Drones and Support for the Use of Force

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Published by University of Michigan Press

Schulzke, Marcus and James Igoe Walsh.
Drones and Support for the Use of Force.

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Introduction

Choosing War

Political leaders face two key challenges when they decide to use military force: winning the war itself, and winning support at home. In the past two decades, the United States has pursued a technological solution to these problems by developing combat drones—weapons that can both selectively target opponents and minimize the costs and risks of combat. In this book, we seek to understand how this solution to the challenge of military victory also addresses the need for public support for engaging in conflict.

Combat drones have been employed by the United States against insurgent and terrorist groups. These militant organizations are materially weaker than the governments they fight. Their relative weakness leads them to avoid direct military confrontations and to use the civilian population to mask their identities, attempting to pass as noncombatants by eschewing uniforms and by residing in populated areas. A key challenge that authorities face in countering insurgencies is solving this “identification” problem of distinguishing bona fide militants from civilians. Doing so allows the authorities to bring to bear their superior military power. But failure to correctly identify militants means that strikes risk military casualties, mission failure, and civilian harm. This is not only unfortunate but counterproductive, as militants can use their opponent’s failure and the deaths of noncombatants to persuade the population that the authorities are indiscriminate and unjust, while the militants can offer protection today and the promise to replace the government in the future.
The United States faced just this problem in its attempts to counter insurgencies in Vietnam, Iraq, and Afghanistan. In Vietnam, areas subject to aerial bombing experienced many civilian casualties and saw declines in government control and increases in influence by militants. In Iraq, inadvertent killings of civilians by the United States led to more militant violence in regions where government influence and support was the weakest. In Afghanistan, popular support for the international military coalition led by the United States declined in villages where its use of force resulted in civilian harm.4

Leaders in democracies also need to maintain domestic political support for the conflict by convincing the public that the benefits and likelihood of eventual victory will exceed the human and financial costs. Their ability to do so depends in part on success on the battlefield, but it is difficult to demonstrate with much certainty that counterinsurgency campaigns are “working.” Militant movements present few opportunities to decisively defeat the enemy in set-piece battles, and the militants’ ability to hide among the population makes it difficult to assess their military capabilities. Even when militants lose major engagements, as they did during the Tet Offensive in Vietnam and the Battles of Fallujah in Iraq, the outcome rarely feels like a victory because the confrontations provide evidence of militants’ strength and foster doubts about whether long-term political objectives can be met. Citizens can clearly see the costs of using force against militants—government spending and military casualties, for example—but have difficulty seeing any successes. Mounting financial and human costs, especially military casualties, directly reduce support for countering insurgencies. Vietnam, Iraq, and Afghanistan illustrate this dynamic; in each case, public support for the use of force declined as casualties increased.5

Technological developments now allow the creation of weapons, the most prominent of which are armed unmanned aerial vehicles, or “drones,” that promise to make it easier to address both challenges. These combat drones have two relevant characteristics when it comes to managing the costs of counterinsurgency and improving the chances of success. The first is selectivity, understood as the ability to identify and strike a well-defined target—such as a particular building, vehicle, or individual—while minimizing harm to nearby noncombatants and civilian infrastructure. Weapons are more selective when they can be actively guided to their targets, such as missiles directed to specific geographic coordinates. Selectivity is
also enhanced when the weapon is integrated with multiple streams of intelligence—collected by the weapons platform itself or by other systems, such as satellites or communications intercepts—that provide information about the identity and location of a target. Greater selectivity means that a weapon is better able to solve the identification problem, allowing more effective detection and targeting of hostile militants while timing strikes to reduce the possibility of civilian casualties. Drones hold advantages in terms of both aspects of selectivity, as they are tools for conducting protracted reconnaissance missions to track suspected enemy fighters and for launching attacks using relatively low-yield munitions that reduce the risk of inflicting civilian casualties.

The second characteristic is pilot invulnerability: the capacity to achieve battlefield victories while minimizing the risk that military personnel face when engaging enemy forces. Pilot invulnerability is a function of the range with which a weapon can strike from its operator. In general, the longer the range, the less vulnerable the weapon’s operator is to enemy fire. Field artillery, for example, typically has a much longer range than mortars, meaning that soldiers manning the former are, all other things being equal, at less risk than those operating the latter. Similarly, the crews of aircraft armed with guided missiles are less vulnerable than their counterparts flying aircraft that drop simple “gravity” bombs, which have to fly closer to their targets to increase their accuracy.

This invulnerability is a characteristic of the pilot, not of the machine. Drones remove their human operators from danger, but the machines themselves may be attacked and destroyed. Current generation drones are generally more susceptible to attack than aircraft with onboard crews because they tend to fly slower, have limited defensive capabilities, and perform poorly in air-to-air combat against enemy aircraft. Drones may also be hacked, spoofed, or suffer from technical faults that interfere with their control systems. These limitations put the machines at risk of attack or failure, yet the pilots remain invulnerable because they are at such extreme distances from the battlefield that their fate is completely divorced from that of the aircraft. The entire American drone force could be shot down without causing any loss of human life; the same cannot be said of aircraft without onboard crews.

Both characteristics have powerful political consequences, especially when they are combined in the same weapon system. This has not received sufficient attention, in part because until recently the designers of weapons
have faced a trade-off between selectivity and pilot invulnerability. To continue the examples introduced above, mortars are typically more selective than artillery but place troops in greater danger of counterattack. Strike aircraft armed with laser-guided bombs can regularly hit specific targets, but this selectivity declines when they fly at higher altitudes to avoid anti-aircraft fire. For this reason, much analysis has focused on either selectivity or pilot invulnerability, while assuming that these goals cannot be realized simultaneously.\textsuperscript{7} There is a robust debate dating back to the 1920s, for example, about how selectivity influences political and military outcomes.\textsuperscript{8} Other works have considered how pilot invulnerability reduces the costs and risks of using force, for example by allowing attacks with long-range aircraft compared to the use of ground troops.\textsuperscript{9}

Recent technological developments have sharply narrowed the trade-off between selectivity and pilot invulnerability. Combat drones—remotely piloted aircraft armed with air-to-ground missiles—are the best example of a weapon system that incorporates both characteristics. Drones are more selective and offer their operators greater safety than their most similar weapon system, the strike aircraft with an onboard crew. Both are armed with accurate, guided munitions and can collect intelligence about potential targets from onboard sensors. Drones have the advantage of being able to loiter for much longer periods, allowing more time for the integration of intelligence, the positive identification of targets, and the selection of a time to strike that will maximize damage to the target while minimizing risks to noncombatants. Modern strike aircraft have considerable ability to avoid taking enemy fire, including high-speed, defensive weapons, and in some cases a “stealthy” design. But their crews are always at some risk of being shot down or experiencing a malfunction, while the pilots of a drone may be located thousands of miles from the battlefield and immune from physical harm. Importantly, drones represent an improvement in both selectivity and pilot invulnerability over other weapons systems. Piloted aircraft, for example, can increase the selectivity of their attacks by flying closer to their targets, but this increases the vulnerability of their crews to ground fire or accidents. Drones require no such trade-off; they allow attacks that are more selective while eliminating risks of physical harm to military personnel.

