One long-standing debate in research on public opinion and foreign policy is the degree to which support for the use of force declines when military casualties are incurred. Influential works in this area conclude that in the public’s mind, the risk of losing soldiers is among the most prominent and important costs of military engagement.\(^1\) Others, though, contend that casualties are less decisive, as citizens balance the costs of such casualties against the political goals of military action and the likelihood of battlefield success.\(^2\)

By rendering their operators invulnerable to enemy fire, drones upset the casualty calculations that have influenced decisions relating to the use of military force and have structured the academic debate over how public opinion responds to the possibility of armed conflict. Pilot invulnerability raises two important problems. First, research on casualty aversion focuses on operations involving human combatants, leaving considerable uncertainty about how military casualties influence public opinion when it is possible for belligerents to fight without exposing soldiers to any danger. Testing the effects of casualty aversion is particularly important now that the availability of drones could potentially make risks to soldiers superfluous. It is possible that drones could not only be preferred over other attack types, but that they may also alter existing attitudes toward other attack types because of their comparative advantage in minimizing risk.

Second, studies of the influence of casualty aversion tend to focus more heavily on how losses during a war compel an end to fighting. Less attention is devoted to what effect anticipated casualties could have on the public’s desire to initiate conflicts or to expand ongoing conflicts into new
areas. This question of preventing new engagements is especially salient during the War on Terror, which has been characterized by the spread of military operations to new conflicts and countries, each time with questions about the permissibility of the new area of operations. As we showed in chapter 1, combat drones have been central to the rapid expansion of operations geographically, yet it remains unclear whether or not this expansion has been made politically easier by drones’ pilot invulnerability.

Beyond these general questions relating to casualty aversion, there is also an urgent puzzle that gets to the heart of the issue of whether drones are justifiable weapons platforms. Drones allow the use of force while reducing the risks that military personnel face. Pilot invulnerability makes it possible to effectively wage wars at a distance, arguably without triggering any feelings of casualty aversion that the public may have. Peter Singer, 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 force when drones are employed compared to attacks that create higher risks of military casualties. If casualty aversion reduces support for the use of force, then drones create a politically easier way to strike overseas. This concern has been taken up by many other critics of drone warfare and has become one of the chief arguments against using drones. From this perspective, civilians’ sensitivity to casualties is a beneficial constraint on use of force decisions that helps to prevent wars, especially wars that are not essential to national security.

In this chapter we consider existing research on how military casualties influence support for wars, focusing on whether the availability of drones influences the public’s willingness to initiate armed conflict. Our expectations are summarized in table 3.1. Given the evidence that the public is responsive to casualties and the concern that drones may circumvent this constraint on fighting, our first and most central conjecture is that the public will express greater support for military missions in which there
is no risk of military casualties because drones are employed compared to missions where such casualties may occur. The results of the conjoint survey experiment in chapter 2 are consistent with this conjecture. In this chapter, we begin to try to understand why drones get more support than do other attack types.

Our second expectation is that casualty aversion drives this relationship. We assess these expectations with two survey experiments that systematically alter the type of attack—by drone, by combat aircraft with onboard crews, or by ground troops—being considered by American leaders, and then ask respondents how strongly they support or oppose this use of force. We find that respondents to whom the attack was described as being carried out with a drone expected far fewer military casualties, but the same likelihood of success and of civilian casualties, than do those for whom the attack was described as an air strike or as being carried out by ground forces. This suggests that casualty aversion, but not perceptions of victory or concern over the possibility of harming noncombatants, is what leads to more support for drone strikes.

Consistent with the chapter’s first expectation, as well as the findings reported in chapter 2, respondents who read about a planned drone strike exhibited greater support for the attack than those reading about an attack with ground troops. We subject the relationship between attack type and support for military action to a number of additional tests, including duplicating it on different samples of respondents and controlling for a host of other factors that influence support for the use of force, to increase confidence that the finding is not due to chance but reflects concern about minimizing the risk American military personnel face during war.

### Casualty Aversion and Support for War

John Mueller’s study of public opinion during the wars in Korea and Vietnam did much to call attention to casualty sensitivity and illustrate
its dynamics. He found a similar pattern at work in both conflicts, with support for the wars declining as the number of casualties increased. The decline did not follow a consistent progression. Rather, there was a sharp drop in support following the initial losses, then comparatively smaller declines later. Mueller concludes that it takes a larger number of casualties to produce the same level of decline in support as a war progresses. This unequal perception of casualties may be the result of those whose support for fighting is weak becoming easily disillusioned and those with stronger commitments to the cause having greater tolerance for loss. The shift in the relative weight of casualties could also be linked to changes in a willingness to bear risks as a conflict develops. Whatever the exact mechanisms behind this change, the implication is that the effects of casualty aversion are apt to be especially strong early in a conflict but that wars may persist past the initial drop and slowly lose popularity as casualties mount, eventually forcing policymakers to withdraw military forces or negotiate a peace agreement when support falls too low.

Other studies of the Vietnam War echoed Mueller’s findings and were supported by a more widespread sense that the war was hindered and ultimately lost because of the limited support it received. Martel argues that “In Vietnam, mounting U.S. casualties contributed to the collapse of public support for the war because it fostered the perception that victory was not a realistic outcome and that intervention was not worth the cost in lives and resources.” This narrative of casualty aversion fueled subsequent fears of repeating the mistakes of Vietnam and again allowing the country to become mired in unwinnable wars.

