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Undergraduate Thesis in Politics

Violence, Probability, and Threat Perception:

Unpacking the effect of violence on levels of civilian displacement

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Introduction

Civilian displacement is one of the most pressing humanitarian crises facing the world today. Every year, millions more people flee their homes in fear of violence (United Nations High Commisioner on Refugees [UNHCR], 2017b). More than 65 million people already live uprooted, whether in refugee camps, internal displacement settlements, or a state of constant flight (UNHCR, 2017a). The dangers faced by displaced persons cannot be overstated. They experience deprivation, disease, and continued violence around the world (Internal Displacement Monitoring Center [IDMC], 2017b). The massive number of people forced to flee by violence has created crises for states and institutions everywhere. Host countries are often badly over-burdened, leading to infrastructural failure and large-scale neglect of refugees (UNHCR, 2017a). Mass displacement can be destabilizing, with refugee flows linked to increases likelihood of civil wars, interstate conflicts, and terrorism (Milton, Spencer, & Findley, 2013; Salehyan, 2008; Salehyan & Gleditsch, 2006). Internally displaced persons (IDPs) are often left without any state, even a reluctant one, to care for them, leaving international humanitarian organizations badly overwhelmed (IDMC, 2017b).

Despite the scale and urgency of civilian displacement, surprisingly little is established about the process of displacement itself. Some conflicts produce far more refugees than others, despite similar levels of violence (Turkoglu & Chadefaux, 2017). Sometimes more civilians leave the country and become refugees, other times the majority remain within their home country as internally displaced persons (Moore & Shellman, 2006). While it is widely acknowledged that people flee their homes in the face of violence, little work has examined when and why people choose to flee. Does it matter how nearby the violence is, or is violence anywhere in the country equally threatening? How much does political or ethnic identity influence the decision to flee? Why do some civilians become refugees, while others remain IDPs?

In order to better understand why people flee their homes, and how that flight can be predicted, I examine how violence produces the perceptions of threat that ultimately motivate people to leave. Specifically, I ask how geography and identity influence civilian displacement in response to violence, and whether those factors affect if individuals become refugees or IDPs. Examining these factors not only allows for a better understanding of the situations facing people during conflict, but also offers the potential for better predictive models and policy responses in the face of the global displacement crisis.

Previous work, both qualitative and quantitative, has focused on the relative role of violence in causing displacement, leadings to a strong consensus that fear of violence is the primary driver of displacement. While this finding has been extensively confirmed, previous work has relied on aggregated data and a simplistic account of how violence communicates threat. This tendency has led to a literature with a strong big-picture consensus on the importance of violence, but little understanding of *which* people in a conflict will flee, why, or how.

In order to answer this question, I propose an account of threat perception focused on the role of geography and identity in determining how threatened individuals are by violence. Building on previous work focused on individual decision making, I contend that both spatial proximity to violence and social ties to victims increase how threatened individuals are by a given level of violence, and therefore increase how likely they are to flee. Furthermore, I contend that these factors influence whether individuals become refugees or IDPs, with geography mattering more for IDPs and identity more for refugees.

I test these predictions quantitatively by examining displacement in 2016 in eastern Afghanistan. By using settlement-level displacement data, geolocated conflict data, and geographical demographic data I measure the impact of geography and identity on the relationship between violence and displacement. Ultimately, I find that geography has a substantial effect, with violence further than 20km from a village having little to no effect on total displacement. I find more mixed evidence for the importance of identity, with violence causing more displacement within ethnic regions, but with direct ethnic links having little to no effect. Finally, I examine all of these findings separately for IDPs and refugees, concluding that geographical factors more strongly effect IDP displacement, while identity factors tend to influence refugee displacement.

In the following sections, I explore the existing literature on civilian displacement in more depth. I begin by examining the role of geography and identity in shaping threat perception, then consider the relationship between types of threat and whether civilians become IDPs or refugees. I then test these predictions directly, beginning with an examination of the case and experimental design. I conclude with interpretation of quantitative results and a discussion of the implications of each.

Previous Research

The Importance of Violence

While civilian displacement as a whole is the subject of an expansive literature, the focus of this article is the more recent push to empirically identify the factors driving displacement. Previous theoretical and case-study based approaches have long highlighted violence and fear of persecution as primary drivers of displacement (Stanley, 1987; Jenkins & Schmeidl, 1995; Apodaca, 1998). These predictions were not measured empirically on a large scale until more recently (Schmeidl, 1997). The empirical literature is perhaps most heavily influenced by the approach taken by Davenport et al. (2003) in their foundational study. They approach civilian displacement as the result of civilians' voluntary decisions to flee. By placing the decision to flee at the center of their model, Davenport et al. do not dispute the "forced" nature of civilian displacement, but note that displacement is ultimately the result of individual peoples' search for safety. In a country-year level analysis of 149 countries across 25 years, Davenport et al. confirm that violence is the primary driver of civilian displacement, with certain forms, such as genocide, producing relatively more displacement.

This decision-based approach was quickly adopted in the displacement literature, with further studies finding similar results with large-N, cross-national methods (Melander & Öberg, 2006; Moore & Shellman, 2004, 2007). More recently, subnational work has confirmed the strong relationship between violence and displacement in Nepal and Colombia, as well as the comparative weakness of other factors (Adhikari, 2012; Lozano-Gracia, Piras, Ibáñez, & Hewings, 2010; Williams, Ghimire, Axinn, Jennings, & Pradhan, 2012). Shellman and Stewart (2007) have also worked to confirm the relationship across shorter periods of time, finding violence to be a primary driver of Haitian migration to the US at the weekly level.

<u>The Threshold-Threat Model</u>

This approach has been described as a 'rational choice' or 'decision-theoretic' model (Adhikari, 2012). While these descriptors are correct in the focus on the *decision* to flee, they do not capture the central feature of the literature: the focus on perceived threat as the driver of displacement. I contend that this approach is best described as the 'threshold-threat' model;

civilians are modeled as deciding to flee when their level of perceived threat reaches an internal threshold necessary to cause flight. Davenport et al. (2003) refer explicitly to such a threshold in their work, and set the trend in the literature of focusing on variation in threat levels.

In a threshold-threat model, displacement can ultimately be driven by variation in two things: the level of perceived threat or the threshold necessary to cause displacement. Factors such as changing economic fortune can cause people to flee without the level of threat changing; these effects impact the threshold. Common 'pull factors' in the literature, such as neighboring country stability can all be understood as threshold-changing effects (Turkoglu & Chadefaux, 2017). I join the bulk of the displacement literature, however, in focusing on variation in perceived threat due to violence as a predictor of displacement.

This threshold-threat approach has yielded important results. By examining displacement as a decision by civilians in response to conflict, rather than as an inevitable byproduct of violence, threshold-threat models better appreciate the situation facing civilians. Furthermore, the literature has generated a strong consensus on the primary importance of violence in producing displacement, with consistent findings between multiple cross-national studies and subnational case studies. Ultimately, however, these studies are limited in that they 'only tend to affirm an intuitive relationship: as violence increases, so does displacement' (Steele, 2009, p. 420). While the literature has consistently demonstrated the link between violence and displacement, it has done surprisingly little to illuminate the nature of that process.

Understanding Threat Perception

The reason threshold-threat models have not been able to produce more sophisticated results is a ubiquitous pair of interrelated flaws: the under-theorization of threat perception and the over-aggregation of displacement data. To begin with the latter, previous approaches to the threshold-threat model have largely neglected a detailed account of threat perception. Most harmfully, they overlook a central tenant of rational-choice economics which ought to be at the center of any decision-based model: individuals' assessments of potential payouts or harms are a function of both the *magnitude* of the potential event, and the *probability* of that event occurring. A given level of perceived threat could be driven by either: intense conflict with a low probability of affecting an individual may be similarly threatening to low-level conflict with a high probability of affecting an individual. Threat perception is an aggregate perception of intensity and probability.

Perceptions of probability have been sorely neglected in the threshold-threat literature. Previous authors have been aware of the distinction, and Moore and Shellman (2006) explicitly note the central role of perceptions of probability in their theoretical model of displacement. However, this theoretical observation has not been parleyed into effective operationalizations. Throughout the literature, perceived threat has been treated solely as a function of *total violence* within the unit of analysis. Different forms of violence may be tested separately, but the notion remains that total violence can somehow serve as a measure *both* of intensity and of probability in civilians' threat perceptions. Little work has acknowledged the possibility of variable perceptions of *probability* of being affected by violence in the face of constant intensity of violence.

This theoretical shortcoming is deeply tied to a methodological one: the over aggregation of data. The majority of quantitative work on civilian displacement has been carried out at the country-year level (Adhikari, 2012). More recent subnational approaches continue to use substantially spatially aggregated displacement data (Adhikari, 2012; Williams et al., 2012). With aggregate data, however, violence is assumed to have homogenous effects on threat perceptions for civilians within the region (Steele, 2009). Spatial aggregation obscures in-unit variation in response to treatment. This leads to a neglect of probability; intensity of violence can be measured at the regional or national level, perceptions of probability based on location cannot.