The ability of more selective weapons, such as drones, to mitigate the political difficulties of war—winning on the battlefield and securing domestic support—has been debated since the advent of air power in the
early twentieth century. Campaigns that shaped this debate include the British use of air power to counter rebels in northern Iraq and in Waziristan in the 1920s and the United States’ extensive bombing against insurgent Viet Cong units during the Vietnam War. Most of these attacks were carried out with gravity bombs dropped from manned aircraft, which could not be directed to their targets with much precision and which placed their crews at risk. Later assessments concluded that they had little effect on, or actually strengthened, the insurgents they targeted. The use of truly selective weapons has been much less frequent or sustained. The United States launched cruise missiles against al Qaeda bases in Sudan and Afghanistan after attacks on American embassies in 1998, but these attacks were not maintained for long enough to undermine the group. Israel has used missiles fired from helicopters, fixed-wing aircraft, and drones, as well as snipers and ground troops, in a campaign of “targeted killings” directed against armed Palestinian groups in the West Bank and Gaza Strip, and the United States used similar technologies of violence in Iraq and Afghanistan. These campaigns were certainly more selective than their predecessors, although their military effectiveness has been debated, and they continued to place military personnel at some risk of harm.

Drones may fundamentally alter these trade-offs and more generally the costs and benefits of using armed force. Scholars of international politics have long thought that the costs of conflict influence potential combatants’ willingness to take up arms. Recent work uses as its starting point the assumption that states and other actors who have different interests and preferences bargain with each other to resolve these differences. Using force, or threatening to do so, is one strategy an actor can adopt to press its opponent to make concessions. But even successful military action is costly; it risks the lives of military personnel and civilians, is expensive in financial terms, and reduces the capacity to use force in other theaters or against other opponents. Before resorting to military force, states and other actors subtract their estimates of these costs from the benefits they expect to accrue from successful coercion of a foe. This creates a “bargaining range,” understood as negotiated agreements that both sides prefer to incurring the costs and risks of war. When the bargaining range is larger, there are more potential bargains that the sides might prefer to war.

The costs of war are an important influence on the size of the bargaining range; as these costs change, so does the range of peaceful settlements that both sides would prefer to armed conflict. Innovation in military
technology and doctrine is one way that the costs of war change. Innovations that make war more costly should, ceteris paribus, create a larger bargaining range and thus reduce the likelihood of war. A good example of this is the effect of nuclear weapons on interstate conflict; many conclude that, under the right conditions, nuclear weapons can prevent conflict by hugely raising its costs.16

Nuclear weapons increase the costs of war, while drones reduce them. This means that possession of armed drones could strengthen incentives for an actor to start or to sustain conflicts. The pilot invulnerability that drones allow eliminates a key cost of military action: the military casualties that undermine domestic political support for the conflict. Their selectivity means that weapons launched from drones are more likely to achieve their battlefield objectives, increasing the costs imposed on the opposing side. Selectivity also lowers the chances that releasing such weapons will result in harm to civilians, which, like military casualties, can make political actors at home and abroad less willing to support the conflict. Drone operations further reduce the need for large forward military bases, lowering (but not eliminating) the financial costs of military operations and the need to rely on allies, who may demand concessions in exchange for their cooperation. These reductions in the cost of war are particularly strong for combatants that possess drones and that face foes unable to destroy these weapons in combat or to easily impose other costs on the adversary. This has been the situation for many of the conflicts involving terrorist and militant organizations against whom the United States has used armed drones since 2002.17

Drones have substantially reduced the costs of conflict for the United States. The concern is that this has made armed conflict a more attractive option for the United States. In contrast with nuclear weapons, which may have reduced the likelihood of interstate war, the development of drone technology may create incentives for more and longer conflicts. The use of combat drones by the United States in the twenty-first century, then, marks an important change from these earlier conflicts. The United States and other countries have been developing precision-guided munitions in earnest since the 1970s. But until recently, these weapons were not used regularly enough to permit a sustained analysis of their effects. For this reason, most assessments of selective weapons have been anecdotal. The drone campaigns of the past decade and a half have involved hundreds of strikes against militant organizations, most in the Federally Administered Tribal
Areas of Pakistan, with additional strikes in Yemen, Somalia, Iraq, and Syria. This large number of attacks over a long period of time provides the first opportunity to assess in a systematic way how the sustained use of such weapons influences public support for the use of force.

Support for the Use of Force

This book seeks to understand how the development of combat drones influences popular support for the use of force by the United States. Investigating the relationship between public opinion and foreign policy has a long history in political science. Much of the recent work in this area can be grouped into three broad schools of thought. A first school, and the one with which the book engages most directly, focuses on how individuals assess the costs and benefits of using military force or engaging in other foreign policy actions; public support rises as the benefits increase, the costs decrease, or both. Benefits of using force can include deterring states (or nonstate actors, such as terrorist or militant groups) that threaten the security of the United States, coercing states and nonstate actors into taking actions that benefit the United States but that those actors would otherwise prefer to avoid, preventing such actors from committing mass killings or other atrocities, or supporting allied states against the threats they face. Considerable research shows that the public attaches different weights to the value of each of these “principal policy objectives,” and that these weights can change as the threats to American interests and values vary over time. For example, deterring aggression by powerful states was especially important during the Cold War, when this was the principal goal of American foreign policy, while the importance of countering terrorism has increased since the terrorist attacks of September 11, 2001.