Although Vietnam often takes the central place in research on casualty aversion, there is ample evidence of its influence in other conflicts as well. Choices made during virtually every American military operation since Vietnam have been linked to this phenomenon. Somalia became another of the recurrent examples of the effects of casualty aversion when the loss of eighteen American soldiers precipitated a withdrawal from the country. Moskos goes so far as to say that the conflict created a “Somalia syndrome” to replace the Vietnam syndrome in demonstrating that the American public will not tolerate casualties. Sapolsky and Shapiro echo this sentiment when they say that “one very bad night was enough to start our planning for a withdrawal from Somalia.” The collapse of support for the intervention in Somalia is remarkable in these accounts because it came suddenly and after a single incident, rather than following years of smaller declines in support, as in Vietnam.
Mueller’s work has remained central to sustaining the view that civilians are highly sensitive to wounded and dead soldiers. Most recently, he has argued that the war in Iraq showed the same basic process of support falling as casualties increase, though in this instance he sees the process occurring even more rapidly than in the past. Luttwak writes of the emergence of post-heroic warfare in an era when “military force collides with the general refusal of the American public to sanction interventions in place after place without end.” As he sees it, behind the public reluctance to fight is the desire to avoid loss that has become stronger with the shrinking size of families. The implication is that victory requires the ability to withstand casualties and to persevere undaunted.

Some have argued that the evidence for casualty aversion is less straightforward. Burk finds evidence of rapid fluctuations in support for the intervention in Lebanon and a counterintuitive increase in Americans’ willingness to fight after the bombing of the Marine barracks. He likewise identifies a drop in public support for fighting in Somalia taking place before the battle that left eighteen soldiers dead, then being erroneously cited as an effect of the battle. This leads him to conclude that “patterns of public support for peacekeeping missions reveal no irrational or kneejerk reactions based on a putative unwillingness to tolerate casualties.” Eric Larson disputes the evidence that the American public has a low tolerance for casualties and argues that “it is more accurate to say that the public hopes for low-to-no casualty operations but fears a very different outcome.” Here casualty sensitivity simply appears as a preference and not as a decisive factor influencing American foreign policy. Charles Hyde goes even further by characterizing casualty aversion as a myth and saying that the members of the public make careful evaluations about conflicts that are guided by rational decision procedures and cues from leaders.

Much of the recent work on casualty aversion has sought to show that it is a more complex process than one of casualties producing a clear decline in support for war. Some have even given renewed attention to the early works on casualty aversion to show that the formative studies of this phenomenon made more complex predictions than this type of straightforward drop. Other studies have identified additional intervening variables. Kriner and Shen contend that the strength of casualty sensitivity varies depending on where the casualties come from, with those communities that have suffered disproportionately in the past being less willing to support new military ventures. This has regional and socioeconomic manifestations that reflect disparities in where members of the military
come from. This builds on work from Gartner, Segura, and Wilkening that shows similar differences in support for the Vietnam War depending on the extent of suffering communities endured in the fighting.\textsuperscript{19}

Delany finds that multiple factors influenced the decision to withdraw American forces from Somalia, and that the growing number of casualties was only the final cause in building a consensus that the war, and the project of nation-building more broadly, was not in the country’s interests.\textsuperscript{20} Gelpi, Feaver, and Reifler argue that casualty sensitivity does have some influence on support for wars, but that it is only one of a cluster of factors that voters take into account and that it is outweighed by the perceived likelihood of success and attitudes toward a war’s justifiability. We will return to these other causal mechanisms over the following chapters, paying special attention in chapter 5 to anticipations of success and failure. For now, the critical point is that these authors find some decline in support for war as casualties mount, but that it is rarely as sudden or as clearly linked to military losses as the conventional wisdom about the casualty sensitive American public would have it.

Some of those who suffer the most during wars, such as those who are injured or whose family members and friends are injured or killed, may not feel casualty aversion. Boettcher and Cobb argue that support for the war in Iraq remained high enough to sustain military operations and even to secure George Bush’s re-election because of the influence of the sunk costs trap.\textsuperscript{21} Far from triggering a withdrawal, the losses led many policymakers and civilians to call for a sustained investment in Iraq that would redeem the losses and ensure that they were not in vain. The military’s response to early defeats was, in General Petraeus’ words, to “go all in” in an effort to reclaim the losses, a decision that prompted the troop surge of 2007.\textsuperscript{22} This research reveals that the interplay of casualties and support for war is far from certain and that much disagreement remains about the mechanisms driving shifts in approval for fighting.

**Casualty Aversion and Restraint**

In Korea, Vietnam, Lebanon, Somalia, and Iraq, most of the evidence supporting low casualty tolerance emerged \textit{during} the fighting. The typical approach to studying casualty sensitivity in these cases is by comparing casualty figures to polling data, sometimes while situating these figures in
the context of events taking place during the war that may offer insight into intervening variables. For example, studies may show a steady decline in enthusiasm for fighting in Vietnam, then a sharp drop following the perceived American loss of the Tet Offensive, or they show that support for the intervention in Somalia fell gradually and that the Battle of Mogadishu did not actually disrupt the existing trend. Whatever the cases involved, this method of searching for the effects of casualties as they occur is in line with Mueller’s discovery of a steady decline in support for war as more American soldiers were injured or killed. However, this is only one possible way of interpreting the evidence.

