Killing at a Distance: A Construal Level Approach to the Psychology of Drone Operation

Kathleen E. Powers
Dickey Center for International Understanding and Dartmouth College*

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Introduction

Over the past decade, the military use of unmanned aerial vehicles (UAVs), commonly referred to as drones, has risen dramatically. Today, the Pentagon possesses more than seven thousand of these unmanned aircraft — compared to roughly fifty a decade ago. Many are used exclusively for surveillance purposes, but increasing numbers of Predator and Reaper drones have been outfitted with missiles over the past decade. The U.S. military has used armed UAVs to carry out air strikes in Afghanistan, Iraq, Yemen, Somalia, and Libya, and by the CIA to execute targeted killings of suspected militants in Pakistan. The raw number of drone attacks illustrates this trend: Under President George W. Bush, there were 42 drone strikes from 2004 to 2008; by 2014, the Obama Administration has authorized 369 strikes in Pakistan alone[1] (Bataoel, 2011). It is safe to assume that this trajectory will continue well into the future, as UAVs are quickly becoming an integral component of military technology for the United States, while other states seek to end the U.S. monopoly over drones by developing their own programs as in China and Turkey (not that the process of diffusion will be without challenges for other states e.g., Joshi and Stein, 2013, Horowitz, 2010).

It is clear, then, that the changing landscape of contemporary warfare demands attention from

*Email powers.276@osu.edu

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[1]Current data are available from the Bureau of Investigative Journalism.

political scientists. Work to this point has studied UAVs from several angles, including the extent to which the use of drones is consistent with the just war tradition in international law (O'Connell, 2009; Brunstetter and Braun, 2011), the ethics of engaging in war with asymmetric risk distributions (Bellamy, 2005), political fallout in target states (Bergen and Tiedemann, 2011), effectiveness (Smith and Walsh, 2013), and broader discussions of targeted killing as a policy tool (Carvin, 2012; Williams and Plaw, 2009). More recently, scholars have begun to investigate the determinants of public opinion about the use of drones by the United States. Scholars scrutinize the public's understanding of domestic and international law (Kreps, 2014) and their concern for civilian casualties when the U.S. deploys precision weapons (Walsh, 2014). Such studies gain particular traction at a time when scholars and journalists alike have expressed concern regarding the mounting civilian casualties that have resulted from precision strikes. In Pakistan, for example, estimates range from 423 to as many as 965 civilians killed by drone strikes — with more than 1,000 others injured.

This project raises a related question, spurred by the legal and ethical considerations brought to light in previous work: how might the vast distance separating drone operators from their targets alter the tactical decision-making process? There is no denying that drone technology revolutionizes warfare by making remote action possible. Whereas in the past the proverbial button to launch a missile was pressed by a pilot flying 20,000 feet above the target, now the controls are in the hands of teams of UAV operators working in places like Nellis or Creech Air Force bases in Nevada, some 7,500 miles away from the site of the air strike. Not only does this insulate a drone operator from physical danger, it also introduces an unprecedented level of separation between the operator and her target. The nature of drone warfare thus involves an extraordinary degree of what scholars refer to as *psychological distance* (a construct discussed in detail below; see Trope and Liberman, 2010 for a review). To this point, writers have often assumed — implicitly or explicitly — that distance removes barriers to the use of force, but direct evidence as to its potential or actual effects remains sparse. Surprisingly little scientific evidence has been presented to address this question.

This study serves as a first step in understanding whether and how this new remote technology alters the "psychological barriers to killing" that proximity presumably imposes (Singer, 2009).[2] I ask what effect psychological distance might have on a drone operator's threshold of attack, and

[2] I thus focus here on technology that still requires action on the part of a human operator, to the exclusion of fully autonomous weapons. See e.g., Horowitz (2014) and Carpenter (2013) for discussions of autonomous weapons where humans are neither 'in' nor 'on' the loop.

how it shapes their attention to details about potential civilian casualties. The latter has important implications for what we know about decision-making at the level of the tactical operators, who are faced with vast amounts of information and a high degree of time pressure when the moment to strike presents itself (Banks and Dhami, 2014).

I draw on construal level theory from psychology to develop the theoretical connections between psychological distance and a person's decision to launch a drone strike in the face of potential civilian casualties. I then test the resulting hypotheses in an experiment, where I ask participants to take the perspective of a drone operator conducting a targeted strike. I do not find evidence that psychological distance affects individuals' general willingness to launch a strike, but that it does result in a greater tolerance for civilian casualties — particularly among participants with relatively low levels of political knowledge. I also find that individual difference variables such as strong national identification and conservative ideology are associated with greater propensity to strike, and that the strength of one's commitment to the nation drives the strike decision for high knowledge individuals.

The paper proceeds in five parts. In the first section, I review extant knowledge about the role that distance plays in human decisions to kill during war. I then discuss the importance of studying decision-making in modern drone operation. I introduce construal level theory to explain the psychological mechanisms through which distance could alter a drone operator's decision calculus. In the next section, I present several theoretically derived hypotheses about the factors that influence strike decisions in the context of drone operation. The third and fourth sections, respectively, discuss the experimental design and report the results. Finally, I conclude by summarizing the implications of the findings as well as proposing avenues for future research.

2 Background and Theory: Killing at a Distance

Existing work on the contemporary use of drones reveals competing hypotheses regarding the effect of distance on a UAV operator's threshold of attack. One perspective asserts that distance increases the probability that a person will use deadly force — drone operators in this view are more trigger happy than they would be if they were piloting aircraft or part of a ground invasion. The Milgram 1974 obedience studies offer an early illustration. Concerned with the factors that would alter a

person's obedience to authority when it involved causing harm, Milgram (1974) finds that proximity to the victim is important. When the "student" being shocked sits in a separate room from the "teacher" issuing shocks, the teachers comply with directives to continue shocking the other person at a high rate. Only 35% of participants defied the authoritative experimenter in this condition, meaning that 65% continued issuing shocks to the maximum level, long after their "student" stopped responding and showed signs of distress. Rates of defiance rose steadily with increases in proximity, reaching 70% when the participant had to physically touch the other person and move their hand to a plate to be shocked. Distance, it seems, encourages obedience when the assigned task involves direct harm.