According to this line of reasoning, the public balances these potential benefits against the costs of using force. The cost that has received the most attention is military casualties, which have been shown to be a consistent and important influence on such attitudes. A large body of research has concluded that the occurrence, rate, home state, race and ethnicity, socioeconomic status, timing, and framing of military casualties influence Americans’ attitudes. Another important cost is the possibility that military action will fail to secure American interests. Influential recent work concludes that the American public is willing to tolerate the risk of
military casualties if doing so ensures that important American interests are secured.\textsuperscript{22} Less work has investigated how the public assesses the cost of civilian casualties that result from American military action. Some conclude that such casualties play little role in the citizens’ cost-benefit calculations, although more recent work suggests that many individuals attach considerable weight to avoiding harm to noncombatants.\textsuperscript{23}

This book seeks to understand how the use of combat drones influences these cost-benefit calculations. This is an important contribution to the study of public attitudes. Most of the research to date on public opinion and the use of force assumes, often implicitly, that military action will place American service members at risk of harm on the battlefield. Perhaps the most widely discussed consequence of combat drones is that pilot invulnerability eliminates military casualties. Drones’ selectivity also has the potential to reduce many of the costs of combat. If drones can target the leaders of insurgent and terrorist organizations, their use could undermine these combatants’ political and military effectiveness, leading to shorter or less bloody conflicts. The ability of drones to reduce civilian casualties compared to other, less selective forms of military force could make the deaths of noncombatants less consequential for the American public. If drones reduce these costs of combat, then this would have important implications for decisions to initiate and to continue conflicts. If the United States is able to pay much lower costs for engaging in combat, this could increase the incentive to resort to arms and decrease the willingness to find peaceful solutions. This in turn may lead the country to engage in more, and possibly more reckless, wars to achieve its aims. Our goal is to assess the degree to which drones lead individuals to reassess these costs of conflict and how such reassessments influence their support for military action.

A second school emphasizes that individuals’ preferences and opinions are heavily influenced by the information provided to them by the media and by political elites. According to the most influential version of this approach, when elites across the political spectrum agree on the wisdom of using military force, citizens who follow politics align their views with those of the country’s political leaders. But when these leaders hold conflicting preferences about foreign policy, individuals express support for the policies espoused by leaders who share their partisan identity. Related work has explored how the preferences of other elite actors, such as international organizations and nongovernmental organizations, as well as the
framing of conflicts by the media, also drive individuals’ perceptions and preferences.24

Although we focus on public opinion formation in direct response to prospective attacks, rather than on the role of elite influence, our results indirectly address this perspective. Reducing the perceived costs of fighting for the public may reduce the perceived costs for elites as well. That is to say, elites may themselves subscribe to the narrative of drones being effective low-cost weapons that can be used more readily than other types of military force. If elites adopt this viewpoint, they may be more credible and influential sources of guidance for the American public. Confidence in drones will also increase the likelihood that they will be portrayed as a viable attack strategy when the country is contemplating war. While the findings presented in subsequent chapters arise from a different starting position than much of the elite-focused work on public opinion, we demonstrate at multiple points that the interplay between elite and citizen preferences could also influence the domestic politics of employing combat drones. For example, in chapter 4 on principal policy objectives, we discuss how political leaders have powerful incentives to frame conflicts in terms of objectives that receive more public support. Our findings also have implications for what strategies elites may adopt to frame information effectively.

A third school of thought begins with the premise that individuals have underlying values about the utility and morality of military force and the importance of international collaboration as a means for achieving national objectives. This school of thought holds that general foreign policy attitudes play an important role in shaping individuals’ understandings of and preferences regarding military action in a wide range of specific circumstances.25 We have little doubt that such attitudes could influence how Americans think about combat drones. It seems plausible to expect that, for example, individuals whose attitudes about foreign policy are characterized by “militant assertiveness” would be more willing to countenance drone strikes. Our focus is on the more proximate factors surrounding combat drones, such as their selectivity and pilot invulnerability, as these characteristics are the most novel aspects of the technology and exercise a direct influence over the costs and benefits of decisions to use military force. However, our experiments indirectly address questions about the influence of existing values. In particular, we find that Democrats assign less utility to using force than do Republicans. This likely reflects underly-
ing differences in partisans’ assessments of the utility and morality of military force. We find little evidence of differences in partisan preferences for different types of military force; both Democrats and Republicans prefer drone strikes to the use of ground troops. This suggests that while overarching political ideologies matter for assessments of the value of military action, there is considerable consensus preferring attacks from more selective and invulnerable platforms that reduce the costs of conflict for the United States.

**History of Drone Warfare**

Drones respond to the challenges of managing the costs of war and more precisely targeting enemies. These challenges have become more prominent in recent counterinsurgencies, but they are not entirely new. Remote weapons designed to increase pilot invulnerability and selectivity predate the current generation of drones by several decades. Tracing the evolution of these weapons from the Second World War to the War on Terror is important for four reasons. First, it offers insight into the links between the goals of improving pilot invulnerability and selectivity. Second, it shows how drones have been used to not only manage the risks of fighting, but to also avoid displeasing an American public often seen as being reluctant to wage costly wars, especially in the post-Vietnam era. Third, it shows the extent of recent drone operations throughout the War on Terror and the ongoing race to produce new drone variants, which in turn suggests that drones will continue to play a central role in future American military operations. Finally, this history clarifies the moral and legal questions that drones pose, especially those relating to unintended consequences of lowering inhibitions against fighting, which we test throughout the book.

Early drone variants were produced by both sides during the Second World War. Germany experimented with unmanned ground vehicles (UGVs) by introducing the Goliath remote-controlled mine, which was designed to be driven under enemy tanks before exploding. The Allies tested their own drones, though they were more interested in unmanned aerial vehicles (UAVs) and initially only saw its Radioplane aircraft as training tools to give pilots practice with air-to-air combat. These and other early applications of remote weaponry pointed the way toward future developments in unmanned warfare, yet they showed that the technology
had not advanced to a stage that would make drones feasible weapons. Remote mines were single-use devices that had to be operated at short range, thereby failing to provide operator invulnerability. They were also unreliable and difficult to control, which made them a poor addition to Germany’s arsenal. Target UAVs were more successful, becoming a fixture of training for United States Air Force pilots during the Cold War and gradually transitioning into use as reconnaissance aircraft as their control and communication systems became more advanced.

