further, for example, by considering how "autonomous" weapons that make decisions about the use of force without direct human input, or nonlethal precise weapons, modify the importance respondents attach to preventing harm to civilians. Currently there is a consensus among political elites in the United States that precision weapons such as drones are superior to other types of force. It is possible that continued use of precision weapons may lead to divisions along partisan lines over the wisdom of their use, which may lead to partisan differences over the importance of preventing civilian casualties.

Should the results reported here hold up to further scrutiny, they could have important implications for the use of force in the future by the United States and other countries. Many observers hold that future military interventions by the United States are likely to use a "light footprint" approach in which fewer ground troops are deployed and greater reliance is placed on precision weapons. From the perspective of political and military leaders, this approach has features that should make it easier to secure domestic political support for such interventions. If the public believes that precision weapons are far more accurate than other types of force, they may support interventions because they are more likely to be successful. The fact that such weapons lead to no military casualties could also increase support for the use of force. The results of experiment 1 are consistent with both of these propositions, suggesting that precision weapons give leaders more flexibility in choosing to intervene overseas. But the results of experiment 2 also indicate that precision weapons can have countervailing effects by making civilian casualties more salient and important to the public. Particularly interesting in this regard is the finding that the effects of counterfactual thinking is enhanced when unmanned precision weapons are employed, as this suggests that the use of such weapons will have an especially strong influence on concern about civilian casualties. In sum, precision weapons may not eliminate the constraints that military casualties place on decisions to use force, but instead they replace it with heightened concern about civilian deaths.

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Appendix

Experiment 1 Treatments

All Treatments: U.S. Military Plans Strike against Terrorist Bases in Yemen

Washington (AP)—Terrorists connected to Al Qaeda have established bases and training camps in the country of Yemen. Political turmoil has prevented the government of Yemen from acting against the terrorists. Recently the Yemen branch of al Qaeda attempted to bomb an American airliner and to mail bombs to the United States. American intelligence agencies have identified the location of the al Qaeda bases in Yemen.

No Military Casualties: The United States plans to launch attacks on these bases with missiles fired from unmanned drone aircraft to kill al Qaeda leaders and militants located in the bases. The use of unmanned drones means that no American military personnel would be placed at risk.

Military Casualties: The United States plans to attack these bases with small teams of Special Forces to kill al Qaeda leaders and militants located in the bases. The Joint Chiefs of Staff estimates that about 25 American soldiers would be killed in the raids.

Success: The Joint Chiefs of Staff has analyzed this attack plan. It is confident that this attack will succeed and make it very difficult for al Qaeda to attack the United States.

Failure: The Joint Chiefs of Staff has analyzed this attack plan. It is not confident that this attack will succeed, and believes that al Qaeda will still be able to launch terrorist attacks against the United States.

Civilian Casualties: The terrorist bases are located in farming villages. The Joint Chiefs of Staff concludes that these attacks would kill innocent civilians who have no connection to al Qaeda.

No Civilian Casualties: The terrorist bases are in remote areas of the country. The Joint Chiefs of Staff is concludes that no innocent civilians would be harmed by these attacks.

Experiment 2 Treatments

All Treatments: U.S. Military Plans Strike against Militant Hide-Outs

Militants have established hid-outs in the country of Pakistan. These militants have attacked American military forces based in neighboring Afghanistan.

American intelligence agencies have identified the location of the militants' hide-outs.

High precision/unmanned: The United States plans to launch attacks on these hide-outs with missiles fired from unmanned "drone" aircraft. The use of unmanned drones means that no American military personnel would be placed at risk.

All other treatments: The United States plans to launch attacks on these hide-outs with (**high precision, manned:** missiles fired/**Moderate and low precision:** bombs dropped) from airplanes. The militants do not have weapons capable of attacking these airplanes. This means that no Americans would be placed at risk.

The militants' hide-outs are in farming villages near the houses of civilians. These civilians have no connection to the militant group. It is possible that the drone strikes would accidentally kill civilians.

High precision, unmanned: But experts conclude the chance of killing civilians is very low. The drones are equipped with high-definition video cameras, so strikes can be launched when no civilians are nearby. The missiles fired by drones are small and accurate enough to be aimed at specific room in the hide-outs. This makes it less likely that civilians would be harmed. Recent drone strikes have resulted in very few civilian casualties. In 2012, for example, only 3% of those killed in drone strikes were civilians.

High precision, manned: But experts conclude the chance of killing civilians is very low. The airplanes are equipped with high-definition video cameras, so strikes can be launched when no civilians are nearby. The missiles are small and accurate enough to be aimed at specific rooms in the hide-outs. This makes it less likely that civilians would be harmed. Recent missile strikes have resulted in very few civilian casualties. In 2012, for example, only 3% of those killed in drone strikes were civilians.

Moderate Precision: Experts conclude the attacks could kill civilians. The bombs might drift off course and miss their target. The pilots will not be able to see if civilians are near the target when they drop the bombs. Even if the bombs hit the hide-outs, the explosions they create might injure nearby civilians. Past bomb attacks have killed civilians by accident. In 2012, for example, 35% of those killed in bomb attacks were civilians.

Low Precision: Experts conclude the attacks could kill civilians. The bombs might drift off course and miss their target. The pilots will not be able to see if civilians are located near the target when they drop the bombs. Even if the bombs hit the hide-outs, the explosions they create might injure nearby civilians. Past bomb attacks have killed civilians by accident. In 2012, for example, fully 50% of those killed in bomb attacks were civilians.

Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

Appendix A: Survey Instruments
Survey Instrument for Experiment 1
Survey Instrument for Experiment 2
Appendix B: Survey Design, Administration, and Demographics
Table B1. Demographic Characteristics of Respondents.
Appendix C. Logistic Regression Analysis
Table C1. Ordered Logistic Regression Results for Experiment 1
Table C2. Ordered Logistic Regression Results for Experiment 2
Table C3. Ordered Logistic Regression Results for Experiment 2