More germane to the present research, Grossman (2008) explores the psychological barriers to killing experienced by soldiers in combat in his book *On Killing*. He argues that killing from a distance is relatively easy — it becomes progressively more difficult as one becomes closer to the victim. It is less challenging, psychologically, for a person to shoot someone with a gun than it is to strangle them or strike a deadly blow during face-to-face combat. Jones (2006), a psychiatric historian, studies the causes of psychological distress in soldiers during World War I, and finds that closeness to enemies on the battlefield predicts psychiatric problems. He maintains that it is considerably different to shoot a man at 400 yards — a distance from which the damage caused by the bullet to his body was largely unseen — and cutting a man's throat. In both accounts, the option that necessitates proximity and a more visceral interaction with the victim proves more difficult or psychologically damaging (Jones, 2006, 237). If distance lowers barriers to killing, drone technology can create conditions ideal for facilitating the use of deadly force. It removes operators sufficiently far from the site of the attack that they "[abstract] people from contexts, thereby reducing variation, difference, and noise that may impede action or introduce moral ambiguity" (Wall and Monahan, 2011, 239).

Moreover, some scholars propose an additional mechanism through which drone operation should facilitate the use of deadly force. They turn to the nature of surveillance imaging, to argue that it depicts enemies "not as humans but as blips on a screen" to emphasize the disconnect that occurs with vast distance (Shurtleff quoted in Singer, 2009). Further, the fact that drones are operated using computer platforms that resemble sophisticated video games — not to mention that the U.S. military actually uses video games as recruitment tools (Davies, 2009) — leads some observers such

as Alston and Shamsi (2010) to decry the "PlayStation mentality" surrounding drone strikes against enemy combatants:

> Young military personnel raised on a diet of video games now kill real people remotely using joysticks. Far removed from the human consequences of their actions, how will this generation of fighters value the right to life? How will commanders and policymakers keep themselves immune from the deceptively antiseptic nature of drone killings?

In short, Alston and Shamsi, Shamsi, and others like them worry that the great separation between operators and targets made possible by drone technology leads them to ignore the human consequences of warfare. According to this perspective this separation makes killing somehow easier or more permissible in the minds of operators, and leaves more room for operators to cast aside concerns for the collateral damage caused by a strike. Disconnected from the deaths of non-combatants that may be caught in a strike, focused on the goal of hitting their target, operators could choose to strike when they otherwise would not due to heavy civilian costs — with implications for how tactical decisions comply with the just war tradition (Brunstetter and Braun, 2011; Walzer, 1977).

An alternative perspective suggests the opposite — that the psychological distance from which drone pilots operate has no bearing on their inclination to use deadly force. On an intuitive level, it seems reasonable to suggest that spatial and social distance from the location of an attack might allow UAV operators to exercise more caution in launching strikes because they are not caught up in the heat of the moment. They might engage in more rational, utility maximizing decisions whereby they minimize undesired consequences (Edwards, 1961).

Some arguments go further to suggest that drone operators actually feel *more* connected to events on the ground, not less so, despite the distance. For instance, one former F-16 pilot compares the experience of flying an F-16 with operating a drone as follows: in the airplane, "you come in at 500-600 miles per hour, drop a 500-pound bomb and then fly away, you don't see what happens," whereas with a drone, "you watch it all the way to impact, and I mean it's very vivid, it's right there and personal. So it does stay in people's minds for a long time" (Lindlaw, 2008). In this view, the distance from operators to targets is immaterial or even beneficial.

The goal of this study is not necessarily to adjudicate these competing hypotheses, and future work will be necessary to understand the psychological distance experienced by tactical operators

and others up the chain of command. Before asking to what degree operators feel the vast distance between themselves and their targets, I first seek a more comprehensive explanation for how distance affects decision-making at the tactical level. Does increasing psychological distance alter a person's decision to use deadly force in the context of a drone strike? If distance does not alter decision-making processes in a military context, then the question of whether operators feel close to their targets becomes moot. However, if I find that distance does change the way that people view their task of striking a target when negative consequences will result, the results pave the way for important research into variation in psychological distance among drone operators and what this means for U.S. foreign policy.

How Distance Affects Cognition: Construal Level Theory

Such questions and concerns about the use of drone technology have become fairly prominent (Wall and Monahan, 2011), but there has been limited progress in establishing a theoretical framework for the psychological processes at work. One article by Banks and Dhami (2014) reviews psychological research on heuristic decision-making and its applicability to precision strike technology. The authors propound the importance of studying the role of humans in strike decisions even as technology improves: "No matter how advanced the technology becomes, its effectiveness will be constrained by the humans who design, control, and use it" (Banks and Dhami, 2014, 33). In this section, I turn to social psychology to elucidate the mechanisms through which psychological distance might affect an operator's decision to strike their target when they can expect non-combatants to be caught in the crossfire.

Drone personnel tasked with carrying out strikes against suspected terrorists abroad are separated from the locus of their operation and target in unprecedented ways. While a sniper might be 800 meters from their target and aerial bombers fly high above their intended strike zones, the spatial separation between drone operators and the location of their missile target is much more drastic. Drone operators may also be more socially distant, as operating from the comfort of an air force base they remove themselves from the enemy combatant and the general experience of being "part of the action" on the ground or in the air. These factors, assuming they comport with many drone operators' psychological experiences (an open question), combine to create a large degree of what psychologists call "psychological distance" (Trope and Liberman, 2010).