In addition to casualties causing drops in public support during a conflict, we may also see casualty aversion in relation to anticipated losses. Here casualties are a constraint on when and how wars can be initiated, rather than a force compelling the end of conflicts already in progress. Many studies of American foreign policy throughout the 1990s link military restraint and an unwillingness to effectively prosecute operations with a fear of the public backlash that might occur.23 The American interventions in the Balkans stand out as some of the strongest evidence of anticipated casualties restraining military operations. Ignatieff says of the intervention in Kosovo that “[i]t was fought without ground troops, in the hope and expectation that there would be no casualties at all.” In many ways this is an even more powerful manifestation of casualty aversion than drops in support that occur during a war, since it may seriously constrain when and how military force is used rather than just limiting the duration and extent of operations.

The effects of casualty aversion should be seen not only in the public responses to losses that actually occur, but also in the pressures of avoiding those casualties in the first place. The problem is that the effects of casualty aversion on future actions is difficult to gauge because it requires exploring counterfactual scenarios. As Smith points out, “it is . . . easy to claim that a decision not to make a commitment is based on fear of casualties and difficult for a government to deny such a charge, since it has to prove a negative.”24 It remains unclear whether reservations about intervening in Kosovo or starting other prospective American military operations were informed by fears of military losses or by other considerations. It is especially problematic to say when, if ever, the fear of losing soldiers has compelled politicians to avoid fighting. With no casualty figures to link with polling data in these instances, it is impossible to tell whether shifts in sup-
port for a potential war are driven by the anticipated casualties or by some other factor. This challenge informs our methodological approach, which we describe in detail later in the chapter, of employing survey experiments about hypothetical conflicts. These experiments allow us to gain deeper insight into prospective conflicts, which cannot be judged with polling data because of their hypothetical character.

The arguments mobilized to support drone operations reveals that these machines are often justified based on their ability to reduce the risk to American military personnel. Strawser argues that armed forces have a moral obligation to protect their personnel to the greatest extent possible.25 It would, he thinks, be irresponsible and morally questionable for them to deliberately expose soldiers to the hazards of the battlefield when there are technologies for improving their security. Extrapolating from this, it is possible that the availability of drones could promote a sense that it is unfair to risk soldiers’ lives unnecessarily. Sapolsky and Shapiro reach a similar conclusion when speaking about new military technologies more generally.26 They find that each time the United States reduces the number of civilian and military casualties incurred by an operation, it also raises expectations for future operations. They envision a kind of ratchet in which policymakers and members of the military must continually strive to either improve on past performance or face a public backlash for not meeting expectations. This suggests that the availability of drones and their recent use in relatively low-cost operations (at least to American military personnel) may intensify preferences for drones and other precision weapons compared to employing manned aircraft or ground forces.

In much of the literature, casualty aversion is characterized as an undesirable phenomenon that has high political and strategic costs for the United States. Many of the commentators who find evidence that casualty aversion is overstated or that it does not exist explain the persistent belief in it as a misperception by elites. Gelpi, Reifler, and Feaver, who find mixed support for casualty aversion, contend that “the view that the public is casualty phobic is widely entrenched among policymakers and the elite.”27 Building on his contention that the phenomenon is largely illusory, Hyde says that there is “strong evidence that policymakers and senior military leaders believe the American public is casualty averse and will not tolerate deaths except when vital interests are at stake.”28 He goes on to say that “[b]y attributing casualty aversion to the public, civilian and military elites have masked their own aversion to casualties and threatened our status
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as a superpower.” Work on American military strategy throughout the 1980s and 1990s reveals widespread concern over the prospects of eroding civilian support and, in particular, of another Vietnam. Policymakers’ reticence to lose soldiers is also evident in their rhetoric and their decisions about whether to support wars. Kull and Destler report that the desire to avoid losing soldiers in combat was a theme of their interviews with senior government officials.

The perception that the American public has limited tolerance for losing soldiers extends beyond American officials. Gentry finds evidence of figures as diverse as Yugoslav, Syrian, and Iraqi leaders, Iranian and Chinese generals, and terrorists predicting that they could defeat the United States by inflicting light casualties and undermining public support for fighting. Osama bin Laden famously claimed that the withdrawal from Somalia demonstrated the country’s unwillingness to pay the costs of war. These perceptions even play a role in negotiations, as in the case of a Chinese official refusing to back down during a 1996 confrontation over Taiwan, saying, “We’ve watched you in Somalia, Haiti, and Bosnia, you don’t have the will.” Sapolsky and Shapiro contend that “we have grown ever more sensitive about casualties ... and we seek to avoid them. This limits our ability to exercise the tremendous power we possess and makes us susceptible to pressures others can ignore.” With these points in mind, some conclude that perceived casualty aversion on the part of American and foreign officials will limit foreign policy choices, slow military responses, and undermine the country’s ability to exercise deterrence. Thus, according to some, casualty aversion is a potentially dangerous phenomenon that reduces security and should be overcome.

Critics of drone warfare tend to take a much different perspective on casualty aversion, seeing it as a beneficial constraint on military operations that must be sustained in the interest of preventing unnecessary or aggressive wars. We already mentioned Singer’s concern that using drones to avoid costly military operations could trivialize conflicts. He also says that when the costs of war diminish, leaders gain a dangerous freedom of action that could lead them to initiate conflicts at will: “[a] leader needn’t carry out the kind of consensus building that is normally needed before a war, and doesn’t even need to unite the country behind the effort.”