Among the earliest drones in the sense of being able to replace a manned vehicle in precise and low-risk attacks was the Ryan Firebee. Originally designed as a target for pilots in training, it was later adapted for ISR (intelligence, surveillance, and reconnaissance) in the form of the Fire Fly and Lightning Bug variants. From 1964 to 1974, Firebees flew 3,435 sorties over Southeast Asia. Some were shot down over North Vietnam, yet they had a survival rate averaging around 84 percent, reaching as high as 90 percent near the end of the war. These aircraft were designed to be recoverable and even carried countermeasures to interfere with enemy targeting systems, which allowed them to take over at a low cost some of the missions that would have endangered human pilots. Still, they were primitive compared to modern drones, and technical limitations prevented them from being used on a larger scale. Among the most serious shortcomings were that they could not take off and land on their own, depending on assistance from manned aircraft for launch and recovery, and they had to be controlled by nearby DC-130 director planes. Thus, the reconnaissance drones failed to provide pilot invulnerability—only reducing the risk to pilots by distancing them from their drones while still forcing them to remain in the battlespace—and lacked the capacity to conduct selective attacks.

The MQ-1 Predator was first deployed in 1995 to provide surveillance in the Balkans. The small, light aircraft were ideal for unarmed reconnaissance and were used in that capacity over the following decade. Their utility compared to manned aircraft became clear when Scott O’Grady was shot down over Bosnia on July 2, 1995. O’Grady spent six days evading enemy fighters, with his struggle to avoid capture and his rescue becoming a major media event. He survived the ordeal, yet it provoked fears that ostensibly low-cost humanitarian interventions conducted with the utmost care could still result in American military casualties. The incident built on fears that public support for fighting could drop sharply with the
loss of even a single American life. On August 11, 1995, a Predator drone was shot down over Bosnia, but this incident attracted much less attention and lacked the human element that had made O’Grady such a compelling figure. The apparently limited concern over the crash seemed to confirm that pilot invulnerability could lower the costs of war and help to avert potentially disastrous drops in public support. Predators returned to service in 1999 during the intervention in Kosovo. Once again, they were used to locate enemy positions concealed in forests or towns, flying at low altitudes where manned aircraft would not have been safe from ground fire.30 The importance of pilot invulnerability was evident, yet UAVs were still only seen as facilitating selective attacks and not as weapons platforms in their own right.

Predator drones began operating in Afghanistan in 2000 as part of the Central Intelligence Agency’s (CIA) search for Osama bin Laden following al Qaeda attacks on US embassies in Kenya and Tanzania in 1998. The plan was to use a drone to direct a cruise missile to the target once he was discovered. A man matching bin Laden’s description was found, but attack orders were not issued. The mission faced a serious challenge when it came to ensuring that the target would remain in the same location while a missile traveled hundreds of miles to reach him. With this difficulty in mind, the CIA sought permission to arm a Predator with Hellfire missiles.31 Advocates claimed that mounting weapons directly on UAVs was the best way to eliminate a delay between missile launch and impact, which could otherwise allow a target to escape or endanger innocent people who might wander into the attack site. Thus, the impetus for arming Predator drones came from a desire to combine the pilot invulnerability of surveillance aircraft with weapons that were more selective than cruise missiles.

The first targeted killing with a Predator UAV took place on October 7, 2001, and was directed against Mullah Omar, the leader of the Taliban. The plan was to kill several bodyguards, which would then draw Mullah Omar into the open where a second missile would be able to strike him. However, the target was able to escape, leaving only a few low-ranking bodyguards as casualties. Control of the Predator used in the attack was contested from the start, as “the drone was remotely piloted by USAF operators, working from a mobile station in the carpark of the CIA’s headquarters in Langley.”32 The CIA had overall authority over the strike, but the Air Force insisted on being involved, and the CIA was obliged to assent because of collaborative arrangements between the military and intelli-
gence services that were designed to facilitate the War on Terror. Failure to kill the target escalated the tensions between the services involved and fueled a protracted struggle over the management of lethal UAV operations.

Over the following months the CIA began arming its Predators and using them to conduct additional strikes against suspected al Qaeda and Taliban leaders in Afghanistan. With only around 40 missiles fired in October and November 2001 compared to more than 6,500 strikes by manned aircraft, the Predator’s contribution to the war effort was modest. Singer estimates that Predators had only launched independent attacks on 115 targets in Afghanistan by the end of their first year in the conflict. They were more commonly used to mark targets for manned aircraft, assisting in around 525 strikes during the first two months of fighting in Afghanistan. The Bureau of Investigative Journalism estimates that just 52 strikes were carried out during President Bush’s time in office, resulting in 416 deaths, including approximately 167 civilians. Reliance on armed drones therefore developed slowly throughout the Bush administration’s time managing the program.

In terms of numbers alone, the scale of drone strikes was comparatively modest from 2001 to 2008, but the geographical scope expanded considerably. Targeted killing operations spread to Yemen in 2002, when a suspected participant in the attack on the USS Cole, Qa’id Salim Sinan al-Harithi, was assassinated. He and five other members of al Qaeda were killed as they were driving, which further demonstrated the drones precision by showing that they could hit moving vehicles. Operations in Pakistan began in June 2004 with an attack in South Waziristan. This killed Nek Mohammed, a senior Taliban leader, but also killed two young boys and several other bystanders who may have been civilians. The attack highlighted how opaque these operations were, particularly when it came to attribution, as Pakistan’s government initially claimed responsibility for the attack. It was also evidence of the tenuous relationship between Pakistan and the United States. The Pakistani government had authorized the attack following its failure to capture Waziristan with ground forces, and yet it still publicly criticized American actions. Attacks like these fueled concerns over the morality of drone warfare, and especially of the unintended consequences of using weapons that could improve precision while also making pilots invulnerable to attack.