Psychological distance refers to "a subjective experience that something is close or far away from the self, here, and now," and describes distances of many types including spatial, temporal (how far into the future you will experience something), social (how close you feel to another individual), and the hypotheticality of an event or object (Trope and Liberman, 2010, 440). A host of research demonstrates that these elements of distance are interrelated (Bar-Anan et al., 2007). Consider, for example, approaching a bench to take a seat and seeing that it is occupied on one end by another person. To the extent that you feel socially close to the individual — she is a friend or known acquaintance — you are likely to choose a spatial location that proximal to her. If the individual is a stranger, you instead prefer increased spatial distance, and choose a seat on the other end. Similarly, we imagine events that will take place in the distant future as being spatially far away and vice versa. The social and spatial distances presumed to be part of the reality of drone operations are similarly related and contribute to substantial psychological distance. I argue that such distance affects the cognitive processes involved in the drone operator's decisions about whether to launch an attack when doing so risks civilian casualties. That much has been previewed by previous work, but further theoretical depth remains necessary to understand why increasing distance should be associated with different propensities to strike.

Construal level theory (CLT) goes beyond demonstrating that different types of distance are interrelated; research also shows that psychological distance has a reciprocal relationship with how abstract or concrete someone understands and relates to objects in the world (the construal level). Construal level also has wide-ranging effects on mental processes and behavior (Liberman and Trope, 2003). Low-level construals refer to relatively concrete representations of specific objects or events, and are associated with psychological proximity (Liberman and Trope, 2003; Trope and Liberman, 2010). They are "relatively unstructured and contextualized representations that include subordinate and incidental features" (Liberman and Trope, 2008, 1201). In war, we might refer to an AK-47 or a B62 — concrete objects — at this level. Moving up to higher levels, though, the language and ideas become more abstract. Rather than distinguishing the minutiae, high-level construals "emphasize superordinate, core features of events and omit incidental features that may vary without significantly changing the meaning of events" (Liberman and Trope, 2008). In contrast to the AK-47 and B62 named above, the superordinate category "weapon of war" represents a high-level construal: it generalizes to a potentially broad but coherent category of objects but leaves out

idiosyncratic details. It implies the goal of war preparation but does not specify which weapons are relevant. Research demonstrates that increasing psychological distance is associated with such abstract, high-level construals.

Greater psychological distance activates high-level construals just as high-level construals prime perceptions of increased distance — the relationship is reciprocal. A person primed to think about the broader, abstract category "weapons of war" will estimate a hypothetical battle as farther away spatially, deeper into the future, and will think of the other side in the war as more socially distinct from herself. Unconscious and automatic processes activate this relationship, such that perceived psychological distance inspires more abstract construals without extensive deliberation by the perceiver (Henderson and Wakslak, 2010; Henderson et al., 2011; Trope and Liberman, 2010).

In addition, abstract construals prime people to focus on global trends (Trope, Liberman and Wakslak, 2007; Trope and Liberman, 2010), apply schema (Eyal et al., 2011), and maintain ideological consistency (Ledgerwood, Trope and Liberman, 2010). Each of these phenomena involve processes by which people abstract away from distant objects or events to focus on the superordinate goals, rather than precise details, and conserve precious cognitive resources (Krebs and Rapport, 2012).

Low-level construals instead emphasize local trends and concrete traits. In other words, high level construals — and psychological distance by corollary — lead individuals to focus on the general features of a task or object. Because abstract construals are associated with global concerns and superordinate goals, Fujita et al. (2006) reasons that individuals primed with high-level construals are more likely to make decisions that will serve those ends. They will focus on *why* they are completing a task, not *how* they are to meet their goal. Individuals on a diet who construe the option to eat a piece of cake at a high level, by focusing on the end goals of their diet, are more likely to forgo the opportunity to eat the dessert, despite the immediate gratification they would experience (Fujita, 2008). Psychological distance and abstract construals give way to individuals subordinating their immediate preferences in the interest of their long-term goals (see also Fujita, 2011). A drone operator, then, may undergo a similar calculation where it concerns the trade-off between successfully prosecuting the war on terror and knowingly sending a strike that could result in civilian deaths. If the protracted struggle to win the 'war on terror' represents her global concern, she should be more willing to launch a potentially risky strike; the immediate consequences of her action, beyond the

expected success in eliminating a target, should be less influential on her decision.

Psychological distance and construal level are concepts that have only recently been picked up by political scientists (Rapport, 2012; Krebs and Rapport, 2012), but psychologists have already shown that they are connected to a number of political phenomena including political communication (Menegatti and Rubini, 2013) and polarization (Luguri and Napier, 2013). In international relations, Krebs and Rapport (2012) suggest the implications of temporal distance and construal levels on prospects for cooperation, the timing of preventive war, and the likelihood that attempts at coercion will succeed. I aim in this project to contribute to this small but growing body of literature by applying the insights of construal level theory to the psychology of drone operation.

3 Hypotheses

Based on the theoretical insights and empirical findings from the construal level theory tradition, I develop a series of hypotheses about the psychology of tactical level drone operation. While many scholars and foreign policy observers have assumed that something about the distance between drone operators and targets a alters the way they make decisions removes barriers to the use of deadly force, the literature reviewed above provides a solid foundation from which to actually test these ideas. Because abstract construals encourage individuals to focus on superordinate goals, I expect that individuals presented with a high-level construal will be more likely, in general, to launch a strike against a terrorist suspect. This action supports the goal of winning the United States' 'war on terror.' This produces the first hypothesis:

> *Hypothesis 1*: Individuals are more likely to launch a drone strike against a terrorist suspect when primed with a high level construal, compared to when a low-level construal.