If perceptions of threat and rates of displacement were evenly divided among populations, this lack of theoretical and empirical granularity would not be an issue. However, as will be discussed below, cases of unequally distributed displacement within countries or regions are abundant. In order to account for such patterns of distribution, we must have an account of threat perception which allows for variable perceptions of the probability of being affected by violence. In the following sections, I adopt the threshold-threat model, and aim to create a better account of how civilians perceive threat. I propose two dimensions affecting individuals' perceptions of threat: spatial risk and identity risk. I examine the implications of both variables for predicting displacement, then test those predictions on a disaggregated dataset of civilian displacement in eastern Afghanistan.

Theoretical Framework

I adopt what I call the threshold-threat model as my overall framework, treating displacement as the result of perceived threat leading civilians to decide to flee. As with most previous works, I set aside the issue of individual thresholds, instead focusing on violence and perceived threat as the core driver of displacement. Unlike previous work, however, I focus explicitly on the relationship between violence and perceived threat, examining why individuals may be differently threatened by the same levels of violence. Ultimately this difference must be understood to explain why some areas and populations produce more displacement during conflicts.

I examine two primary sources of variation in threat perception: where the violence is, and who it affects. Both variables draw on a sense in which violence can be described as "close" to a person. Where the violence is determines who it is close to spatially, with civilians near to violence expected to be more threatened by it. Who the violence affects determines a different kind of proximity, which could be described as "social closeness." Individuals who are linked to the victims of violence, be it through group membership, language, or family ties, are also expected to be more threatened than people more socially distant from victims. Together, these two factors form a "near and dear" heuristic: people are thought of as being particularly threated by violence that is near, spatially close, or dear, socially close.

In the following sections, I examine each of these variables in more detail, including potential mechanisms by which each can shape threat perceptions, and specific hypotheses for how they should affect patterns of civilian displacement. Ultimately, I contend that both factors can affect threat in a number of different ways, from purely rational risk-calculation to more emotional effects. In this regard, even though I use a choice-centered threshold-threat model, it is not a rational choice theory in the traditional sense. So long as spatial and social closeness drive threat, the precise balance of rational or emotional mechanisms is not an issue.

Finally, I examine the differing implications of my theory for internally displaced persons and for refugees. Previous work has overwhelmingly tended to treat the two populations the same, relying on aggregate displacement as an independent variable. I expect the two groups to differ in the types of threat they are responding to, ultimately contending that IDPs are more likely to be responding to spatial risk, with identity risk producing more refugees.

Spatial Risk: does distance affect threat perception?

The importance of location *within* a country is readily apparent in Syria, where rebel and government offensives continue to trigger mass displacement. Syria is in the midst of one of history's worst displacement crises, with more than 5.6 million Syrian refugees and 6.3 million internally displaced persons (IDMC, 2017b; UNHCR, 2017b). With such widespread conflict, it is tempting to view the displacement of civilians as a country-wide phenomenon, with people fleeing the "violence in Syria." In reality, some parts of the country are far more affected than others by the intense episodes of fighting caused by local offensives, as was most recently demonstrated the northwestern governate of Idlib (Barrington & Francis, 2018). The area had previously been spared the bulk of fighting, and served as a refuge for civilians fleeing conflict in other parts of the country. In January of 2018, at the onset of a government offensive, OCHA estimated that there were 2.65 million people living in the region, a full 1.6 million of which were IDPs (OCHA, 2018). Only a month later, over 200,000 civilians had been forced to flee the fighting ("Turkey, Assad offensives bring new displacement crisis in Syria," 2018).

These types of intense, regional displacements are commonplace, and point towards the importance of location in how civilians understand threats. Rather than responding to "violence in Syria" as a whole, civilians must contend with threats on an immediate and local level. The relative absence of intense fighting in Idlib lead more than one million people to seek refuge there; the onset of the government offensive has now forced hundreds of thousands to flee. Understanding the situation facing civilians in Idlib, or in any civil conflict, requires an account of how people perceive threat based on location.

Melander and Öberg (2007) notably highlight the role of the spatial distribution of violence in their study of civilian displacement. In it, they take exception to the traditional country-year intensity-based operationalizations, arguing that substantial variance in displacement rates is unexplained. They note: ‘an important but previously under-explored source of the remaining variation is the geographical scope and location of the fighting’ (Melander & Öberg, 2007, p.157). Working within a threshold-threat model, they argue that the location of violence is an important driver of individual’s perceptions of threat. As the violence becomes more widespread in the country, there will be in increase in ‘the number of people affected by the violence . . . the number of people who might feel threatened enough to flee’ (Melander & Öberg, 2007, p. 159). Melander and Öberg provide substantial empirical evidence, finding that the geographical “scope” of violence within a country is a superior predictor of displacement to the total intensity of violence.

Implicit within the term “affected people” is the notion that violence is only threatening to individuals when it occurs within some distance. This concept of distance-dependence, however, is never explicitly formulated within Melander and Öberg’s work, and is never independently tested for. In part, this may because they too are limited by spatial aggregation. Despite their theory about the locality of threat, they only have displacement figures at the country-year level, forcing them to use conflict *scope* as an extremely rough control for distance effects.

While Melander and Öberg never explicitly engage with it, their work draws on the core concept of a diverse literature on transmission effects and “distance decay.” Distance decay is simply the observation that nearly all effects, from the social to the purely physical, reduce in strength over distance (Haynes, 1974). This concept was notably articulated in military contexts as the “loss of strength gradient” by Boulding (1962), and has more recently been applied to the study of conflict in subnational settings (Buhaug, 2010). By demonstrating the importance of scope in producing displacement, Melander and Öberg point towards the existence of distance decay in threat perception; all things equal, violence seems to be more threatening to nearby civilians than to distant ones.

This seemingly intuitive observation may have its roots in any number of distance-dependent mechanisms. First is the logistically-constrained nature of conflict. A large and growing body of literature studies the presence of conflict via epidemic models, in which the transmission of conflict from one area to another is the primary area of interest (Buhaug & Gleditsch, 2008; Schutte & Weidmann, 2011; Zhukov, 2013). Distance decay is central to these models; it is more difficult for conflict to spread to distant regions than to nearby ones. Zhukov (2012) studies this phenomenon empirically, demonstrating the importance of road networks in Chechnya in determining where and how far violence will spread. The core findings are the high logistical cost of long-distance movement, and the local nature of most conflict diffusion. Because of the high costs to transmitting violence, areas close to existing violence are significantly more likely to experience future violence than distant areas are, meaning nearby civilians are more threatened than distant ones.

Because the core driver of displacement is the subjective perception of threat, the purely psychological role of distance cannot be ignored. Next to nothing has been written explicitly on the role of distance in the perception of threat during conflict. In other areas, however, social scientists have observed substantial psychological ramifications to distance. In an examination of voting behavior, Gimpel et al. observe a powerful distance decay effect, with voters having a significant positive bias towards “local” politicians, but with this perceptual boost fading quickly with distance (Gimpel, Karnes, McTague, & Pearson-Merkowitz, 2008). More negatively, Taylor and Dear (1981) find that perceived threat by individuals from the presence of mental health treatment facilities exhibits a consistent distance decay function, with nearby citizens demonstrating much more powerful feelings than more distant ones.

Taken together, these mechanisms should produce a significant distance decay effect for perceived threat, whether it is driven by strategic understanding of conflict diffusion or a more psychological effect. At its core, this decay function is rooted in individual's perception of *probability*: how likely they are to become "affected individuals" due to their location. I term this perception "spatial risk". For a given level of violence, two individuals may have radically different levels of spatial risk, resulting in different levels of perceived threat and potentially different flight decisions. In order to examine the nature and strength of spatial risk, I later test the following hypothesis

H1: The closer violence is, the more likely it is to cause civilian displacement

If threat perceptions are subject to distance decay, violence should have less effect on displacement the further away it occurs.

Identity Risk: do ties to victims increase perceived threat?

August 1995, in Croatia, an estimated 250,000 Serbs fled their homes (Crvenkovic, 2005). They had endured years of conflict without leaving their homes, but Operation Storm, a military offensive that would last just three days, caused them to flee (United Sates, Central Intelligence Agency, 2002). Why did one offensive do what years of fighting had not? Operation Storm was a Croat offensive, a turning point in a conflict that had been controlled by the Serb-dominated Yugoslav national army and Serbian paramilitary forces (Dyrstad, 2012; Strabac & Ringdal, 2008). For civilians fleeing Operation Storm, the threat was not just violence, something they had lived with for years, but Croat violence, for which they were at particular risk. This scenario was one which occurred throughout the Balkan conflicts, where violence broke out along ethnic lines, often turning neighbor against neighbor and ultimately forcing millions to flee ethnic cleansing (Bringa, 1995; UNHCR, 2001).