The Bush administration’s drone strikes increased sharply in 2008. It launched around 36 attacks in Pakistan, where the previous annual high
had only been four. This trend continued under the Obama administration, with 54 strikes in 2009, more than in all previous years combined. Drone operations in Pakistan reached their peak in 2010, with roughly 122 attacks. The height of activities in Yemen came two years later with around 41 strikes. The Bureau of Investigative Journalism estimates that around 421 UAV attacks have occurred in Pakistan since the start of operations in 2004, resulting in 2,476–3,989 people killed and 1,158–1,738 injured. Since 2002, between 107 and 127 strikes have taken place in Yemen, with 492–725 people killed and 94–223 wounded. The Bureau of Investigative Journalism also estimates that the civilian death rates among the total casualties in drone strikes are between 11 percent and 39 percent in Pakistan and between 9 percent and 21 percent in Yemen.

Prior to mid-2008, the United States launched drone strikes in Pakistan when it was able to identify the location of a named individual leader of a militant group. These “personality strikes” were few in number; only two were launched in 2006 and four in 2007. These rules of engagement were altered in early 2008 to allow attacks against groups of armed men that bore the “signatures” of militants, as long as no civilians were nearby. Off-the-record explanations by American and Pakistani officials were summarized in the following terms:

> Instead of having to confirm the identity of a suspected militant leader before attacking, this shift allowed American operators to strike convoys of vehicles that bear the characteristics of al-Qaeda or Taliban leaders on the run, for instance, so long as the risk of civilian casualties is judged to be low.

Another journalist used the following examples to describe the new procedures: attacks from drones could be launched “based solely on intelligence indicating patterns of suspicious behavior, such as imagery showing militants gathering at known al-Qaeda compounds or unloading explosives.” The emergence of signature strikes showed growing confidence drones as the key to killing terrorist leaders with minimal American losses, but it contributed to moral concerns that drones were making war too easy.

Shortly after this shift in policy, the number of drone strikes increased to 34 in 2008, 53 in 2009, and 119 in 2010. This reliance on patterns of behavior that resemble those of militants the United States wishes to target, but who cannot be positively identified, soon attracted concerns from
within the United States government. One American official critical of this policy stated that “it bothers me when they say that there were seven guys, so they must all be militants. They count the corpses and they’re not really sure who they are.” Internal, classified assessments of most drone strikes conducted from 2006 to 2008 and in 2010 and 2011 call many of the unidentified individuals “foreign fighters” or “other insurgents” or members of militant groups, such as the Pakistan Taliban and Lashkar i Jhangvi, who have not regularly targeted the United States.

Beginning in early 2012, the United States developed new procedures to govern drone strikes in Pakistan. Many of these focused on ensuring that no civilians were likely to be harmed by drone strikes, as it became clear that civilian deaths were attracting increasing criticism from political parties and other groups within Pakistan. That is to say, the policies were driven by a desire to further improve the selectivity of drones with a policy-oriented approach to how they were employed. This move to tighten and institutionalize the conditions under which it was permissible to launch drone strikes was associated with a decline in their use to 73 attacks in 2011 and 48 in 2012. The shift also suggests that the rules governing the use of drones in earlier years was considerably more elastic and that more attacks were justified by the activities or location of the target than by precise intelligence on the target’s affiliation.

Although it has attracted much less media coverage than other fronts in the War on Terror, the Philippines have been the site of at least one attack. The first reported incident came in 2006, with a failed attempt to kill Umar Patek, one of the terrorists responsible for the Bali bombing in 2002. However, this incident has not been confirmed by any official sources and it remains unclear whether claims of American involvement are accurate. Some say that the February 2012 attack against members of Abu Sayyaf and Jemaah Islamiyah was the first drone strike in the Philippines. Given this degree of uncertainty, it is impossible to say how many strikes have been carried out and how many casualties inflicted.

In Pakistan, Yemen, and Somalia, the United States used drones in conflicts to which it was not an official or declared party. Drone strikes have also taken place alongside other types of American military action in conflicts where the United States is a combatant. The numbers for Afghanistan, Iraq, and Syria are also difficult to discern. With ongoing fighting in these countries, there are challenges in identifying the source of some attacks based on publicly available reports. It is often difficult to tell
when a strike was conducted by a drone and when a manned aircraft was involved, especially when reports often refer to both simply as “air strikes.” Nevertheless, it is clear that UAV operations in both countries were extensive. One report finds that there were at least 333 attacks in 2012 alone. A report published in 2014 found that “Afghanistan is the most heavily drone-bombed country in the world” with “over 1,000 known to have hit the country in the past 13 years.” And these strikes do not come from the United States alone. The British government reported flying over 100,000 hours in Afghanistan as of 2012, firing 349 missiles.

As the Obama administration came to rely more heavily on drones to kill foreign militants, it also spread operations into new areas. The first drone strike in Somalia came in June 2011, wounding several members of al Shabab and foreign militias. Activity in Somalia has consistently been much lower than in other theaters, reaching a peak of around five strikes in the first half of 2016. Between 15 and 19 strikes were carried out in Somalia, resulting in between 25 and 108 deaths and between 2 to 7 injuries. Once again the attack was preceded ongoing unarmed reconnaissance since at least 2009, when an unarmed drone was shot down. This was also reportedly the first time the CIA and Joint Special Operations Command collaborated on a drone strike.

Other operations were conducted in Libya. The Pentagon acknowledged carrying out 145 drone attacks between April 23 and October 20, 2011. Drones from the United States and the United Kingdom continued patrols over Libya during the following years, occasionally launching attacks. The operations were justified as part of the effort to monitor first al Qaeda and then Islamic State operatives. In November 2015 drones killed Abu Nabil, the leader of Islamic State in Libya. And involvement seems set to increase with the United States acquiring an airfield in Sicily from which to conduct drone missions in support of special operations forces working in Libya.

It is useful to reflect on this history with help from research on military innovation. That literature shows that technological and organizational changes can come from a range of different sources, including pressure from civilian politicians, inter-service dynamics, institutional cultures, and bottom-up initiatives from soldiers themselves. The impetus for change and the overall process vary considerably depending on the technology in question, with larger projects tending to require a top-down approach and field modifications or new uses for existing equipment being pioneered.
through bottom-up approaches. A military conservatism that frequently impedes technological innovation of all types was responsible for limiting enthusiasm for drones throughout the Cold War and reluctance to arm them. Horowitz, Kreps, and Fuhrmann argue that drones offer relatively few advantages during conventional interstate wars because they are more susceptible to enemy aircraft and air defense systems than aircraft with onboard pilots. Drones become far more attractive during asymmetric conflicts in which the enemy lacks anti-aircraft capacities. As long as the Air Force was preoccupied with a conventional war-fighting mission, there was little to gain from arming drones. It took a new mission and external pressure from intelligence agencies and the highest levels of government to overcome this conservatism.