While many Americans support the use of drones to strike and kill terrorists abroad, Peter Moore from YouGov reports that the number of supporters decreases substantially — from 60% to 25% — when asked if they support strikes that may also kill civilians (Moore, 2013). Sara Kreps (2014) also finds that the American public has a stronger aversion to drone strikes that don't discriminate between combatants and non-combatants or reach the target as well as civilians, in violation of international law. Walsh (2014) further shows that precision weapons increase the salience

of civilian casualties — making people less tolerant of them. Combined with past research on general casualty aversion in the American public (see Aldrich et al. 2006 for a review), this leads me to expect a main effect of rising civilian casualties. As the number of projected civilian casualties from a strike increases, individuals' willingness to launch the strike should decline.

> *Hypothesis 2*: Individuals will be less likely to choose to launch a drone strike when faced with larger numbers of projected civilian casualties.

Because high-level construals lead individuals to focus on superordinate ends, however, this mindset should shift a person's focus away from the idiosyncratic details of a particular situation. Here, this refers to the number of projected civilian casualties. I predict an interaction between construal level and the number of projected civilian casualties. Individuals will be more tolerant of mounting collateral damage in the form of civilian casualties, and more willing to strike with deadly force, when they are primed with a high construal level than when they are primed with a low level construl and thus experience a greater degree of psychological proximity.

> *Hypothesis 2a*: Construal level will moderate the impact of projected civilian casualties. When primed with a high construal level, the effect of increasing civilian casualties on the propensity to strike will decrease.

I also expect that individual differences play an important role in tactical decision-making. Research in public opinion demonstrates that political knowledge facilitates an individual's ability to connect values and ideological principles to specific policy preferences (Zaller, 1992; Judd and Krosnick, 1989; Kertzer and McGraw, 2012). Highly knowledgeable individuals, those who on average receive copious political information, tend to report stable policy attitudes that are consistent with their abstract values. Those with lower levels of political knowledge base their foreign policy preferences on more middling attitudes or the specific event. They may also be less attentive to negative strategic political consequences which stem from high numbers of civilian deaths, and fail to consider e.g., how outside actors will perceive the action and how this might affect America's image abroad.[3] I expect that the construal level and number of projected civilian casualties will have a

[3] I thank Jim Walsh for an excellent discussion on this point

larger effect on the decision to launch a drone strike among participants with lower levels of political knowledge. In contrast, dispositional traits like a person's level of identification with the America, rather than the construal level manipulation, will drive the strike decision among high knowledge individuals (Herrmann, Isernia and Segatti, 2009).

> *Hypothesis 3*: The decision launch a strike will be shaped by distinct patterns among individuals with low and high levels of political knowledge. Predispositions will drive the decisions of high knowledge individuals, while low knowledge individuals will be more susceptible to changing features of the situation and abstract construals.

4 Methods and Materials

I conducted an online experiment in 3 waves during the winter, spring, and summer of 2014, to assess the above hypotheses and more broadly to understand the factors that influence an individual's propensity to launch a drone strike in the face of potential civilian casualties. The sample of 282 college students was recruited from undergraduate political science classes, where students were offered the opportunity to participate in exchange for extra course credit. Participants — 52.3% of whom identified as male and 80.07% as White/Caucasian — ranged in age from 18-45 (median: 21).[4] While this sample does not include the elite population of actual drone operators, the hypotheses here pertain to basic psychological processes and the causal relationships between construal levels, psychological distance, and the propensity to strike in the face of mounting civilian casualties. This experiment thus privileges internal validity as a first step in a series of important research questions, and a student sample is appropriate for testing these questions, though future research will seek to replicate the study in a more externally valid sample (Druckman and Kam, 2011).

The experiment was designed to asses the affects of high and low level construals of an enemy combatant and the number of projected civilian casualties on an individual's willingness to launch a drone strike at a target. The study proceeded as follows. First, participants responded to a series of items measuring their level of identification with the United States, with 4 items adapted from

[4]One participant did not complete the entire questionnaire, skipping the demographic questions at the end. The sample characteristics reported are thus based on the 281 participants who provided this information.

Herrmann, Isernia and Segatti (2009).[5] Following this, all participants were exposed to a short informational paragraph meant to orient them toward weaponized drones and how they are used by the United States. Next, I manipulated construal level through a brief vignette meant to prime an abstract (high level) or concrete (low level) construal of a terrorist target. In the abstract condition, participants were told to imagine that they are "using the drone to track and kill **individuals identified by the U.S. as part of the enemy**" and that "the U.S. needs to **eliminate their enemies in order to succeed and win** the war on terror." In contrast, participants in the concrete construal condition were instructed that they were "using the drone to track and kill **an individual – a 29-year-old man – identified by the U.S. as an enemy combatant**" and that "the U.S. needs to **use drone strikes to succeed in killing this individual as part of** the war on terror."[6] These manipulations prime different construal levels in two ways: 1) they describe either an abstract, amorphous "part of the enemy" (high) or a concrete target (low) and 2) they emphasize reasons *why* to conduct the mission — to eliminate enemies in service of the war and superordinate goal (high) — or *how* to go about it — by stressing the local and immediate goal of eliminating a particular terrorist (low) (Fujita, 2008).

Directly following the construal level manipulation, participants were asked to estimate the distance between drone operators and targets, using a slide bar ranging from 0-15,000 miles. This measure of distance was included as a manipulation check. Psychological research on construal level theory contends that construal level shapes psychological distance just as psychological distance shapes construal level (Trope and Liberman, 2010). I expected that participants in the high construal condition would estimate a greater spatial distance. Spatial distance is only one component of psychological distance, though, and the manipulations are also meant to influence social distance, differentiating between an amorphous 'enemy' and a clearly identifiable '29-year-old man' with whom participants should more readily identify as socially proximate to themselves.[7]

Next, participants were presented with a scenario where they were instructed that they had a target (or the specific target for those in the low construal condition) in range and they could choose whether or not to launch a strike against it. Here, the expected number of civilian casualties that

[5] Cronbach's $\alpha = 0.62$; 17 participants indicated that they were not American citizens, and did not respond to the questions about American national identification. Their data are excluded from analyses that consider the role of national identification.