Such clearly ethnically-targeted violence and displacement raises several important questions about the role of identity. A vast literature exists on identity killing in general, with explanations including territorial control, informational asymmetry, and ideology and hatred (Kalyvas, 1999; Leader Maynard, 2014; Straus, 2012). As with violence against civilians more generally, much of the work done on genocide and ethnic cleansing has sought to predict and explain the targeted violence, with displacement treated as an inevitable consequence (Steele, 2009). However, much less work has focused explicitly on the relationship between identity-based violence and civilian displacement.

An important exception to this trend is Steele's (2009) work, which focuses on displacement as a primary objective of violence, rather than as an unavoidable effect. In interviews conducted with Colombian IDPs, Steele examines the forms of violence most directly responsible for causing flight. Steele's primary finding is that not all forms of violence are equally threatening; military engagements and individual assassinations did not motivate displacement, while violence that was *collectively* targeted towards an identity group did (Steele, 2009). Steele and Balcells (2016) test this finding in their follow up work, in which they examine patterns of displacement in Spain and Colombia. They find significantly higher levels of displacement in areas with high levels of support for rival armed groups, suggesting deliberate collective-targeting campaigns meant to cause mass displacement. Importantly, while the bulk of work on identity focuses on ethnicity, Steele and Balcells demonstrate throughout their work that political identity can motivate identity targeting in a similar way (Balcells & Steele, 2016; Steele, 2011).

Steele and Balcells' work has important ramifications for predicting displacement, especially their accounts of the conditions necessary for collective targeting. As with Melander and Öberg (2007), however, their account relies on a more fundamental assertion about the nature of threat perception which they do not directly explore. While Steele and Balcells provide an account of when and why armed groups seek to displace civilians, they do not directly test *how* targeted violence produces targeted displacement. Steele and Bacells assume that civilians are in fact *more threatened* by violence perceived to be targeting their group. This is supported by Steele's fieldwork, but is not explicitly operationalized or tested for in any of their work. It is possible that there is no collective-targeting mechanism at play, but merely a spatial one; strategies of deliberate displacement could function by clustering violence in major population centers of the target group. Such a mechanism is distinct from a transmission of threat via *shared identity*.

The type of selective displacement witnessed in the Balkans casts doubt on a purely spatial account of identity displacement, and there is a diversity of literature to suggest that identity-based mechanisms are at play. As with spatial risk, these mechanisms range from strategic to perceptual for civilians facing violence. Steele and Balcells's conceptualization of identity group targeting draws heavily on Kalyvas's (2006) work on the incentives for violence in civil war. Under such a rationalist account, violence against civilians is primarily motivated by a desire to seize and hold territory (Balcells, 2017; Kalyvas, 1999, 2006). Identity-based violence can be used to secure control over contested territory by reducing potential opposition forces (Balcells & Steele, 2016). Identity targeting can be exacerbated by the often fragmented nature of civil wars, with fighting devolving into local microconflicts along ethnic or political lines (Kalyvas, 2003). This is especially true where larger armed actors rely on local information, allowing local agents to settle scores through selective information passing and denouncements (Kalyvas, 2006; Lubkemann, 2005). In cases where armed actors, whether motivated by local actors or not, rely on group identity as a method of targeting violence, civilians ought to perceive the probability of being targeted as contingent on their identity group membership.

Group identity can shape perception in less rational ways too. Shared membership can create a "group heuristic," in which co-members' actions are viewed more positively (Hale, 2008). These effects can be driven by primarily emotional, rather than strategic, considerations (Lyall, 2010; Peterson, 2002). Lyall et al. find significant evidence for this type of perceptual bias in Afghanistan, where Pashtun civilians perceived violence against civilians committed by ISAF forces much more negatively than equivalent violence by Taliban forces (Lyall, Blair, & Imai, 2013). Alongside these group biases, Balcells (2017) points towards cycles of revenge as an important driver of violence in civil wars. Such psychological mechanisms are important, and shape threat perception even where identity does not serve as the rational basis for targeting violence against civilians.

These mechanisms, whether rational or emotional, should drive an increased perception of threat based on the identity of the victims. For members of an identity group, violence targeting other members appears more likely to affect them. I term this perception "identity risk". If such an effect exists, rather than a purely spatial one, observed displacement should vary with shared identity ties, political or ethnic, while holding the intensity and spatial distribution of violence constant. This leads to my second hypothesis:

H2: Civilians who share an identity with victims of violence are more likely to flee

It is important to note that this hypothesis speaks to how individuals in a given group perceive threat. The overall number of people displaced will depend on the size of that group.

Violence targeted against a small minority might be extremely threatening to that group, but actually produce *less* overall displacement due to the small size of that group relative to the less-threatened majority. The significance of identity to predicting overall displacement rates will depend on the demographics in any given conflict.

Taken together, spatial risk and identity risk provide two powerful accounts of how individuals perceive threat in times of conflict. Each of them provides an explanation for observed patterns in civilian displacement, from the location-based displacement of Syria to the identity-based displacement in the Balkans. Accounting for both is necessary to understand the relationship between violence and peoples' real perceptions of threat.

IDPs and Refugees: different strategies for different threats?

A final limitation to the traditional empirical displacement literature is its failure to differentiate internal displacement and international flight as separate options for civilians facing violence. Failing to differentiate the two, however, ignores the possibility that civilians may opt for one or the other in light of the threat they face, and overlooks conflict dynamics as an important cause of relative IDP/refugee flows. In the threshold-threat model, the decision to flee is often treated as separate from the choice of destination. Davenport et al., for instance, note that they are 'interested in the decision to flee but we are not interested in examining the distance that individuals travel along this path' (Davenport et al., 2003, p. 28-29). Subsequent work has largely aggregated IDPs and refugees (Adhikari, 2012; Moore & Shellman, 2004). In this approach, the ultimate difference between a refugee and an IDP is thought of as path dependent, with the actual decision to flee being theoretically indistinguishable between the two populations

This path-centered approach largely matches the broader literature on destination selection. "Pull-factor" centered accounts, for instance, highlight the presence of political stability and economic opportunity in neighboring countries as primary determinants of refugee flows (Turkoglu & Chadefaux, 2017). Choices of destination have been ascribed to closest-possible safety strategies and to ‘opportunistic’ prosperity seeking (Moore & Shellman, 2007, p. 812). Other accounts center less on choice of destination, and more on path-influencing variables, such as terrain and infrastructural barriers to travel (Bohra-Mishra & Massey, 2011).

These accounts describe an important part of civilian flight. Their common drawback, however, is the continued exclusion of the cause of displacement. Moore and Shellman’s (2006) work is an important exception. In their study, they examine whether IDPs and refugees vary systematically in what forms of violence they respond to. They find that refugees are relatively more responsive to state violence, with conflicts exhibiting higher levels of state-sponsored violence producing greater numbers of refugees relative to IDPs (Moore & Shellman, 2006).

In order to explain this finding, Moore and Shellman treat internal displacement and crossing the border to become a refugee as competing threat-reduction strategies. Displaced civilians elect to become refugees or IDPs based on which most effectively reduces the threat, relative to the cost of relocation. The costs of international migration are assumed to be greater, meaning that the relative proportion of refugees to IDPs will be dictated by the presence of threats which require international migration to mitigate. This formulation will necessarily be paired with path-oriented variables, as civilians’ paths of flight are not always a matter of choice, and new threats experienced during displacement will continue to inform individuals’ selections of destinations. However, the strategy-choosing framework provides an important insight: certain types of *initial* threat are better alleviated by one or the other strategy. In the cases examined by Moore and Shellman, the difference emerged with state violence. Because the reach of the state often extends throughout the whole country, while rebel groups do not, it is reasonable that civilians fleeing state violence are more likely to opt for crossing a border.

Moore and Shellman's demonstration that IDP and refugee displacement are driven by different threats is important. However, their work is limited in two respects. Firstly, their data contains substantially more refugees than IDPs, contrary to most estimates of relative displacement rates, and likely caused by underestimation of internal displacement (UNHCR, 2017). Secondly, Moore and Shellman exhibit the common problems of over-aggregation and an under-theorization of threat perception, meaning that their differentiation of IDPs and refugees only examines country-level differences in actors. There has been little written on the subject since. Bohra-Mishra and Massey (2011) do attempt to distinguish between refugees and IDPs in their work, but only demonstrate that refugees are more sensitive to violence overall than IDPs, rather than differentiating the threats responsible (Bohra-Mishra & Massey, 2011). As such, our general understanding of how threats drive different forms of displacement remains extremely limited.

In the context of perceptions of probability, Moore and Shellman's risk-reduction predicts a differentiation between IDPs and refugees. The two forms of risk examined within this article, spatial risk and identity risk, carry different implications for threat reduction. Spatial risk is specific to geographic position within a country; nearby violence is by definition a local threat. This will not always suggest that internal displacement is an adequate response. It may be the case that violence is sufficiently widespread within a country to mandate becoming a refugee to mitigate spatial risk. However, internal displacement will often be sufficient to increase the distance between an individual and active conflict. If the threshold for relevant distance is fairly close, we should even more strongly expect spatial risks to produce IDPs rather than refugees.