Others raise similar concerns, making this one of the most powerful arguments against drone warfare. Kaag and Kreps argue that public opposition to losing soldiers is one of the central mechanisms through which
citizens force the government to be accountable to its wishes. They contend that the pressure to avoid costly wars is responsible for the growing use of drones, which will ultimately succeed in limiting public engagement in use of force decisions and degrading accountability. They say that “methods of warfare that leverage technology in order to insulate citizens-soldiers from harm” and that this “creates the possibility that leaders will no longer, in a prudential sense, have to obtain popular permission to go to war.”

Linda Johansson argues that pilot invulnerability “might have an impact on domestic opinion, and, in turn, lower the threshold of entering and sustaining a war.”

Frank Sauer and Niklas Schörnig contend that drones are uniquely attractive to democracies because they allow elected officials to wage wars without the potential adverse consequences that would come from losing soldiers in battle. Thus, as with Kaag and Kreps, they see the invulnerability of drone operators as a threat to accountability and the loss of one of the barriers against initiating wars. Finally, in another variation of this argument, Daniel Brunstetter and Megan Braun conclude that drones make major wars less likely by preventing cycles of escalation between states, but that they will make small wars much easier by lowering the costs of intervention. This suggests that it will be especially important to test the effects of drones on approval for fighting by looking at small military interventions that may only be tenable when the anticipated casualties are light or nonexistent.

Both supporters and critics of combat drones, then, use the fact that these weapons produce no military casualties to bolster their conclusions, albeit with much different goals in mind. The conjecture that drones could make it easier to fight by circumventing casualty sensitivity is plausible, but at present there is no strong empirical evidence supporting it. Those who advance this claim rely primarily on studies of casualty aversion produced before drones were being actively used in combat or that fail to distinguish drones from other attack types. With so many of the moral concerns relating to drones resting on this empirical prediction, it is imperative to gain better understanding of whether drones actually have any effect on perceptions of conflict. Our purpose differs from these other commentators; we seek to determine if it is true that the pilot invulnerability enabled by drones is one of the reasons that individuals, on average, prefer this means of attack over others.
Attack Type and Support for the Use of Force: Survey Experiments

The discussion to this point indicates that concern about military casualties often is a key influence on individuals’ attitudes toward the use of military force. All things equal, attacks conducted by drones should receive more support than attacks that expose military personnel to the risk of physical harm, an expectation supported by the conjoint experiment discussed in the previous chapter. To assess this idea, we designed a vignette-based survey experiment that manipulated the type of attack. All respondents read a mock news story that began with the statement that al Qaeda had established training camps in the country of Yemen and planned to use these to attack American targets:

Terrorists connected to al Qaeda have established bases and training camps in the country of Yemen in the Middle East. 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.

This introduction was followed with information about how the United States planned to attack these bases. Respondents were randomly assigned to read a paragraph that described the attack as being carried out by drones, by aircraft with onboard crews, or by ground troops:

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

*Air Strike:* The United States plans to launch attacks on these bases with bombs dropped from airplanes to kill al Qaeda leaders and militants. The militants are believed to lack weapons capable of attacking these airplanes.
Ground Troops: The United States plans to strike the bases with American paratroopers. These American troops would attack the militants and their leaders located in the bases.

After reading this news story, respondents were asked to indicate how much they supported the attack and to answer some additional questions detailed below. This chapter’s second expectation leads us to expect that the average level of support among respondents who read about an attack by drones will be higher than among those who read about an assault with ground forces. Average support among those who read about air strikes should fall somewhere between these two extremes.

We followed previous experiments on support for the use of force in choosing Yemen as the location for this scenario, for two reasons. First, the scenario is a realistic one; al Qaeda has, in fact, used Yemen as a base from which to attack American targets, such as the suicide bombing of the USS Cole in 2000 and attempts to bring down airliners bound for the United States in 2010 and 2011. As we discussed in chapter 1, Yemen has also been the site of many American targeted killing operations involving drones, special operations forces, and precision-guided munitions such as cruise missiles and missiles launched from manned aircraft. Respondents are therefore apt to perceive Yemen as a realistic setting for US military interventions and may even recall some of these previous missions.

Second, few Americans are familiar with Yemen, and the country did not receive a great deal of news coverage while we conducted this experiment. Polls of Americans’ knowledge of international affairs show that most people have little awareness of events in the country. Over the course of our research, the fighting against al Qaeda in Iraq, then Islamic State in Syria and Iraq, received far more attention than drone operations in other countries. This means that most respondents reading our experimental conditions should base their responses on its content rather than on information they have independently acquired by reading or watching news media (see the chapter appendix for the full texts of all the news story conditions). Even more importantly, there was a risk that fictional scenarios involving more familiar conflict areas or rivals, such as Iran, Iraq, Syria, Afghanistan, and Pakistan, would produce bias because of the greater public awareness of them and the stronger negative connotations. Yemen is therefore a good case in which we can create plausible fictional conflicts without much risk of respondents’ background knowledge of the region interfering with their decisions.
The experiment manipulates how the United States plans to carry out attacks on the militant bases, which we call the attack type. While all respondents’ news stories contained identical background information on the situation in Yemen, the attack type is systematically varied. Respondents were randomly assigned to news stories that described the attack as being carried out by “unmanned drone aircraft,” “bombs dropped from airplanes,” or “American paratroopers.” The first two of these conditions included information about the likelihood of military casualties. The drone strike condition stated that “[t]he use of unmanned drones means that no American military personnel would be placed at risk.” The air strike condition included the information that “[t]he militants are believed to lack weapons capable of attacking these airplanes.”