[6] Emphasis is added here to demarcate the contrasting language between the two conditions, and was not present in the actual stimulus. See appendix §1 for full text of the materials.

[7] Thank you to Aaron Rapport for a helpful discussion on this point.

would result from the strike also varied, creating low (1), medium (18), and high (48) casualty conditions in an attempt to mimic the real trade-offs that tactical drone operators face when choosing whether or not to hit a target when civilians are in the vicinity of the strike zone. While operators track targets for extensive periods of time, they must assess whether a given moment is the right time to strike — a calculation that may incorporate information on whether the target is in a sparsely populated rural area or militant training zone absent civilians, or in a village heavily populated by civilians unconnected to combatant groups (Banks and Dhami, 2014). This results in a 2 (high vs. low construal) x 3 (1, 18, or 48 projected civilian casualties) between-subjects design.

After being presented with this information, participants reported on a 5-point scale (ranging from "Definitely not" to "Definitely yes") whether they would choose to launch a strike at their target. A one-shot decision like this abstracts from the real decision-making environment in which tactical operators maneuver, but replicates the time pressure they are under once a target is in range (Banks and Dhami, 2014). For the analyses reported below, this measure was recoded as a dichotomous variable indicating that a participant would not strike ("Definitely Not" and "Probably Not") or is likely to strike ("Maybe", "Probably Yes" and "Definitely Yes").[8]

Finally, participants completed a battery of questions about their political views, demographic characteristics, and political knowledge. The latter consists of an 11-item scale meant to distinguish between high and low knowledge individuals to test Hypothesis 3.[9]

5 Results

Because the connection between the manipulation and the experience of drone operation relies in part on the observation that abstract construals are associated with greater psychological distance, I test this proposition using the participant's estimation of the distance between a drone operator and her target. The mean perceived distance between drone operators and targets is 8,480 miles

[8] I also estimated the models by removing those participants who chose "Maybe" from the analysis. The results are presented in the Appendix §2, and are consistent with those presented below.

[9] Because student samples tend to exhibit ceiling effects on standard political knowledge measures, I included 6 questions measuring both domestic and foreign policy specific knowledge in addition to the five questions recommended by Delli Carpini and Keeter (1993). The additional questions were: "Who is the Speaker of the U.S. House of Representatives?," "Who is the current majority leader of the U.S. Senate?," "Who is the current U.S. Secretary of State?," "What does NATO stand for?," "Who is the Prime Minister of the United Kingdom?," and "Name five countries that currently possess nuclear weapons." The resulting 11-item knowledge scale (Cronbach's α=0.706) is used in the analyses below.)

in the abstract/high construal condition and 8,442 miles in the concrete/low construal condition. This difference, however, does not attain statistical significance ($F_{1,266} = 0.01$). One possibility for the similar means stems from research in psychology. Investigations into how people understand large numbers suggest that the values chosen by participants in this manipulation check are more indicative of individual-level variation in grasping large numbers and distances (Slovic, 2007) than the construal level manipulation's failure. Future investigations will address this by manipulating distance directly, as well as through measures better designed to gauge variation.

Despite this, the robust psychological literature on the reciprocal connection between abstract construals and psychological distance provides sufficient encouragement that the effects of construal level remain informative for the present question. Further, it may be that the construal level manipulations relate more directly to social distance. The vignette clearly identifies a known, specific target in the low construal level condition, while the high construal level manipulation withholds this information and further separates the target from the self. The high construal manipulation should produce greater social — and therefore psychological — distance, but the included manipulation check does not measure this directly (Trope and Liberman, 2010).

First, I investigate the main effects of both the experimental manipulations — construal level and projected civilian casualties — in the full sample. Model 1 in Table 1 displays the results of a logistic regression predicting the dichotomous decision to launch the strike (1) or not (0). As expected, there is a clear main effect of the projected casualty condition: compared to when only 1 civilian casualty is projected during the successful strike, participants in the 18 or 48 casualty conditions are less likely to choose to strike ($b_{18} = -1.757$, $b_{48} = -1.213$). It also affirms Hypothesis 2, which suggests that operators will be generally averse to striking against a target where they expect a large amount of collateral damage — consistent with Walsh's (2014) recent work on casualty aversion in precision strikes.

The main drop occurs between the 1 and 18 casualty conditions, as the coefficients on the 18 and 48 casualty condition are not statistically different from one another. These results do not support support hypothesis 1, that high level construals are associated with an overall greater propensity to strike. The positive coefficient on the high construal dummy($\beta = 0.137$) cannot be statistically distinguished from 0. Because coefficients in logistic regressions depend on the values of all variables in the equation, the higher order interactions reveal a pattern that can be explored more clearly

through predicted probabilities and the interaction between construal level and knowledge.

Table 1: Predictors of the Decision to Launch Strike

	Full Sample	Low Knowledge	High Knowledge
	(1)	(2)	(3)
High Construal	0.137	0.029	0.780
	(0.508)	(0.734)	(0.716)
18 Casualties	-1.757^{***}	-2.173^{***}	-1.061
	(0.521)	(0.737)	(0.735)
48 Casualties	-1.213^{**}	-1.476^{**}	-0.410
	(0.518)	(0.736)	(0.729)
High Construal x 18 Casualties	0.495	1.788^{*}	-0.845
	(0.694)	(1.050)	(0.953)
High Construal x 48 Casualties	-0.280	-0.452	-0.535
	(0.705)	(1.026)	(0.984)
National Identification	2.577^{***}	2.004	3.497^{**}
	(0.998)	(1.308)	(1.562)
Ideology	-1.440^{**}	-2.072^{*}	-1.251
	(0.657)	(1.094)	(0.854)
Male	-0.064	0.128	0.264
	(0.283)	(0.424)	(0.392)
White	-0.379	-0.160	-0.464
	(0.386)	(0.535)	(0.573)
Constant	0.451	1.190	-1.001
	(1.011)	(1.399)	(1.530)
N	250	125	139
AIC	321.487	162.680	185.703