Conversely, identity-based risks are often less constrained by location. Internal displacement may mitigate threats from local cleavages, such as denunciation by feuding families or geographically limited counter-insurgency campaigns. Macro-level ethnic or political cleavages, however, are likely to retain their relevance anywhere within the country. Civilians responding to identity risk can therefore be expected to be more likely to become refugees than those displaced by spatial risk. Combined, these two predictions form my third hypothesis

H3: Spatial risk makes internal displacement more likely; identity risk makes international displacement more likely

Risks of either form may produce either form of displacement, and the effectiveness of internal displacement as a mitigating strategy will depend on the context of the conflict. On balance, however, we should expect internal displacement to be more strongly tied to location-based risks, and refugee displacement to longer-term, wider-reaching identity risks.

Research Design

Case Selection

I focus on displacement in Afghanistan, both as an important case of high-displacement civil war and due to superior data availability. Afghanistan's state of long-running, multi-faction civil war is emblematic of increasingly common civil conflict, and offers important insight to how civilians respond to violence in a spatially dispersed, ethnically diverse conflict (Christia, 2012). I examine civilian displacement in nine provinces in eastern Afghanistan, as they were the only regions for which disaggregated displacement data was available. While not providing a full geographical sample of the Afghanistan conflicts, these regions produced a substantial number of displaced civilians, and encompassed a representative level of violence within the time period.

Afghanistan has a long history of civil conflict and related displacement. Mass displacement in the modern era first began in 1978, when agricultural reforms by the communist regime forced widespread flight (Christia, 2012). Since then, Afghanistan has experienced near continuous violence. In the 1980s, bloody conflict between mujahedeen forces and the Soviet-backed communist regime engulfed the country, ultimately leading to more than 5 million people fleeing the country and becoming refugees (Mehta, 2009). After the withdrawal of Soviet forces, there was a brief period of relative calm, brought to an end by the collapse of the soviet regime in 1992 and the start of the intra-mujahidin war (Christia, 2012; Goodson, 2001). This and following conflicts were characterized by complex, shifting alliances between tribal and ethnic groups (Christia, 2012). The rise of the Taliban during the intra-mujahidin war, and the subsequent 2001 US intervention, have fueled counter-insurgency conflict into the present day (United Nations Assistance Mission in Afghanistan, 2018).

This long history of conflict has created a displacement crisis on a massive scale in Afghanistan. At the end of 2016, the UNHCR estimated that there were nearly 1.8 million internally displaced persons within Afghanistan, with another 2.5 million registered refugees abroad (UNHCR, 2017b). A 2012 survey by confirmed that violence is the primary driver of displacement in Afghanistan, with over three quarters of surveyed people identified the threat of violence as the main reason for fleeing (Samuel Hall, Norwegian Refugee Council, IDMC, & JIPS, 2012). Those surveyed pointed towards a wide range of conflicts in forcing them to flee, including international forces, major armed actors like the Taliban, and smaller-scale local, tribal, and ethnic conflicts. Violence has impacted a huge proportion of the population; a survey in 2009 estimated 60 percent of country had experienced some form of displacement (ICRC, 2009).

Conflict-driven displacement remains a crisis throughout the country. In 2016, over 600,000 Afghan civilians were internally displaced by conflict (IDMC, 2017a). Clashes between the Taliban and Afghan army remain common, and the continued instability of the region recent years has only worsened the situation (UNAMA, 2018). Civil conflict, and the displacement it causes, show no sign of stopping in Afghanistan (IDMC, 2017b).

With so many people displaced from their homes, and with conflict continuing to threaten more civilians, Afghanistan alone warrants a better understanding of how and when people are forced to flee. However, the implications of findings in Afghanistan are wide-reaching. While Afghanistan has experienced an exceptional level of violence in the last four decades, its situation is not unique. The fragmented and long-running nature of conflict within Afghanistan is representative of civil conflicts in general (Christia, 2012). Civil wars now account for the vast majority of conflicts and conflict deaths (Gleditsch, Petter, Melander, & Urdal, 2016). Civilians around the world face the same conditions of widespread, long-lasting violence as in Afghanistan, and global displacement rates have continued to rise in the face of it (IDMC, 2017b; UNHCR, 2017b). Better understanding patterns of displacement in Afghanistan offers insight into civilians' plight in the face of civil conflict around the world.

While Afghanistan is an important case of civil war, more specifically it is an instance of irregular, long-duration civil conflict without concerted ethnic cleansing. These characteristics are relevant to civilian displacement, and may limit the transferability to other forms of conflicts. Firstly, the civil conflict in Afghanistan is irregular in nature, as compared to the more territorial, front-lines based conflicts that characterize some civil conflicts such as Syria. However, previous work on displacement has tended to indicate that drivers of displacement are fairly constant between types of conflicts, including irregular and regular civil wars (Balcells & Steele, 2016).

Another feature of the Afghanistan case is the prolonged nature of the conflict. As Melander and Öberg (2006) note, there are significant duration-dependent effects for civilian displacement. As conflicts age, large numbers of civilians are already displaced, particularly those predisposed towards flight, meaning that remaining civilians are likely to require greater levels of threat to be displaced. In Afghanistan, according to Melander and Öberg's results, civilians' thresholds for flight should be higher, and total displacement figures lower, than in newer conflicts.

Finally, the time period in Afghanistan covered here does not include any mass "waves" of displacement from large-scale offensives, and as such, total displacement rates will be lower and more temporally distributed than some conflicts. Additionally, this is not a case of active ethnic cleansing, which is likely to reduce total displacement and lessen the identity-based effects compared to cases like Operation Storm. However, it is important to realize the scale of "low-level" displacement of this type. Such displacement may lack the discrete "crisis" aspect needed to capture international attention, but displaces more than a hundred thousand people every year in Afghanistan, and millions more worldwide (UNHCR, 2017a).

Dependent Variable

The dependent variable is the number of displaced civilians per settlement in 2016. Settlements include any distinct population center, from the village level up. In the initial models, in keeping with previous research, displacement is an aggregate total including IDPs and refugees. Later it is split by population to test for major divergence. The displacement figures are provided by a settlement-level survey conducted by the International Organization for

Migration's Displacement Tracking Matrix team in Afghanistan (2017). Totals were assembled over six months in 2017 via interviews and local records. The sample includes 3,907 settlements in nine eastern Afghan provinces. Displacement totals range from 0 to 10,570, with a mean value of 176.[1]

My primary unit of analysis for displacement is the settlement. However, the real level of interest is the individual decision to flee. Ideally, individual-level data from surveys would be used, but no such data exists or could be feasibly collected at a large enough scale. By using settlement-level flows, I essentially aggregate from the individual level to the settlement level. In doing this, I make a key assumption that the level of perceived threat is the same for all residents of a given settlement. This assumption is relatively unproblematic with regards to spatial risk, as residents of a settlement tend to be tightly spatially clustered. The aggregation is less accurate with regards to identity risk, as settlements will not have perfectly homogenous relevant political identities, leading to internal variation of perceived collective targeting risk that is not captured by the settlement-level data. Despite this drawback, a settlement-level model is by far the lowest level of aggregation attempted at a large scale, and would only be improved upon by extremely costly individual-level survey data.

While the displacement data possess a great degree of spatial precision, it contains no temporal variation, with only aggregate figures from 2016 available. As such, my analysis is purely cross-sectional. The importance of longitudinal work and smaller time increments in studying displacement is well articulated by Shellman and Stewart (2007). Unfortunately no data yet exists offering both spatial and temporal granularity of that degree. While the analysis presented here offers the greatest level of spatial detail yet attempted, it is necessarily limited by

[1] See appendix 1 for full descriptive statistics for all variables

its inability to capture longitudinal effects such as duration dependence, cascading refugee flows, or growth of diasporas (Edwards, 2008; Melander & Öberg, 2006).

In the initial models, I use an aggregate displacement figure which includes both IDPs and refugees. This aggregation has been the standard approach in the literature, and allows the identification of predictors of total displacement. Alongside the aggregate models, I examine population-specific models, in which IDP displacement and refugee displacement are treated as separate dependent variables. These disaggregated figures are available for all of the settlements within the DTM sample, and were compiled at the same time with the same methodology. It includes 509,121 total IDPs and 180,411 refugees. Maximum displacement recorded for IDPs is 10,500, with a mean value of 130. The highest recorded number of refugees for a settlement is 1670, with a mean value of 46. Due to the larger proportion of IDPs, aggregate results will more closely match IDP-specific results, and in general refugee-specific effects will be smaller in size.

These figures will not necessarily match the final destinations of all of the civilians included, as the path-impacting variables discussed previously will have altered some intended destinations. The figures here will more accurately match *intended* destination at the time of displacement, though they might be affected somewhat by correspondence from displaced people. Because the variable of interest here is civilian’s response to the cause of displacement, rather than where they actually resettle, this measurement is superior to a current place-of residence one. Measuring intended destination helps isolate the impact of the initial threat, excluding path-influencing effects.