The rise of drones from relatively obscure reconnaissance aircraft to central weapons in America’s War on Terror was guided by the novel incentives that policymakers were responding to at the time, especially the challenges associated with hunting suspected terrorists. Intelligence collection and attack functions had to be linked more closely, and it became essential to direct violence narrowly at specific individuals. Once drones were armed, the early innovations were largely driven by inter-service dynamics. The Central Intelligence Agency and the Air Force collaborated on missions while also striving to develop the foremost targeted killing capacities. The Air Force had a cultural bias against launching remote attacks because these conflict with a sense of honor that depends on physical presence on the battlefield. However, competition for resources and missions is a powerful incentive, which compelled it to begin arming its own aircraft even though this conflicted with the institutional culture.

Drones were used sparingly early in the War on Terror because the initial motives for arming drones had limited reach. The central targets were a relatively small number of high-profile terrorists, so the scale of operations was naturally limited. A more concerted effort to employ drones only emerged when members of the Bush and Obama administrations, along with supporters in Congress, decided to rethink the country’s strategy. Barry Posen argues that “Even in its own war, a military organization can misperceive the implications of a new technology unless the lessons are very stark.” This is borne out by drones, as the military and intelligence agencies had developed a revolutionary new tool as a counterterrorism expedient without this initially having much influence on the US counterterrorism strategy.
Posen contends that major failures cause civilian politicians to intervene in military affairs and force technological change, which explains why the number of strikes rose sharply in 2008 and the scope of targeting parameters increased. By this point, the wars in Iraq and Afghanistan were losing support and the quest to kill Osama bin Laden was failing. Efforts to revive the war effort through troop surges led to protracted partisan disagreements. Drones offered an attractive new approach without further risk to American military personnel at a time when public support was fragile, and they have since held the promise of sustaining counterterrorism operations around the world without the risk of committing large numbers of ground forces. This history of political incentives driving drone innovation highlights the importance of understanding what these incentives are and how they will continue to shape the use of drones in future conflicts.

As this brief history of drone operations illustrates, UAVs are versatile machines, capable of ISR, ground support, targeted killing, and even air-to-air combat against enemy aircraft (though this capability has received relatively little testing). Not all UAV missions are targeted killings. The drones operating in Afghanistan and Iraq also provide support for troops on the ground. Former drone operator Matt Martin describes using a Predator drone to search for and attack mortar crews that were shelling American airbases in Iraq. Drones are also not the only means of conducting targeted killings. Various manned aircraft, cruise missiles, and special operations forces have been involved in these missions, even operating beyond established war zones with their attacks taking place in Pakistan, Yemen, and Somalia. This is evidence that drones are not uniquely connected to any particular mission type and that policymakers and military commanders have a range of attack options available to them. Building on this, one of the central themes of this book will be how members of the civilian public react to policymakers’ choices about what weapons and tactics are most appropriate.

Drones come in dozens of variants that perform a broad range of roles, from long-range targeted killing operations to short-range tactical surveillance to bomb disposal. The ScanEagle, RQ-14 Dragon Eye, and RQ-11 Raven each provide short-range unmanned reconnaissance, allowing ground forces to check potential ambush sites or gain greater situational awareness via an overhead view of combat areas. Drones like the PackBot and TALON were employed to defuse or detonate improvised explosive devices (IEDs). Like armed UAVs, these machines owe much of
their popularity to their applications in the War on Terror. The PackBot was first used to help in 9/11 recovery efforts. Reliance on it and other ground-based UGVs has been accelerated by the demands of finding ways to protect soldiers in counterinsurgency operations, especially in urban environments.

Since 2001 the US military has used the RQ-4 Global Hawk to conduct surveillance around the world. The aircraft can carry an array of different ISR packages, operates at heights of 60,000 feet, and is able to fly continuously without refueling for more than 25 hours. The RQ-170 Sentinel is a smaller and lighter drone that is likewise used for covert reconnaissance. This machine achieved prominence when one crashed in Iran in 2011, yet it remains shrouded in secrecy and little is known about its capacities. Reconnaissance UAVs face criticisms for infringing on privacy rights, violating state sovereignty, and being dangerously unreliable because of their high crash rate compared to manned aircraft. Nevertheless, the fact that they are not used to kill means that they generally evade media coverage and are marginalized in the ongoing debate over drone warfare, which is typically concerned with lethal machines. Our focus is on UAVs that are used in targeted killing and ground support operations, with the MQ-1 Predator and MQ-9 Reaper foremost among these.

The Predator was designed for reconnaissance, not combat, and was only gradually adapted for fighting. Those responsible for drone operations in the CIA saw arming Predators with AGM-114 Hellfire missiles as a practical necessity—the only way to quickly respond to the targets located when conducting surveillance. Because Predators are extremely light (weighing only around 1,030 lbs. empty and 2,250 lbs. when fully loaded) and were designed for reconnaissance, they are unable to carry the heavier weapons that are typically mounted on manned aircraft and are limited to two Hellfire missiles. The Reaper improves on this with its capacity to carry multiple types of munitions, including GBU-12 Paveway II laser-guided bombs, GBU-38 Joint Direct Attack Munitions (JDAMs), AIM-9 Sidewinder missiles, and the AGM-114 Hellfire II missiles that are used by the Predator. Moreover, Reapers can carry heavier loads, enabling them to operate longer and to attack more targets. These capacities are not always used in practice. Sidewinder missiles are designed for air-to-air combat, in which no Reaper has been involved. Outfitting the aircraft with JDAMs is difficult and was only successfully tested in 2017. This leaves Reapers depending primarily on GBU-12s and AGM-114s, though still with the
significant advantage of being able to carry heavier munition loads than its predecessor.

Understanding How Drones Influence Support for the Use of Force

Over time, drone technology has become increasingly selective and has made operators largely invulnerable to enemy fire. Our goal is to assess how these developments influence the public’s willingness to support the use of drones on the battlefield. One seemingly straightforward source of answers is public opinion surveys. Surveys asking about support for the use of drones in combat, or about the utility of different types of military force, are conducted frequently. Such surveys, though, are not intended to shed much light on the research questions motivating this book, leading us to rely primarily on survey experiments we designed with this specific goal in mind.