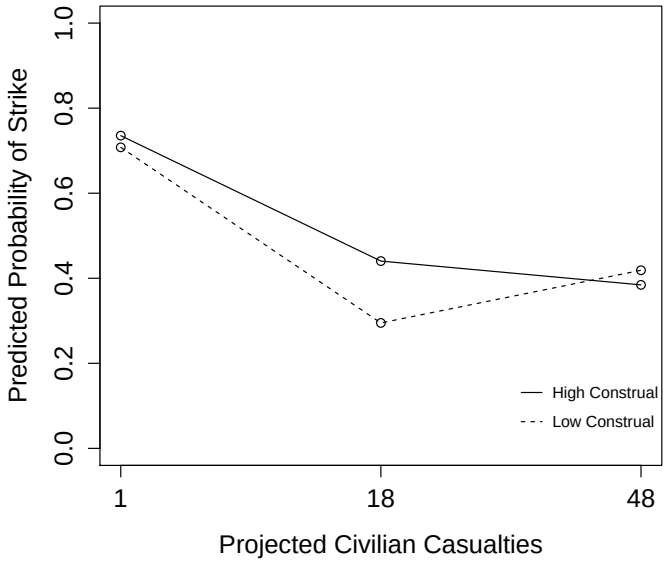
$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Note: Reference category for the experimental manipulation dummy variables is 1 projected casualty, low construal level. Higher values of ideology are more liberal, and ideology and national identification are scaled from 0-1. The N excludes participants who did not identify as American citizens and therefore did not complete the national identification scale.

Calculating the predicted probability that a participant will choose to strike across experimental conditions allows for a more meaningful interpretation of the coefficients in model 1 — a task to which I now turn. Figure 1 plots the predicted probability that an average participant from this sample will strike (this refers to an ideologically moderate white male with a median level of national identification), by both casualty and construal level experimental conditions. When the vignette projects only a single civilian casualty, the predicted probability of launching a strike is 0.735 in the high construal condition, and 0.707 in the low construal condition. This comports with ex-

pectations that a person is more likely to strike a target when the benefits obviously outweigh the costs. In contrast, in the high construal condition the probability of striking decreases to 0.44 for 18 projected casualties and 0.38 when the participant expects 48 civilian casualties. For the low construal condition, these probabilities change to 0.29 and 0.42, respectively. These values suggest that construal level may be moderating the effect of mounting civilian casualties on a participant's decision. When the vignette points to 18 expected casualties, the probability of striking in the high construal condition is 0.15 greater than in the low construal condition. This suggests that casualties factor less into the decision calculus when a person is attending to the abstract goals of their mission (global concerns) than when they are encouraged to think about a particular target (a more local and psychologically proximate goal), as stated in Hypothesis 2a.

Figure 1: Predicted Probability of Strike Launch by Construal Level



Note: Predicted probabilities are for white males, with median levels of national identification and ideology.

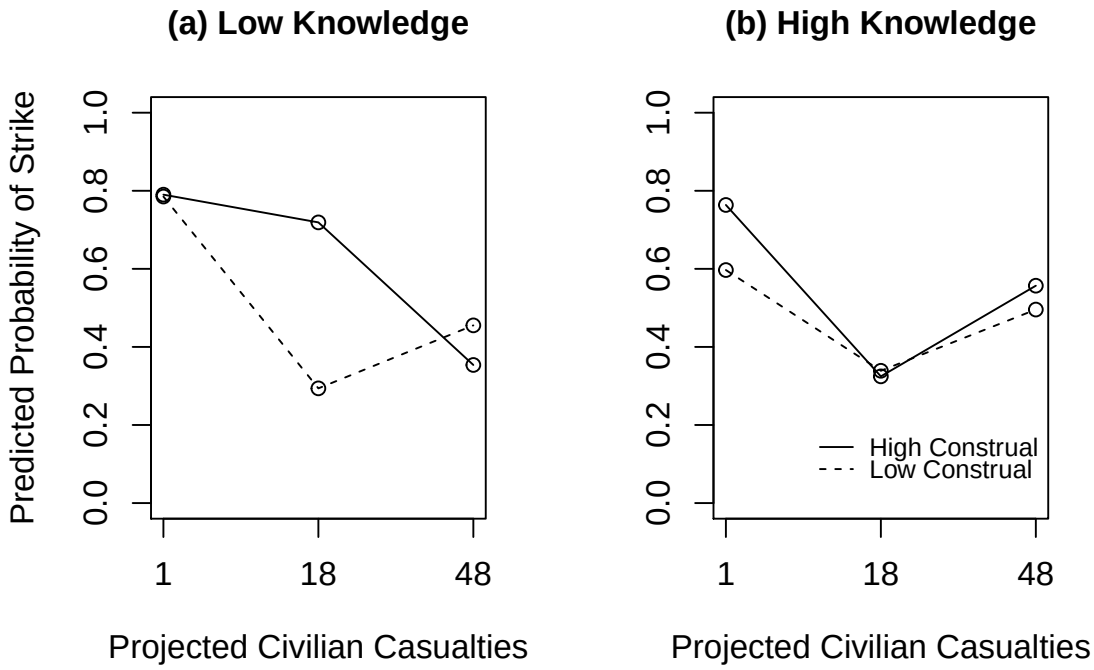
The substantively small size of the difference, coupled with the non-significant interaction coefficients in model 1 of Table 1, indicate that model 1 might obscure important treatment heterogeneity — we might expect larger or smaller effects in different subgroups. Hypothesis 3 predicts one

important source of heterogeneity, and states that political knowledge should moderate the impact of the experimental manipulations on the decision to strike. I expect that more knowledgeable participants will base their decision on predispositions, as they are more likely to already hold stable attitudes about the justness and benefits of drones strikes (Zaller, 1992). Because three-way interaction terms are unwieldy to interpret, I explore this possibility by splitting the sample into high- and low-knowledge subgroups. I create these groups with a median split on the 11-item knowledge scale. The high knowledge group includes participants who scored at or above the median value, and the low knowledge group includes participants who had fewer correct answers than the median score. With the sample divided in this way, I estimate separate logistic regressions for low and high knowledge participants using the same set of covariates presented in model 1.