Independent Variables

Violence

The central independent variable is armed conflict deaths in Afghanistan in 2016. The fatalities are drawn from the Uppsala Conflict Data Project's Geolocated Event Dataset (UCDP GED) (Croicu & Sundberg, 2016; Sundberg & Melander, 2013). Each entry in the GED50 is an armed conflict, including date, coordinates, armed actors, and fatality by side. The dataset is compiled by aggregating news reports, and while it is not an exhaustive record of conflict incidents, it provides the most complete tally available, and includes precise geolocation data. In 2016 in Afghanistan, the dataset contains 2,423 conflict events, totaling 18,707 fatalities. The highest recorded number of casualties for an event is 158, with a mean of eight deaths per conflict event.

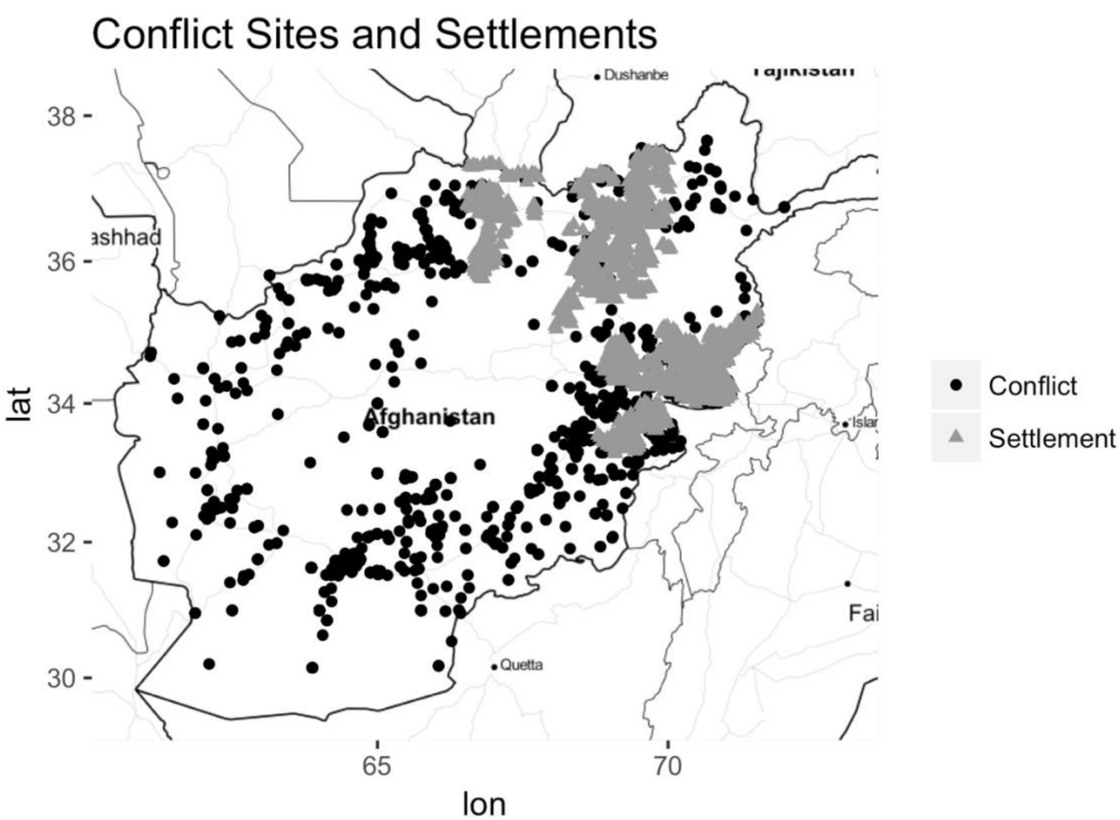

Figure 1

Distance

In order to analyze distance decay, I must calculate the distance between each conflict event and each settlement within the dataset. When measuring distance effects, travel time is a preferable metric to geodesic or straight line distance, as it better captures the core logistical constraints responsible for distance decay (Zhukov, 2012). Unfortunately, no viable method of travel-time calculation, such as road distance, is currently available for eastern Afghanistan. Instead, I measure the geodesic distance between each settlement and conflict-event, allowing violence totals for each settlement to be calculated based on distance.

Identity

In the context of Afghanistan, I focus on ethnicity as the primary identity dimension to the conflict, though in other conflicts political identity may play a similar role. As mentioned previously, tribal affiliation, both to immediate kin and to broader ethno-linguistic groups has been a key conflict dynamic in all of Afghanistan's wars. While mapping the relationships between these ethnic groups is next to impossible due to the shifting nature of wartime alliances, we should still expect there to be implications to direct shared-group membership (Christia, 2012). Afghanistan's major ethnic groups meet the criteria set forward by Steele (2009, 2011) for serving as the basis of collective targeting, as widespread, publicly observable, politically-relevant identity groups.

Measuring collective targeting directly is nearly impossible, as it requires unobtainable knowledge about actor intention (Kalyvas, 2006). However, the relevant mechanism here is not the actuality of collective targeting, but the perception of identity-based threats. Violence impacting members of one ethnic group serves as the basis for identity risk in contexts where identity is a relevant conflict dynamic. In order to test the identity risk hypothesis, then, we must establish violence affecting an identity group, and test the predictive power of that violence on displacement for civilians of that identity group. We can then compare that predictive power with violence affecting non-group-members, and test directly for whether shared group identity increases displacement per unit of violence.

Again, distance decay must be controlled for in measuring the effect of ethnicity. It could be the case that the targeted nature of identity cleansing, as observed for instance by Balcells and Steele (2016), is driven purely by *spatial* risk, with the identity-based ramifications stemming only from the deliberate targeting of identity-group population clusters by armed actors. In this account, civilians are not actually more threatened by collective targeting per se, but are merely responding to a form of spatial risk that has been deliberately made to match identity-group lines. For this reason, aggregate statistics that might indicate the ethnic makeup of conflict victims cannot be used. Controlling for distance decay requires some method of identity attribution at the conflict-event and settlement level.

In civil conflicts, observing the identity of potentially displaced civilians and of armed conflict fatalities is extremely challenging. In the absence of any reliable individual census data, I use the Ethnic Power Relations (EPR) shapefile dataset to establish the dominant ethnic group in each area of my sample (Wimmer, Cederman, & Min, 2009). The GeoEPR dataset indicates the presence of a politically relevant ethnic group majority in an area, or of multiple similarly-sized groups (Wimmer, 2015). In order to move down to the settlement level, I assign each settlement the majority ethnic group of its corresponding EPR ethnic territory. This provides a best-guess ethnicity to the population of each settlement, though there is no way to establish the size of the majority in any given settlement – there will be some inaccuracy from assigning minority civilians the majority identity.

While the UCDP GED dataset provides attribution data for a large proportion of the casualties, the relationships between a given armed actor and ethnic identity are not immediately obvious. The Afghan army, for instance, varies in ethnic makeup between regions, and it is unknown how its fatalities will be interpreted by any given settlement. It is therefore not possible to construct a full dataset of fatalities by ethnicity in order to test for shared ethnicity.

Instead, I first examine the effect solely of whether the conflict occurred within the same ethnic region as a settlement, or in a different one. This shared-ethnic-region variable may serve as a proxy for shared ethnic identity, especially for civilian casualties, but will overlap with other potential mechanisms such as information diffusion, as will be discussed below. This operationalization gives a more specific form of H2,

H2a: Displacement per unit of violence is higher when the site of violence is in the same ethnic region as the site of displacement.

Testing this hypothesis will cast some light on the influence of ethnic dimensions, but will do so in a way contingent on ethnic *territory*. In order to better isolate the collective targeting dimension of this relationship, we must better establish the presence of shared ethnic identity, separate from other territoriality effects. While the relationship between armed actor attribution and ethnic identity remains difficult in general, the Pashtun-Taliban linkage provides an important exception. Historically, Taliban forces have been primarily Pashtun, and while membership has grown to include non-Pashtun members, leadership remains heavily Pashtun (Christia, 2012). So long as Taliban forces are viewed by Pashtun civilians as a primarily pro-Pashtun force, casualties to Taliban forces should be more threatening to Pashtun civilians than violence inflicted by the Taliban.

As previously discussed, such pro-Taliban perceptual bias has been previously observed, with Pashtun civilians in Afghanistan tending to view violence committed by ISAF forces much more negatively than similar violence committed by the Taliban (Lyall et al., 2013). This strongly suggests of the type of group identity capable of driving perceived identity-risk, and the observed Pashtun-Taliban connection allows for an operationalization of the context in Afghanistan. We can again specify a more specific form of H2

H2b: Pashtun displacement per unit of violence is higher for Pashtun fatalities than non-Pashtun fatalities.