Consider, for example, the data in table 1.1, which summarizes the support for drone strikes among representative samples of Americans during 2012 and 2013—when the drone campaign received significant and often negative coverage in the media—in surveys carried out by different news and survey organizations. In every poll, a majority—and in some case a large majority—express support for drone strikes overseas against targets described as terrorists or militants. Drone strikes, then, appear to have wide support. But this tells us little about why drone warfare is popular. We do not know if the public supports drones because they are seen as more accurate or effective weapons, or because they eliminate concerns about military casualties, or because the foes they target are viewed as especially dangerous, or for other reasons. Furthermore, these high levels of support for combat drones are sensitive to how the survey questions were asked.65

One issue that public opinion surveys could address, at least in principle, is support for drones compared to other policies, such as relying more heavily on diplomatic efforts or different types of military force, such as ground troops. A window on such issues is provided by the public debate about the wisdom of American action against Islamic State militants during the summer and fall of 2014. This occurred shortly after the Islamic State had seized control of large parts of northern and western Iraq and
eastern Syria and had publicly executed an American journalist. Political leaders debated both the wisdom of intervention as well as the form any such intervention should take. Much of this debate centered on the type of military action, if any, the United States should undertake. A number of public opinion organizations polled representative samples of the American public and asked the degree to which they favored or opposed a range of steps being considered by the United States.

Consider the data in the top panel of table 1.2, which summarizes responses to questions about different types of intervention in public opinion surveys conducted during this period. A sizable majority of respondents favored air strikes in Syria and in Iraq, while far fewer supported the introduction of American ground troops. This is consistent with the argument that technologies that reduce the costs of conflict by placing fewer military personnel at risk of harm, such as drones and air power, lead to increased support for the use of force. The lower panel of

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<td>February 2013</td>
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<td>February 2013</td>
<td>NBC/Wall Street Journal</td>
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<td>February 2013</td>
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<td>May 2013</td>
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<tr>
<td>May 2013</td>
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Table 1.2 depicts responses to questions that asked respondents if they favored the use of drones and manned aircraft in striking the Islamic State. This pair of questions is especially useful for our purposes, since it directly compares the utility that members of the public attach to different types of military action.

Drone strikes received considerably more support than attacks from manned aircraft, which is also consistent with the argument that reducing the costs of war increases support for the use of force. Unfortunately for our purposes, neither of these surveys included questions asking about support for drone strikes, air strikes from piloted aircraft, and the use of ground troops, making it impossible to know how the public compares these different forms of military action. Furthermore, the questions in this and most public opinion surveys are intended to measure support for various options, not to assess directly why respondents express the preferences that they do. Yet doing so is important for understanding how changes in the cost of conflict influence public support for the use of force. In the next section, we argue that an experimental approach is better-suited for this purpose, and we summarize results from a series of experiments that are designed to directly test such propositions.

While survey research assembles a group of respondents who are representative of some larger population (such as adults in the United States) and asks them all the same questions, a survey experiment assigns respondents randomly to control and treatment conditions. In our work, these conditions take the form of providing respondents with different information about a planned military attack. For example, in a version of the

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<th>Favor</th>
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<tr>
<td>Air strikes in Syria</td>
<td>69</td>
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<td>Military advisors to Iraq</td>
<td>66</td>
<td>29</td>
<td>6</td>
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<td>Train and equip Rebels</td>
<td>48</td>
<td>40</td>
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<td>US ground troops</td>
<td>39</td>
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</tr>
<tr>
<td>Drone strikes</td>
<td>56</td>
<td>38</td>
<td>6</td>
</tr>
<tr>
<td>Manned aircraft</td>
<td>43</td>
<td>51</td>
<td>6</td>
</tr>
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Note: Data from CBS/New York Times public opinion surveys released September 17, 2014 (top panel) and June 23, 2014 (bottom panel). Totals do not equal 100 due to rounding.
“attack type” experiment we use in most chapters of the book, respondents are randomly assigned to read online one of three mock news stories describing plans by the United States to use military force. These three conditions are identical except in their description of the type of military action to be undertaken. In one condition, respondents read about a planned drone strike; in another, about an attack by piloted aircraft; and in third, about the use of American ground troops.

Survey experiments such as this, which form the core of our empirical analysis, have two key advantages for answering the research questions motivating this book. First, their conditions are designed to answer specific research questions. Unlike the survey research about the Islamic State, the experiment described above includes conditions for the three types of military force that social science theory suggests should produce different patterns of responses. The foundation of this approach is the product of a great deal of research that finds that respondents’ attitudes and opinions are heavily influenced by the context in which survey questions are answered. In our survey experiments, this context is the information included in the conditions, such as the type of military force employed. Second, survey experiments allow us to conclude that such differences are causal rather than coincidental. Since respondents are randomly assigned to conditions, it is reasonable to conclude that any differences we find across conditions are due to their content rather than some other factor.

We recruited respondents for our survey experiments from two sources. The commercial survey firm YouGov provided respondents for two experiments. YouGov maintains a large panel of individuals willing to take surveys in exchange for points that can be redeemed for gift certificates and other items. Since individuals willing to complete surveys may not be representative of the adult population in the United States, YouGov matches samples drawn from its panel with samples drawn from the population at large, using probability sampling based on a range of individual characteristics such as age, partisan identification, and other political and demographic characteristics. The YouGov approach to panel recruitment and matching is now widely used in research on public opinion.

For the remainder of our experiments, we recruited respondents from Amazon’s Mechanical Turk, an online labor market where individuals complete tasks, including surveys, in exchange for small payments. Mechanical Turk has quickly become one of the most common sources of respondents for online experiments in the social sciences because of its
flexibility and low cost compared to more representative samples. It differs from online respondent panels provided by firms such as YouGov in one important respect. YouGov panels are designed to maximize the similarity between samples and a larger population, such as adults in the United States. In contrast, Mechanical Turk samples differ from the adult population in systematic ways; respondents are typically younger and more politically liberal, for example. This difference raises an important question: can we draw conclusions about how Americans in general think about and evaluate combat drones when using Mechanical Turk survey experiments? In other words, do the characteristics that distinguish our Mechanical Turk respondents make them likely to respond differently to experimental treatments?