One concern is that including this information about the chance that Americans service members could be harmed might draw the attention of some respondents to the issue of military casualties, reducing their willingness to support the attack. Previous research on framing, especially work grounded in prospect theory, has found that emphasizing losses can prompt a risk-averse style of thinking.42 When it comes to the decision to initiate war, this work has found that presenting the adverse effects of fighting, which include not only the expected casualties but also other negative evaluations like a low likelihood of success or high civilian casualty estimates, can reduce support for war by encouraging members of the public to focus on the possible bad consequences of fighting over the benefits that it may offer. This suggests that explicitly mentioning expected military casualties could cause a decline in support for military operations.43 Studies of framing that deal with drone strikes and autonomous weapons have likewise shown that framing plays an important role in activating risk aversion. When questions mention the human costs of launching attacks or normative transgressions, respondents become less supportive of launching attacks.44

We decided to include information about expected casualties in the treatments for three reasons. First, doing this ensures that respondents understood this element of each attack type. Our worry was that not including these details would lead respondents to pay little attention to the type of attack that was planned and instead focus on the more general issue of whether it was a good idea to use military force in this situation. This is particularly important when it comes to evaluating support for drones. These weapons platforms are relatively new, having only been used to launch attacks for around ten years at the time of the study. Without
some mention of the potential risk of military casualties, it may be difficult for some respondents with little knowledge of military affairs to make informed risk evaluations when drones are involved.

Second, the conjoint experiment discussed in chapter 2 shows that not including information about the risk of harm that military personnel face does not alter the findings we report below. That experiment also varies the attack type, but the conditions include no mention of the chance of military casualties. The results of that experiment are consistent with those we discuss in this chapter, lending credence to the idea that including this information did not decisively influence our findings.

Third, if explicit mention that drone strikes will not result in military casualties and that air strikes might result in casualties were to have any influence on respondents’ risk evaluations, then the existing research indicates that the effect would be to increase the divide between these two treatments. Explicitly mentioning the possibility of casualties when it comes to air strikes is apt to trigger a risk-averse stance, while ruling out that possibility when it comes to drone strikes should trigger a risk-acceptance stance. If these different attitudes are activated, then the effect would be to increase the divide between the drone and air strike treatments. As we will discuss later in the chapter, the separation between the drone and air strike treatments is fairly small, indicating that any influence of risk framing on evaluations was likewise weak or nonexistent.

After reading the news story, all respondents answered the same four questions. The first asked them to rate the attack plan on a seven-point scale ranging from “definitely do not carry out attack” to “definitely carry out attack.” Responses to this question are used to assess the chapter’s first expectation. They were then asked to estimate how likely it was that the attack would result in military casualties, achieve its military objectives, and kill civilians. We included these questions to evaluate the chapter’s second expectation, which holds that respondents assigned to the drone strike condition would predict that there would be fewer military casualties than those in the ground troops condition. As discussed in chapter 1, some proponents of drones suggest that in addition to reducing military casualties, their technical capabilities, such as the ability to integrate real-time intelligence into the timing and targets of attacks, make them both better at achieving military objectives and less likely to cause civilian harm. The last two questions assess whether respondents assigned to read about drone strikes were more likely to think the attack would succeed or avoid
civilian casualties than those who read about an air strike or the use of ground troops.

We conducted this experiment with two respondent pools about one month apart. The first was recruited by the survey research firm YouGov and is a sample of 1,000 adults that is representative of the population of the United States. The second was a sample of 1,202 adults recruited via Amazon’s Mechanical Turk online labor market. Duplicating the same experiment with these two respondent pools allows comparison of how nationally representative samples, such as our YouGov respondents, and respondents in convenience samples respond to the same manipulations. Respondents in convenience samples such as Mechanical Turk may respond to experimental treatments in different ways than do respondents in more representative samples. In later chapters, we rely on Mechanical Turk samples to assess hypotheses about the effects of drone warfare on attitudes. The identical experiments analyzed in this chapter produce similar findings across the two different samples. This suggests that the findings of our subsequent work that uses convenience samples alone is likely to reflect mechanisms that have a strong potential to be generalized to the public at large.

We preregistered our plan for collecting and analyzing data prior to fielding the experiments. Preregistration strengthens confidence that our findings, and the similarities across the representative and convenience samples, are not the product of post hoc decisions about which measures to include or how to conduct the analysis. Our pre-analysis plan identifies the dependent variable as responses to the question asking about support for the attack described in the news story, and ordered logistic regression as the estimator. We follow the convention of using weights for the data from the representative sample but not the convenience sample. The key independent variables are dichotomous variables identifying if respondents were randomly assigned to the air strike and ground troop conditions; assignment to drone strike treatment is the excluded category.

Our expectation is that the coefficients on the ground troop variables will be negative. We also include standard covariates for both samples: gender, party identification, age, education, and identification as a member of a minority group. The chapter appendix compares the political and demographic characteristics of the representative and convenience samples to those of the American National Election Survey (ANES), which has rigorous procedures for selecting a random sample of adults. Our YouGov
sample is similar to the ANES sample, while the Mechanical Turk respondents for this experiment are, on average, younger and more likely to have a college degree, to identify as agnostic or atheist, to be Caucasian, and to be Democrats. These differences are typical for such samples. For this convenience sample, we run an additional model that includes five additional covariates: age squared, income, marital status, political ideology, and identification as atheist or agnostic. Previous research finds that including these covariates produces estimates of causal effects in Mechanical Turk samples that are qualitatively similar to those produced when identical experiments are conducted with representative samples. This allows us to further identify the degree to which our substantive findings differ across these two sampling frames.