Models 2 and 3 in Table 1 display these results, and reveal compelling patterns anticipated in Hypotheses 2a and 3: the experimental manipulations, both projected casualties and their interaction with construal level, most strongly predict the strike decision among the low knowledge participants. In contrast, their high knowledge counterparts are driven primarily by the pre-existing strength of their national identity. Figure 2 depicts this distinction through estimates of the predicted probability of a strike among the more and less knowledgeable subgroups in this sample. Panel b displays the results for the high knowledge subsample, and shows that the predicted probabilities are relatively undifferentiated between high and low construal levels as well as across the civilian casualty manipulations. The probability of choosing to strike for a high knowledge participant with this covariate profile (male, white, median ideology and national identification) in the 18 casualty condition is 0.32 vs. 0.34 for those in the low construal condition. For 48 civilian casualties, the probability of striking is 0.56 in the high construal condition and 0.50 when they are primed to think in more concrete terms. There is some separation for high knowledge participants when they expect to hit only one additional civilian — when primed with a high construal, a high knowledge participant will strike with a probability of 0.76 vs. 0.60 when their target is more psychologically proximate. Stronger evidence for the construal level predictions, however, is borne out among low knowledge participants.

Panel a of Figure 2 displays the predicted probabilities of launching a strike for the low knowledge subsample, across the 6 experimental conditions. Here, I find persuasive evidence in support of hypothesis 2a. While there is an overall drop in the probability of striking when 48 casualties

Figure 2: Predicted Probability of Strike Launch by Construal Level



Note: Predicted probabilities are for white males, with median levels of national identification and ideology.

are projected, this condition represents a situation with unusually high stakes, which may pull participants away from striking regardless of perceived distance. However, the interaction between 18 projected casualties and construal level supports the contentions of those who argue that psychological distance will stifle normal barriers to the use of deadly force.

In the low construal condition, the probability of striking with 1 projected casualty drops from 0.79 to 0.29 ($\Delta_{prob} = 0.5$) when the participant anticipates 18 civilian deaths. This contrasts sharply with participants thinking in terms of abstract construals from a greater psychological distance — where the change in the predicted probability of striking between the 1 casualty condition (0.79) and 18 casualty condition (0.72) is a negligible 0.07. An interaction between mounting casualties and construal level shapes the decisions of less politically sophisticated participants. They are more willing to accept collateral damage at the expense of innocent bystanders when they are thinking in terms of eliminating an abstract enemy in the war on terror, when compared to the more proximate and specific target presented to them in the low construal condition. I find evidence in a tactical level drone operation context to support construal level theory's prediction that abstract construals

are associated with concern for errors of omission (not eliminating the terrorist) moreso than errors of commission (collateral damage) (Trope and Liberman, 2010; Krebs and Rapport, 2012)

These models also reveal an important correlation between the strike decision and individual differences, in support of hypothesis 3. In the full model and in the high knowledge subsample, there is a statistically significant, positive relationship between strength of national identity and the probability of launching a strike. Focusing on the high knowledge participants, where this association seems to be concentrated, the more a participant feels attached to the United States and expresses that he has strong ties to fellow Americans, the more likely he is to launch a strike. Moving from the lowest to highest levels of national identification, the predicted probability of striking in the high construal, 1 casualty condition jumps from 0.42 to 0.91 — near certainty for the most attached and a substantively large change in probability of 0.48. When casualties are projected to reach 48 civilians, the difference is even more dramatic. High identifiers will strike with a 0.80 probability (a decrease of only 0.11 from the 1 casualty condition), while a strike from a low identifier remains quite improbable ($pr = 0.22$). The positive effect of national identification on the probability of striking, particularly salient for the knowledgeable segment of this sample, comports with findings on general foreign policy attitudes: Kertzer et al. (Forthcoming) show that valuing one's ingroup, in this case the nation, is associated with more militant orientations toward foreign policy in the American public.

6 Conclusion

If the separation between drone operators and their targets promotes an experience of vast psychological distance, what does this mean about their propensity to use deadly force? The experimental results presented in this paper serve as the first step in a larger project that aims to answer this question and uncover the mechanisms producing the effect, if any, of psychological distance on the psychology of tactical level drone operation. While the results are mixed — construal level does not increase the general willingness to strike — these data demonstrate that construal level can moderate individuals' sensitivity to civilian casualties. Individuals are more willing to launch a drone strike despite increases in collateral damage when they are focused on the abstract goals of U.S. foreign policy, thus distancing themselves from their target.

This effect is most apparent among participants with limited levels of political knowledge. This lends some credence to the claim that the unprecedented separation between operators and their targets could prevent them from voicing or acting on concerns that while hitting a targeted combatant in an area surrounded by civilians, while it may succeed, might only do so with a substantial human cost. While decisions about which targets to pursue and how to best eliminate them unfold over months or years, the final decision to launch a strike occurs in a relatively quick timeframe (Banks and Dhami, 2014).