In order to test this hypothesis, I examine only the subset of villages within Pashtun majority regions. The dependent variable is total civilian displacement by Pashtun settlement. Fatalities from the UCDP dataset are categorized as either Pashtun or non-Pashtun. Civilian casualties are attributed based on EPR ethnic region, with civilian casualties within Pashtun-majority regions assumed to be Pashtun. Armed actor fatalities are separated into Taliban and non-Taliban, with non-Taliban forces assumed to be non-Pashtun. This assignment will produce some error, as local chapters of forces such as the Afghan army may in fact be majority Pashtun, and perceived as a pro-Pashtun actor. Given data constraints, however, focusing on the Pashtun-Taliban linkage allows for the most direct measure of ethnic ties.

Control Variables

While variations in individuals' thresholds for flight are not the focus of this study, factors that might cause substantial variation must be controlled for in order to avoid omitted variable bias. The literature on potential threshold effects is broad, and it is not possible to control for all identified factors here. However, because the sample is confined to only eastern Afghanistan, there should not be substantial variation for a number of important threshold effects. Pull-factors related to neighboring countries should be functionally equal for all the civilians in the sample. Other country-level effects, such as regime type, are also constant across the sample.

Four remaining factors can be controlled for: terrain, GDP, travel time to the nearest city, and distance to the border. Terrain is expected to reduce displacement and distance traveled by increasing travel costs (Adhikari, 2012). GDP has been argued both to reduce displacement by increasing economic incentives to stay, and to increase displacement by increasing civilians material ability to flee (Adhikari, 2012; Davenport et al., 2003; Williams et al., 2012). Travel time to the nearest city may track costs to internal relocation (Adhikari, 2012). Distance to the border may increase the proportion of refugees by lowering the costs of international displacement (Moore & Shellman, 2006). In order to control for each of these factors, I use data collected by the PRIOGRID system, which offers detailed information on a 50km^2 grid (Tollefsen, Strand, & Buhaug, 2012).[2] Terrain is controlled for by a continuous measure of how mountainous the area is. GDP is measured via nightlights. Distance to the border is calculated from the center of the grid square. In order to maintain the settlement as the unit of analysis, I assign each settlement the values of the corresponding grid. This causes slight inaccuracies, but is the most granular data available for Afghanistan.

Results and Discussion

Spatial Risk

[2] See Appendix 1

To analyze the impact of distance I use the settlement-year as my primary unit. For each settlement, I sort all conflicts in 2016 into expanding 10 kilometer bands, as determined by geodesic distance. Within each band, I aggregate the total number of fatalities, allowing me to test the predictive relationship between total deaths and total displacement by band via a multivariate OLS regression. Controls for GDP, travel time to nearest city, distance to the border, and terrain are included. The regression results are shown in figure 2, with the coefficients for each distance band on the x-axis.[3] 95-percent confidence intervals are included, with intervals crossing the 0 line on the x-axis indicating that variable's results are insignificant.

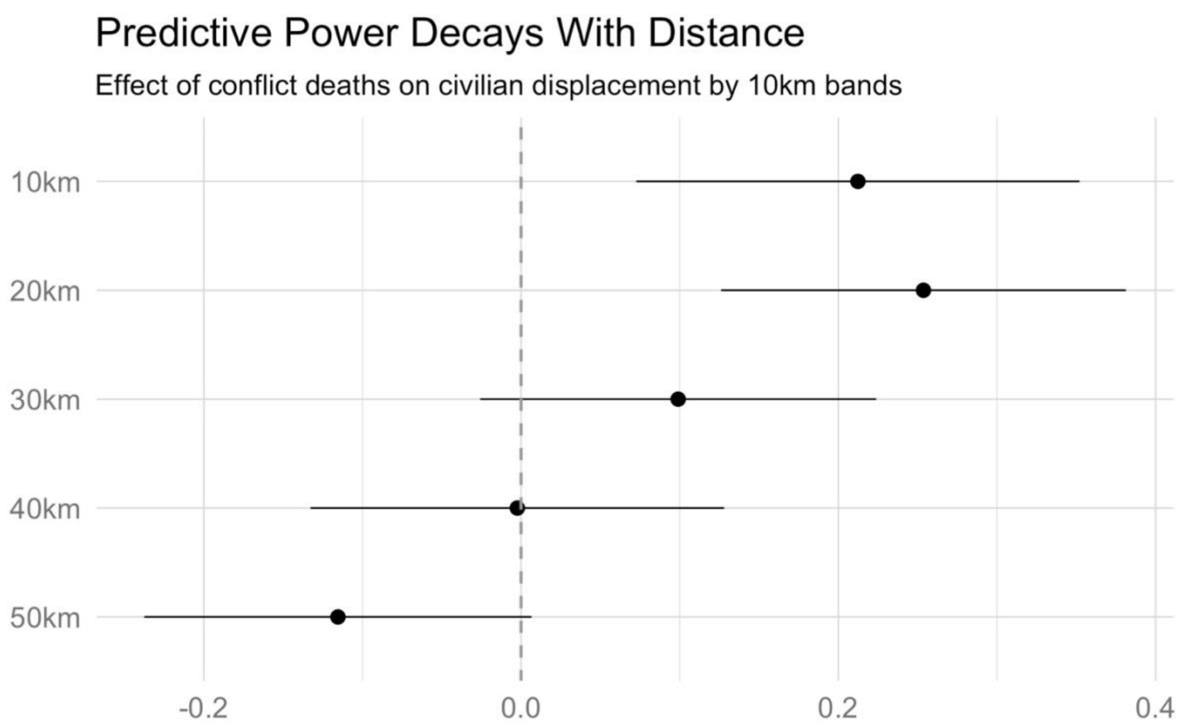

Figure 2

For combined displacement figures, there is a clear distance decay in the predictive power of violence on civilian displacement. Within 20km, violence is a strong positive predictor

[3] Full tables for all regressions, including control variables, are included in appendix 2

of displacement, with every 5 fatalities producing an additional displaced person per settlement. Beyond 20km, however, the relationship loses significance. Beyond 40km, the coefficient is negative, indicating that more violence at that distance actually reduces displacement. It could plausibly be the case that more distance violence does in fact reduce displacement by reducing the perception of safe potential destinations. Clearly, though, violence at that distance is not meaningful driver of civilian displacement. Distance to the border and mountainous terrain both additionally increase displacement, while proximity to a major urban center reduces it; however none of the control variables substantially impact the core relationship between violence and displacement. As a whole, the results indicate that displacement as a function of violence is strongly dependent on distance.

The aggregate distance-bands model confirms again the literature consensus that violence is a powerful predictor of displacement. While terrain and distance to the border both do impact total displacement figures, they do not remove the strong relationship between total fatalities and civilian displacement. The distance-bands findings do depart significantly from the current literature, however, in showing the powerful mitigating role that distance has on that relationship.

This finding does not merely provide a higher level of granularity than previous studies, but points to a major flaw in aggregated approaches. While previous studies have used subnational data, it has remained at the regional or district level. The results presented here, however, indicate that even small levels of aggregation can significantly overshoot the threshold for relevant violence. As such, even lightly aggregated data may substantially over-predict the amount of relevant violence for any given settlement. Simultaneously, they may under-predict the impact of even low levels violence when they occur in close proximity to a civilian population.

Additionally, these findings cast light on Melander and Öberg's (2007) results regarding the primacy of scope over intensity of conflict in predicting civilian displacement. Rather than the perception of the conflict being *widespread* driving displacement, the importance of scope is explained here as a byproduct of strong distance decay. Countries with high-scope conflicts will have far more civilian populations within the necessary distance threshold for violence to produce displacement, even if those countries experience less overall violence than more geographically limited conflicts. Indeed, when working with aggregated data, Melander and Öberg's scope variable may best be thought of as a partial control for distance decay effects.

The presence of a strong distance decay function for violence has significant implications for both understanding and responding to civilian displacement. Predictive models that too heavily weight total levels of violence without attempting to account for distance decay may systematically overestimate displacement in geographically concentrated conflicts. By the same measure, models informed by historically low-scope conflicts may significantly underestimate the displacement caused by more widespread conflicts, as more civilians are brought within the effective displacement radius of conflict events. Either of these issues may lead to significant errors at the macro-forecasting level.

Equally important is the degree of internal variation implied by strong distance decay. If displacement is an essentially localized phenomenon, policy responses that over-weight the magnitude of violence may misallocate resources within a given country or region. The increase of violence in one region may do little to increase displacement rates, while small new conflicts close to new population centers may produce high levels. Aid, security, and other resources may be badly misallocated without sufficiently granular conflict data. Such recommendations may seem obvious to practitioners, but have been largely neglected in the academic study of displacement.