This is an important concern, which we address in a number of ways. The first is to acknowledge that the primary goal of this book is to understand how a new military technology, combat drones, alters what existing theories tell us about the public’s support for the use of force. In other words, the primary goal of our experiments is to test theory. Experiments are the ideal tool for achieving this goal, because they provide the researcher the ability to control conditions and treatment assignment, which permits one to conclude that any findings are most likely caused by random assignment to different conditions, rather than by other, potentially confounding factors. At the same time, we do think there is some scope to conclude that the experimental effects we report are likely to occur not just among members of our Mechanical Turk convenience sample, but also among other samples. The similarity of experimental results conducted with probability and convenience samples has been subject to a large body of research in recent years, and much of this work finds that conditions produce similar effects across these types of samples, especially when relevant covariates are included in statistical models. We build on this line of work as well; in chapter 3, we report the results of identical survey experiments on our probability and convenience samples conducted within a few weeks of each other and find that these two groups of respondents reveal qualitatively similar results. Although our work is not designed primarily to produce estimates of how the population at large would respond to our experimental conditions, these factors do suggest that future research could begin with the expectation that there would be a close correspondence between probability and convenience samples on this topic.

Our research approach is designed to maximize the transparency of the
data and process of analysis we use in reaching our results. All of the data and analysis code is available for other researchers to inspect and to use in their own work. We also preregistered the research design for the two experiments that relied on a nationally representative sample of respondents and one experiment that recruited respondents from Mechanical Turk. Prior to receiving the data from these experiments, we pre-registered our plan for using this data to test hypotheses about how drone technology influences support for the use of force. Pre-registration is, among other things, a form of committing in advance to our hypotheses. By declaring in advance the data we plan to collect, how many respondents would be included, and how we would analyze data from our experiments, it reduces the incentive to conduct analyses after the fact in a manner that is consistent with our hypotheses. This should increase readers’ confidence that the results reported from these experiments have not been subtly shaped by pressure to report novel or statistically significant analyses, and that they are based on the implications of drone technology that we deduce from existing theories of public opinion rather than post hoc theorizing.

Outline of the Book

Chapter 2 begins our empirical investigation, using a survey experiment with a representative sample of Americans to answer two questions. First, do attacks with drones receive more support than other attack types, such as the use of ground troops or air power? Second, how large is the effect of drones compared to other influences on support for the use of force? These questions are at the core of the debate about drones, but existing research has not addressed them directly. This chapter takes on this task, using a conjoint survey experiment that permits comparison of the effects of drones to many other factors that shape attitudes toward military action. It finds that attacks from drones do garner more support than other attack types, but that the size of this effect is moderate, roughly equal to other factors identified by previous research such as gender and the likelihood of military success.

Chapter 3 addresses one of the biggest potential benefits of and potentially serious objections against using drones: the possibility that pilot invulnerability may increase the incidence of war by allowing politicians to fight without provoking backlash from casualty-averse constituents.
The reasoning here is that states armed with drones would have few inhibitions against using them in combat when they would not sustain any military casualties—a result that could lead not only to more wars but also to a decline in democratic accountability. We discuss an experiment with a respondent pool representative of adults in the United States showing that attacks using drones, compared to manned aircraft or ground forces, do garner more support for the use of force and that this relationship is influenced by the fact that drones minimize the chance of military casualties. However, the shift in support is fairly small and is not the only factor that shapes attitudes about violent conflict. This indicates that drones are unlikely to cause a radical increase in support for military operations, and that their effects on the incidence of war have to be understood alongside many other considerations.

In chapter 4 we consider how support for the use of force is influenced by the type of policy objective being pursued. We show that public opinion is not only sensitive to the anticipated numbers of military casualties, but also to the goals and objectives of military force. Regardless of the weapons being used, counterterrorism operations receive the greatest support, followed by foreign policy restraint, internal political change, and humanitarian intervention. This demonstrates that the perceived urgency of a threat or perceived legitimacy of a mission exert a powerful influence on support for war, which is comparable to the influence of using drones rather than ground forces or manned aircraft. When considered alongside the data presented in chapter 3, this result provides grounds for developing a more complex understanding of how drones affect the support for the use of force than the common prediction that drones are apt to simply lower inhibitions against fighting.

Chapter 5 evaluates the argument that, because they lower the costs of conflict, drones create incentives for political leaders to engage in conflicts that have little chance of success. We hypothesize that people might be more willing to support drone strikes even when there are viable alternatives to military action, since the costs of mission failure (for example in terms of military casualties) would seemingly be low. If that is the case, it would have profound implications for when authorities can use force with the support of the public. It could free politicians to initiate conflicts that have a lower probability of success while also limiting the backlash they may face when an operation goes badly. The results of this experiment suggest that this is not the case, and that respondents continue to hesitate to support military action even when drones are available.
Chapter 6 argues that the absence of military casualties will increase attention to civilians harmed by drones. Drawing on insights from psychology about “counterfactual thinking,” we theorize that selectivity raises expectations about the results that will obtain when selective weapons such as drones are employed. Drones make it easier to avoid inflicting civilian casualties, and the public adjusts its expectations with this in mind. A first survey experiment tests these conjectures about how drone 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, even though the actual outcomes across treatments were identical. This effect weakens when precision strikes are carried out by manned platforms. We also argue that people expect their leaders to exploit the selectivity that drones create and to plan their attacks in ways that minimize the risk of killing civilians, especially when doing so does not reduce their ability to achieve military objectives. A second survey experiment assesses this expectation and finds that support for the use of force declines when attacks place civilians in harm’s way unnecessarily. This effect strengthens when respondents are informed that the attack violates international law, suggesting that legal and moral norms exert an independent influence on assessments of the use of force. Importantly, the differences remain even when the group targeted with an attack is described as directly threatening the United States, indicating that individuals are not willing to “trade” the risk of civilian death for greater security.

The concluding chapter analyzes the implications of the findings reported in the book for the ethics of the use of force. By removing the possibility of American military casualties and appearing to be very selective, drone technology may tempt leaders to ignore the ethical injunctions of just war theory and instead to use drones to achieve quick and low-cost military successes. The empirical results of the book can help to inform this debate by providing evidence about the extent to which the American public values avoiding military casualties.