These findings therefore have important policy implications: to the extent that professional operators' decisions are subject to construal level effects and that policymakers wish to reduce civilian casualties, efforts could be made to decrease psychological distance and emphasize detailed features of a mission. It may also be the case that tactical operators with previous experience on the ground feel less psychologically distant from their targets even while they are positioned in Nevada. Taking into account the experience of an operator could reveal important variation in psychological distance that would be relevant for policymakers.

However, the data also show that construal level has a limited effect on decisions to strike amidst potential civilian casualties among political sophisticates. Assuming that most CIA employees are well-connected to political information, they might be less influenced by psychological distance and instead act in accordance with personality characteristics or other features of the situation not tested here. Policymakers might then be interested in assessing how different personality types approach strike decisions at the tactical level, and take this into consideration in the distribution of assignments.

These findings offer a substantial first step in a comprehensive investigation into the psychology of drone operation. In future research I will determine the robustness of the observed interaction between construal level and mounting civilian casualties, by varying the type of construal level manipulation and with a direct distance manipulation to investigate the reciprocal relationship. This will also address a potential confound: by including reference to the war on terror in the low construal manipulation, participants might have been primed to see themselves as serving a superordinate goal in addition to their more concrete mission, making them more inclined than they otherwise might have been to launch the strike. I also plan to employ stronger manipulations. The current design uses a conservative experimental approach likely to produce small effects. This

comes closer to the real world of drone operation where an inundation of stimuli makes for subtle differences in cognitive processes, but a blunter instrument could better tease out the causal patterns under investigation. Finally, a within-subjects design that varies casualty numbers for each participant could lend further insight into how individuals respond to casualties at high or low-construal levels, providing a more rigorous test than the between-subjects design employed here.

I also hope to extend the project in other ways. The current treatments hold constant the probability that a drone strike will succeed — participants in all casualty treatment groups were told that they would likely kill both their intended target and a predetermined number of civilians — but we know that members of the public are more tolerant of casualties when they think a mission will succeed (Gelpi, Feaver and Reifler, 2006), albeit not if they expect precision (Walsh, 2014). Liberman and Trope (1998) find that, as psychological/temporal distance increases, individuals focus more on desirability of outcomes rather than their feasibility. This leads individuals to overestimate the probability that they will achieve desired outcomes. Rapport (2012) demonstrates this dynamic at work in the case of American leaders' failure prior to the 2003 invasion of Iraq to properly plan for post-war reconstruction: he argues that the military operations that were temporally near were planned with feasibility in mind, whereas temporally distant operations were planned based on desirability of outcomes. Leaders therefore overestimated the probability that desired outcomes would come to pass and failed to plan accordingly for alternative scenarios. As we continue to uncover the mechanism by which psychological distance might influence the propensity to launch a drone strike, it would be useful to take into account the role of estimates of success.

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Appendix

6.1 Text of Experimental Manipulations

All participants read the following passage:

As you may know, the United States government is currently engaged in a campaign against members of the terrorist group al Qaeda, part of the broader war on terror. Winning this war on terror is critical to the security of Americans both at home and abroad. One measure that the government is taking in order to combat terrorism abroad is to identify and kill militants who are hiding in certain places, particularly on the border between Afghanistan and Pakistan. One of the primary methods used to carry out these strikes is the use of unmanned aerial vehicles, or drones. These aircraft can be armed, and are operated remotely from within the United States.

High-Construal

Imagine that you, as an employee of the Central Intelligence Agency, are in charge of operating one of these drones from a facility in Nevada. You have been charged with using the drone to track and kill individuals identified by the US as part of the enemy. The US needs to eliminate their enemies in order to succeed and win the war on terror.

Low-Construal

Imagine that you, as an employee of the Central Intelligence Agency, are in charge of operating one of these drones from a facility in Nevada. You have been charged with using the drone to track and kill an individual – a 29 year-old man - identified by the US as an enemy combatant. The US needs to use drone strikes to succeed in killing this individual as part of the war on terror.

Casualty Manipulation

Imagine that you have been tracking an individual, and your video screen indicates that your target is in range. Based on your targeting precision and what you know of the surrounding area, you

estimate that if you launch the strike from the drone, you will be successful in eliminating the target. You also estimate that the strike may cause [**1, 18, 48**] civilian casualties.

6.2 Excluding "Maybes"

Table 2 displays the estimates the same models reported in Table 1, excluding those participants who chose the option "Maybe" when asked to make a decision to launch the strike. The substantive interpretation remains largely the same, though the impact of 18 projected casualties compared to 1 is statistically significant for high knowledge individuals when the "Maybe"s are excluded.

Table 2: Predictors of the Decision to Launch Strike

	Full	Low Knowledge	High Knowledge
	(1)	(2)	(3)
High Construal	0.062	0.118	0.573
	(0.547)	(0.777)	(0.791)
18 Casualties	-2.379^{***}	-3.756^{***}	-1.462^{*}
	(0.629)	(1.195)	(0.844)
48 Casualties	-1.645^{***}	-1.985^{**}	-1.203
	(0.585)	(0.835)	(0.860)
National Identification	2.970^{**}	1.563	4.647^{**}
	(1.182)	(1.571)	(1.897)
Political Knowledge	-0.524		
	(0.902)		
Ideology	-2.618^{***}	-3.299^{**}	-2.577^{**}
	(0.829)	(1.360)	(1.115)
Male	0.057	-0.217	0.470
	(0.354)	(0.515)	(0.498)
White	0.068	0.115	-0.371
	(0.486)	(0.669)	(0.724)
High Construal x 18 Casualties	0.475	2.794^{**}	-1.322
	(0.815)	(1.423)	(1.115)
High Construal x 48 Casualties	-0.640	-0.715	-0.875
	(0.829)	(1.186)	(1.220)
Constant	0.715	1.931	-1.127
	(1.262)	(1.731)	(1.897)
N	211	103	115
AIC	241.844	121.420	134.755

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$