The results here reliably show the presence of distance decay. The basic mechanism at play – reduction of threat perception as a function of distance – should be a consistent feature of human psychology applicable in all conflict scenarios. However, the specific distance threshold of around 20km found here does not have such external validity. The conflict in Afghanistan possesses a number of distinctive features which could impact the actual distance threshold at which significant perception of threat begins. Firstly, the terrain in the sampled areas is generally difficult, with major barriers to travel. As importantly noted by Zhukov (2012), the real variable of interest in studying spatial effects is not straight line distance, but real travel time. Countries with more manageable terrain or superior travel infrastructure may therefore have significantly weaker distance decay as a function of geodesic distance, due to correspondingly lower travel time. Secondly, the duration of the Afghanistan conflict may increase the strength of distance decay, as civilians sensitive to violence occurring 50 or 60km away may have simply already decided to flee, leaving behind high-threshold persons requiring significant perceptions of threat to be displaced. As such, less-mature conflicts may have weaker distance decay, with civilians more prone to flight in general. Finally, the settlements surveyed here are largely rural settlements, with fewer urban areas surveyed. Perceptions of distance may vary significantly between rural and urban areas, with urban perceptions of potentially relying more on relative neighborhood or street position, rather than being measurable in kilometers.

Taken together, these effects cast serious doubt on the 20km mark as any reliable psychological phenomenon. The existence of distance decay in general, however, is strongly supported. There is significant room for future research on understanding the factors determining distance decay, the extent of variance in effective-threat thresholds between countries, and the evolution of distance decay throughout the duration of a conflict. Better understanding any of these effects may significantly improve our ability to predict civilian displacement as a function of armed conflict.

Identity Risk

Ethnic Regions

The first specification of the identity-risk hypothesis predicts that fatalities will produce greater displacement in settlements within the same ethnic region. With each conflict-event and settlement annotated by ethnic region, I split fatalities for each settlement into same-region and different-region categories. I control for distance by repeating the 10km band method in the first model, only now with each distance band split by shared-region and different-region fatalities. GDP, border distance, time to nearest city, and terrain controls remain the same. For the first analysis, I test the relationship between each distance band and the combined civilian-displacement total in a multivariate OLS regression. The results are shown in figure 3, with the estimates for both models shown side-by-side for each distance band.

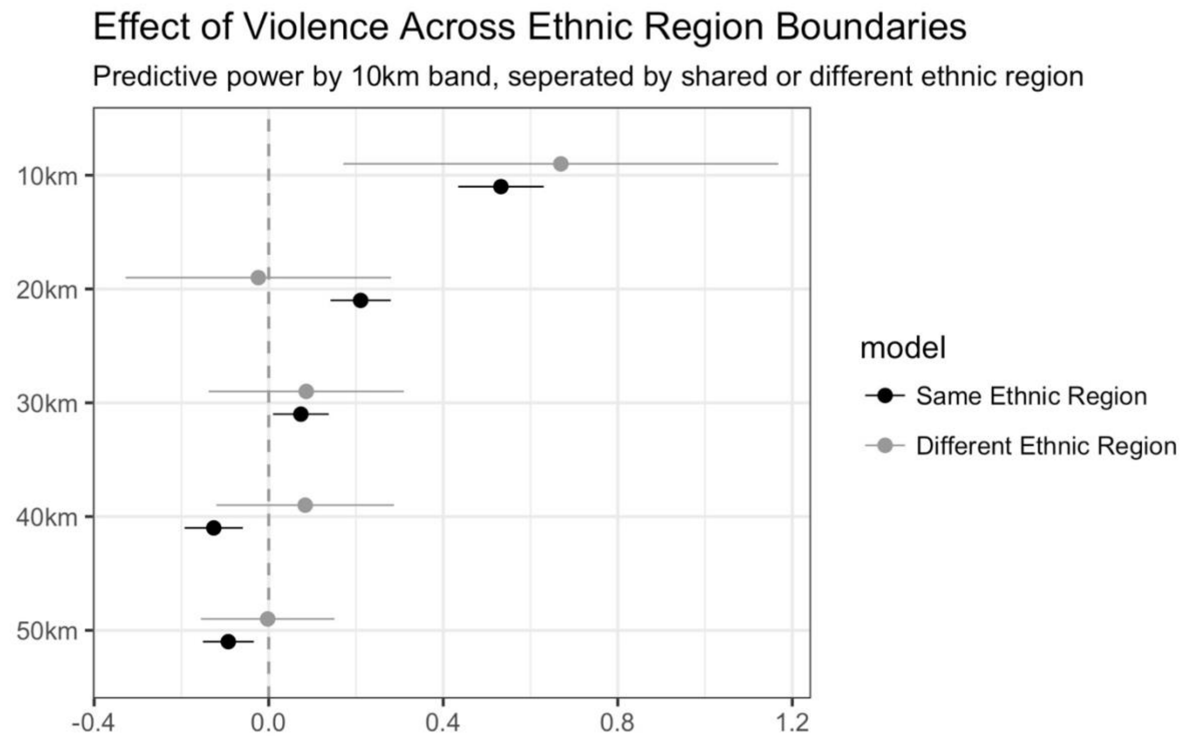

Figure 3

In keeping with the ethnic cleansing and identity literatures, the ethnic-regions model does appear to show variance in responses to violence along ethnic lines. Within 10km, same-region and different-region fatalities are similarly related to total civilian displacements. For either, every two additional fatalities produces and estimated one additional displaced person, though the standard errors for different-region fatalities are notably larger than for same-region fatalities. Beyond 10km, there is significant divergence between same- and different-region fatalities. Same-region fatalities are a substantially better predictor of displacement within the 20 and 30km bands, and follow a similar distance decay function to model 1. Beyond 30km, the coefficient for same-region fatalities is negative. In contrast, different-region fatalities have a negative coefficient in the 10-20km band, and never return to being a positive and significant predictor. These results indicate that there is an element of *social* closeness separate from purely *spatial* proximity.

It is not immediately clear exactly what mechanism drives this relationship. One plausible explanation is the collective-targeting process described by Steele (2009) and adopted here as identity-risk. Conflicts within an ethnic region may signal to other members of that region that they are being targeted for violence. Fatalities within an ethnic region are more likely to be members of that ethnic majority, allowing ethnic region to serve as a proxy for the identity of victims of violence. Understood this way, the results from the ethnic-region model support the identity-risk mechanism in Steele's work, with civilians driven into flight by the perception that they are likely to be targeted due to their identity-group membership.

However, ethnic regions are not a perfect proxy for ethnic identity of victims, nor for perceptions of collective targeting. While the results are promising for an identity-risk hypothesis, they could also be explained by the potential informational effect of shared ethnic territory. Informal communication networks are often centered along ethnic lines, particularly in times of conflict (Bergren & Bailard, 2017; Lyall, 2010; Weidmann, 2015). Furthermore, Afghanistan's ethnic groups are largely linguistic, providing an additional layer of superior in-group communication (Christia, 2012). As such, civilians may possess significantly better information about conflicts which occur within their ethnic region, as they are more likely to be communicated through social networks. This opens up the possibility that civilians are not actually making a distinction between collectively-targeted violence and other forms of violence, or indeed making any calculation of identity-based risk. It may be the case that responses to violence are independent of any ethnic dimension, but that civilians are more likely to know about and respond to violence that occurs within their ethnic regions, and are less likely know about violence outside their region.

Without being able to test directly for informational effects, or isolate collective targeting distinct from territorial effects, there is no way to be sure which of these mechanisms is responsible for the results observed here. The significance of ethnic regions is consistent with an identity-risk hypothesis, but an informational effect cannot be ruled out.

Whichever mechanism is ultimately responsible for this variation, however, the simple existence of ethnic region effects has ramifications for predictive and policy work. Even when properly accounting for distance decay, models must also include potential regional effects. Assuming constant distance decay across regional borders may overestimate displacement in nearby settlements. Correspondingly, an aggregate estimate of distance decay, such as the one developed in model one, will over-estimate the real distance drop off within an ethnic region, and may underestimate displacement for same-region settlements. Predictive efforts and resource allocation should take this ethnic region variation into account.

Pashtun-Specific

The second specification of the identity-risk hypothesis predicts that Pashtun fatalities will produce more displacement in Pashtun settlements than non-Pashtun ones. In contrast to the ethnic-regions model, the Pashtun-specific model offers the opportunity to directly test the role of ethnic ties, absent the territoriality element of the ethnic-regions model. Here, if same-ethnicity fatalities were to serve as a superior predictor of displacement, the identity mechanisms would be more clear. Similarly to the previous model, I recreate the 10km band fatalities, this time split into Pashtun casualties and non-Pashtun casualties. Sorted this way, the data can now be used to compare the predictive strength of Pashtun and non-Pashtun fatalities on Pashtun displacement (figure 4). GDP, border distance, travel time, and terrain controls remain the same.