Figure 3.1 plots the percentage of support offered by respondents in our YouGov sample in each of the three conditions. Two facts stand out. First, large fractions of respondents support the use of force across the three attack types. This is consistent with previous work that has found that Americans are particularly willing to support military action to counter terrorism directed at the United States. Furthermore, the experiment was conducted at a time when the actual threat of terrorist attacks against the United States and its interests was quite high. Over the previous year, Islamic State–inspired terrorists had launched attacks in the United States, Belgium, and France, all of which received extensive press coverage. Based on this we can surmise that casualty sensitivity may be a barrier to initiating wars, but that perceived national security imperatives can still be strong enough to push the public to support war despite the possibility of losing soldiers. Even after more than a decade of intractable fighting in Iraq and Afghanistan, leaders could plausibly rally sufficient backing to send American forces into another conflict. It is essential to avoid overstating the extent of casualty aversion or underestimating the power of perceived national security priorities when it comes to mobilizing support for war.

Second, differences across the conditions are modest; of the respondents who read about an attack by ground troops, a slightly smaller percentage supported attacking, and a slightly larger percentage opposed attacking, compared to those who read about attacks by drones or aircraft. This is consistent with our first expectation that attack type influences support for the use of force, but suggests that the substantive effect of variation in attack type may be smaller than indicated by those who fear that
using drones will substantially increase public support for military action. The differences across attack types has several important implications. It is further evidence that casualty aversion is not an overwhelming impediment to initiating wars. Fear of loss appears to shift levels of support, but only by a modest amount. It seems doubtful that such small changes will have a decisive impact on whether the country goes to war, especially when leaders have a degree of autonomy from public opinion and may initiate wars even when they lack majority backing. It is possible that casualty aversion could have a stronger limiting influence in other countries, but in the case of the United States there is little empirical basis for the concern that drones will seriously alter the public’s willingness to fight terrorism with military force. This sheds light on the moral debate over drone warfare by challenging the widespread assumption that drones make it easier to fight.

The similarities between treatments involving drones or inhabited aircraft give us greater insight into how the American public perceives the risks associated with war. Drones may in principle mark a radical step beyond inhabited aircraft because they make pilots invulnerable, but from the public’s standpoint, all air warfare seems to be relatively safe.
This is likely a product of decades of American air superiority. US fighters and bombers have dominated the skies against enemies with limited anti-aircraft resources. Only a few pilots have been shot down in recent conflicts, with most aerial casualties coming from friendly fire and accidents. Moreover, survivability is high for combat aircraft. Since the end of the Cold War, many pilots who have been shot down by enemy fire have managed to escape and were later rescued. As long as the US military is preoccupied with fighting insurgents and terrorists, the comparative risks associated with drones and inhabited aircraft will continue to be low. These will only change substantially if the United States begins operations against conventional enemies, though even in this case the public’s background assumptions about risk may persist until the country begins losing pilots in action.

Returning to the debate over the morality of drone warfare, the close relationship between attitudes toward both types of aircraft is evidence that the real challenge related to the disappearance of casualty aversion is not coming from drones. Rather, it is a result of asymmetric balances of power between opposing belligerents. So long as inhabited aircraft are virtually invulnerable from enemy fire, they present roughly the same advantages as drones. The possibility of harming pilots onboard aircraft does not matter much when the pilots are rarely harmed in practice. The ability to circumvent feelings of casualty aversion are therefore not fixed and unchanging. They depend heavily on enemy military capacities. Expanding on this, other vehicles that offer similar asymmetric advantages or heightened survivability for crews could have the same capacity to moderate perceived risks as drones themselves.

In terms of bypassing casualty sensitivity, the unique advantages drones offer will only be strongly felt when comparable inhabited vehicles are threatened. As discussed in chapter 1, current generation drones will probably have limited utility in these conflicts because they are more susceptible to enemy aircraft and anti-aircraft systems than planes with onboard crews, which are faster and have more sophisticated countermeasures. Thus, the advantages drones confer when it comes to generating a consensus for war will probably be most valuable when leaders are less likely to consider these to be the optimal means of attack.

Table 3.2 takes up the issue of casualty sensitivity more systematically. It reports the results of four ordered logistic regression models, using support for the attack as the dependent variable. Models 1 and 2 use data
from the representative YouGov sample; models 3 and 4 use data from the Mechanical Turk convenience sample. In model 1, the only independent variables included are dichotomous measures of assignment to the air strike or ground troops conditions. Model 2 adds the covariates outlined in our pre-analysis plan. Models 3 and 4 report similar analyses for the convenience sample; model 3 uses the same covariates as model 2, while model 4 adds the covariates that previous research suggests will produce results most similar to those in the representative sample. Across the four models, coefficients on the air strike variable are not significant, indicating that, on average, respondents in our two samples did not systematically prefer drone strikes to attacks from manned aircraft. The coefficients on the ground troops variable are negative and statistically significant in all four of the models. Our respondents, then, do prefer that attacks be carried out by drones rather than by ground troops.

Turning briefly to the control variables, we see results that are broadly consistent with previous work on support for the use of force. Individuals whose party identification is Republican express more support for attacks in models 2 and 3. This variable is not significant in model 4, but the measure for political ideology it includes is positive and significant, indicating that more politically conservative respondents are willing to engage in the use of force. Individuals who are older also express more support for military action, as indicated by the age variable in models 2 and 3 and the square of this variable in model 4. Women are less likely to express support for the attack, although this variable is only significant in the convenience sample.

The final row of table 3.2 reports the odds ratios for the ground troops variable in models 2, 3, and 4. These indicate the change in the likelihood that a respondent would select the highest level of the dependent variable (“definitely attack”) compared to all of the six lower levels of support for military action, holding all other covariates at their means. This sort of comparison is a meaningful one, as we saw in figure 3.1 that pluralities of respondents in each of the conditions endorsed launching the attack that they read about. For model 2, for example, individuals who read about the use of ground troops were 28 percent less likely to offer the fullest degree of support for the attack than those who read about the drone strike. The corresponding odds ratios for models 3 and 4 are of similar magnitude.

We saw in figure 3.1 that there are small but discernible differences in the attitudes of respondents based on the content of the news story they
read, with those who read about an attack by drones being more willing to support the use of force. The statistical analysis sheds additional light on this relationship. It tells us that the differences we observe in figure 3.1 between respondents assigned to the drone and ground troop treatments are statistically significant (albeit at the $p < .10$ level in model 1), but that respondents who read about drone strikes and air strikes offered similar levels of support for the planned attack. This relationship holds when we include control variables such as party identification, meaning we can be more confident that it is the attack type and not some difference in indi-

<table>
<thead>
<tr>
<th>Model</th>
<th>Representative Sample</th>
<th>Convenience Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Air strike</td>
<td>.03</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>(.14)</td>
<td>(.15)</td>
</tr>
<tr>
<td>Ground troops</td>
<td>−.24*</td>
<td>−.33**</td>
</tr>
<tr>
<td></td>
<td>(.14)</td>
<td>(.15)</td>
</tr>
<tr>
<td>Gender</td>
<td>−.10</td>
<td>−.18*</td>
</tr>
<tr>
<td></td>
<td>(.12)</td>
<td>(.10)</td>
</tr>
<tr>
<td>Party identification</td>
<td>.11***</td>
<td>.24***</td>
</tr>
<tr>
<td></td>
<td>(.03)</td>
<td>(.03)</td>
</tr>
<tr>
<td>Age</td>
<td>.03***</td>
<td>.02***</td>
</tr>
<tr>
<td></td>
<td>(.004)</td>
<td>(.005)</td>
</tr>
<tr>
<td>Education</td>
<td>−.09**</td>
<td>.06</td>
</tr>
<tr>
<td></td>
<td>(.04)</td>
<td>(.04)</td>
</tr>
<tr>
<td>Minority</td>
<td>−.21</td>
<td>.24*</td>
</tr>
<tr>
<td></td>
<td>(.13)</td>
<td>(.13)</td>
</tr>
<tr>
<td>Age squared</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>−.05</td>
<td></td>
</tr>
<tr>
<td>Atheist or agnostic</td>
<td>−.04</td>
<td></td>
</tr>
<tr>
<td>Ideology</td>
<td>.39***</td>
<td></td>
</tr>
</tbody>
</table>

| Observations | 994 | 947 | 1,202 | 1,197 |
| Log likelihood | −1,603 | −1,471 | −2,083 | −2,047 |
| Ground troops odds ratio | .79 | .72 | .63 | .65 |

Note: Standard errors in parentheses; * $p < .1$; ** $p < .05$; *** $p < .01$. 
individual characteristics that determines different levels of support for the attack across treatments.

We also see that the relationship is similar in both the representative YouGov sample and the convenience Mechanical Turk sample. This will prove important in subsequent chapters, where we rely on additional convenience samples to assess our empirical expectations. The fact that respondents in both respondent pools respond in similar ways suggests that the findings of our later chapters have the potential to generalize from our online samples to more representative groups. These experiments indicate that drones have an incremental effect on attitudes and that, as we saw in chapter 2, other factors continue to exert powerful influences over support for the use of force. Thus, while we argue that the risk of drones circumventing casualty aversion has been overstated, we do think that it is important to treat the availability of drones as being one consideration in the overall explanation of what directs public opinion when the country is contemplating war.

To this point, our analysis is consistent with the idea that individuals are a bit more willing to express support for an attack carried out by drones than one carried out by ground troops. But this sheds less light on why people favor drones. In chapter 1 we suggested three reasons for this relationship. The first is that drones eliminate the risk of military casualties, and a great deal of research concludes that avoiding such harm is an important consideration when Americans assess the utility of military force. A second is that, given drones’ technological capabilities to loiter for long periods and to collect intelligence on targets in real time, individuals might favor drones because they are seen as a highly selective type of military force that is more likely to achieve battlefield objectives. A third, and related, reason is that these capabilities may reduce the chance that drones, compared to other attack types, will cause civilian casualties.

We assessed these arguments by asking respondents how likely they thought that the attack described in the news story they read was to result in military casualties, a successful attack, and civilian casualties. Figures 3.2 through 3.4 plot responses to these questions from respondents from our representative sample. In figure 3.2, we see that respondents were considerably more likely to expect military casualties if they read about an attack by ground troops than by aircraft or drones. This is consistent with the proposition that avoiding such harm influenced the degree to which they supported the attacks. However, no such relationship exists for mission...
success (figure 3.3)\textsuperscript{57} or civilian casualties (figure 3.4),\textsuperscript{58} indicating that the type of attack exerted little influence on expectations regarding these outcomes. The absence of a relationship between perceptions of mission success and civilian casualties reinforces this point. The fact that these two factors do not vary systematically across treatments, while the expectation of military casualties does, is consistent with our expectation that the latter is an important reason why respondents were more supportive of attacks with drones than with ground troops.

These finding suggest that military casualties matter for respondents’ support for the attack. These experiments, however, are not definitive on this point. The reason for this is that respondents in the drone strike and air strike conditions were provided with information suggesting that military personnel would face low risks of harm if the attacks took place, so the relationship depicted in figure 3.2 could simply reflect this feature of the experiment.\textsuperscript{59} However, we saw in the conjoint survey experiment in chapter 2 that similar patterns hold when information about military casualties is not included, indicating that our findings in this chapter are unlikely to be a result of this specific design choice.
Conclusion

It is important to reiterate here that our experiments in this chapter and throughout the book focus on how casualty aversion influences the public’s support for new military ventures. The experiments respondents read involve the initiation of wars or the expansion of ongoing conflicts into new areas. Initial support for war may not always be a good indicator of whether a war will continue to be popular over the long term. As Mueller points out, the wars in Korea, Vietnam, and Iraq had considerable support early on and yet became unpopular once hostilities began. The level of support for a new intervention could therefore drop substantially once the costs become real, especially if these deviate from what elites have promised. Burk even says that the core problem of casualty aversion is not building the support to start an intervention but rather “The worry is that public support for missions, which seems sufficient, will quickly evaporate when faced with American casualties.” However, this is likely an overstatement. As we saw earlier, many commentators link casualty aversion to a loss of American deterrent power (which is premised on inhibiting the initial use
of force that we test here) and credit this feeling with producing a spate of low-intensity military operations since the Vietnam War, as well as causing a general reticence to fight when American interests in doing so were weak.

Of course, there is an even more important reason for looking at the beginning of conflicts rather than at changes in support for ongoing wars. Thus far our only experience with American drone strikes has come in the context of a War on Terror that is difficult to characterize as a single coherent war, at least not in the same sense that Vietnam or Somalia were self-contained wars. As discussed in chapter 1, drone strikes have been characterized not by sustained operations but by sporadic attacks taking place around the world and against an ever-changing array of targets. In this context, judgments about the permissibility of fighting must often be made on a case-by-case basis. They continually arise as attacks expand geographically and as new targets are selected. That is to say, during the War on Terror, the American public continually faces new conflict scenarios akin to those we describe in the experiments even though these strikes are ostensibly part of an ongoing war.

Recall that one of the central concerns among those who consider casualty aversion to be an unfortunate limitation on American foreign policy

![Fig. 3.4. Estimates of success by attack type](image.png)
was that it (or at least perceptions of it) prevents the United States from coercing rivals. Whether the United States actually engages in coercive deterrence will depend heavily on whether elites sense that they can risk committing military forces and still be assured of public support. The enduring gap between elite perceptions of civilian casualty sensitivity and the public’s willingness to sustain some losses is therefore an important consideration when anticipating what effects public opinion will have on policymakers’ choices. Our experiments do not gauge elite attitudes toward drones, yet this issue of elite perception and its relationship to casualty aversion shows that any effects of public opinion will continue to be influenced by and mediated by elites. The consequences of casualty sensitivity for the American capacity for deterrence are therefore apt to vary considerably depending on the views of American officials and of those on the receiving end of coercion.

It is also important to be aware that the effects of casualty sensitivity may vary over time and continue to change as the public gains familiarity with drones. Levy argues that sensitivity to losses only empowers civilians in the short term, and that over time the restrictive force of public opinion dissipates as the military seeks ways of circumventing it. In particular, military elites may attempt to speed up the decision-making process to outpace public opinion formation, create contingency plans that weaken civilian oversight, or increase their influence over the decision-making process. Drones themselves may arguably be one means of re-empowering the military and intelligence services, as they seem to fit closely with the process Levy describes as reducing risks to soldiers with the goal of increasing the military’s freedom of action. Drone warfare could therefore be a consequence of casualty aversion and an effort to reassert the military’s ability to wage war without being constrained by external pressures.

Although Levy sets out to challenge the dominant understanding of casualty aversion, his analysis supports the general conclusion that critics of drone warfare tend to draw from that literature: that drones threaten to produce a dangerous drop in civilian concern over the costs of military actions. With this in mind, we should not assume that support for drones compared to other types of military force will remain consistent over time, and we should continually revisit this topic to gauge shifts in public opinion. This will be especially important following any major security events that can dramatically reorient national security priorities, as the War on Terror did.62

The focus on the effects of military casualties in this chapter is essential
for determining whether the casualty aversion thesis is plausible and what
effects casualty sensitivity may have on the future of American drone oper-
ations. By isolating this factor and testing it apart from those we discussed
previously, it is possible to confirm that judgments of prospective military
operations are informed by assessments of military casualties, but that the
effects of casualty aversion on overall levels of support for war is small.
Over the following chapters we will introduce other factors that produce
a more comprehensive account of how it operates and what effects it will
have on the future of American military operations.