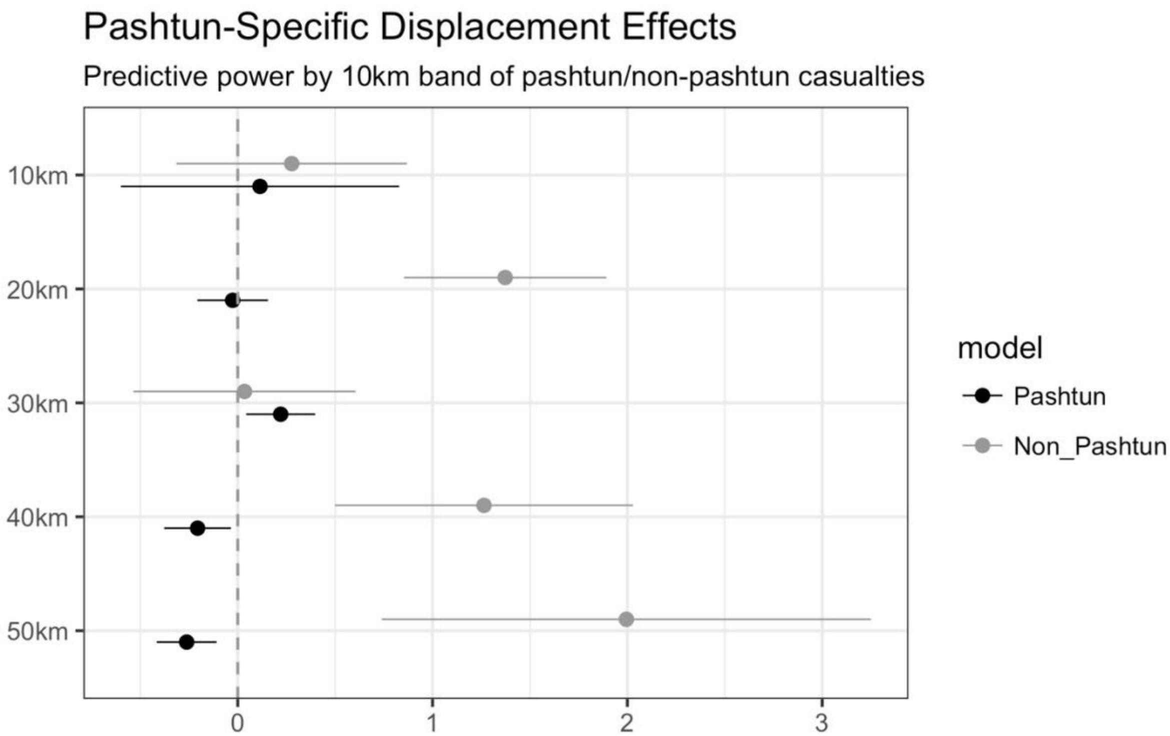

Figure 4

These results do not support an identity-risk hypothesis. Contrary to expectations, Pashtun fatalities are not a positively or significantly related to Pashtun displacement in any but the 20-30km band. Surprisingly, non-Pashtun fatalities are more strongly related to Pashtun displacement, with positive coefficients in each of the bands. Additionally, the coefficients for non-Pashtun casualties actually increase in the 40 and 50km bands, the only result thus far which does not clearly follow distance decay. This lack of distance decay, coupled with the substantial standard errors for the non-Pashtun fatalities cast doubt on the validity of this relationship. While the results may not go as far as to support an opposite hypothesis, that non-Pashtun casualties are a superior predictor of displacement, the predicted effect of shared ethnic ties is not observed. This lack of relationship may cast some doubt on the role of identity links, absent some form of territorial factor, in determining threat perception.

This failure to find direct ethnicity effects may be in part an artifact of the case examined. As noted before, while Afghanistan's ethno-linguistic groups are historically relevant to conflict dynamics, Afghanistan is not experiencing an active ethnic or political cleansing campaign of the type present in Bosnia or Colombia. It may be the case that the identity risk dimensions of the Afghanistan conflict are not sufficient to produce a reliable effect. Such a finding does not challenge the importance of identity in more extreme cases of identity cleansing. It does, however, indicate that identity risk may not be as consistent a feature of civilian displacement as spatial risk, requiring some significant threshold of identity-based targeting by the conflict actors to emerge as a significant factor. Such a "relevance threshold" for identity effects merits further study, as many conflicts resemble contemporary Afghanistan in possessing identity-group elements without involving explicit genocide or politicide (Gleditsch et al., 2016).

IDPs and Refugees

The previous models explore the relationship between various forms of probability of violence and aggregate civilian displacement. According to the bulk of civilian displacement literature, the drivers of the decision to flee ought to function the same for civilians who become IDPs and those who become refugees, with destination ultimately being determined by path-affecting variables like foreign contacts and distance to the border. Here I split each of the previous models into IDP- and refugee-specific ones. By disaggregating the dependent variable in this way, we can observe any systematic variation in the relationship of IDP and refugee displacement with drivers of perceived threat. As noted previously, the sample contains substantially more IDPs than refugees, meaning that IDP-specific results tend to more closely match the aggregate figures, and refugee-specific coefficients and standard errors are lower across the board.

<u>Distance Decay</u>

The aggregate displacement model suggests a distance decay for the effect of violence on displacement (figure 2). To compare the distance decay function for refugee and IDP displacement, I construct a full model for each population type. Each model contains identical independent variables, with the same 10km bands and controls as the previous models (figure 5).

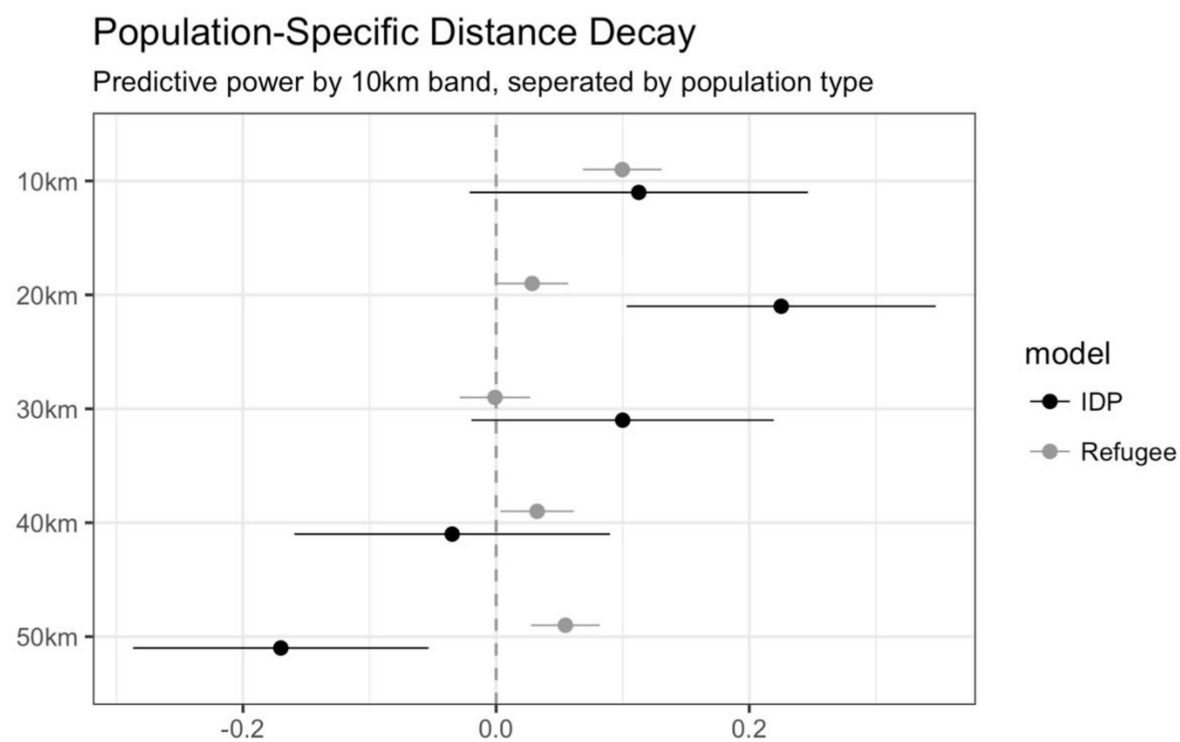

Figure 5

The distance decay function diverges for IDPs and for refugees. Somewhat unsurprisingly, as they make up the majority of the total displacement figure, IDPs follow roughly the same distance decay function as in the aggregate distance model. While standard errors are increased, the core finding that violence ceases to be an effective predictor beyond around 20km remains consistent. It appears that IDP displacement is a highly localized phenomenon, with a clear maximum threshold for distance to communicate threat.

For refugees, while there remains a distance decay effect, it is significantly weaker than for IDPs. The coefficients for refugee production are lower across the board due to their lower total numbers, but crucially they do not drop nearly as sharply as for IDPs. With the sole exception of the 30km band, fatalities remain a positive and significant predictor out to 50km. This points to spatial risk as a relatively more important mechanism for IDPs, with violence needing to be very close to cause displacement, while refugee displacement is sensitive to violence across greater distances. Together, these results show a significant divergence in the sensitivity of IDP and refugee displacement to distance from violence.

Ethnic Region Effects

The next effect to test by population is the impact of shared ethnic region. The aggregate model indicated that same-region fatalities are more strongly linked to overall displacement rates (figure 3). Here the model is split into an IDP-specific and a refugee-specific one, with distance bands and control variables identical to the aggregate model. The results are show in figure 6, with the left-hand panel displaying the comparative results for IDP displacement, and the right-hand panel showing results for refugee displacement.

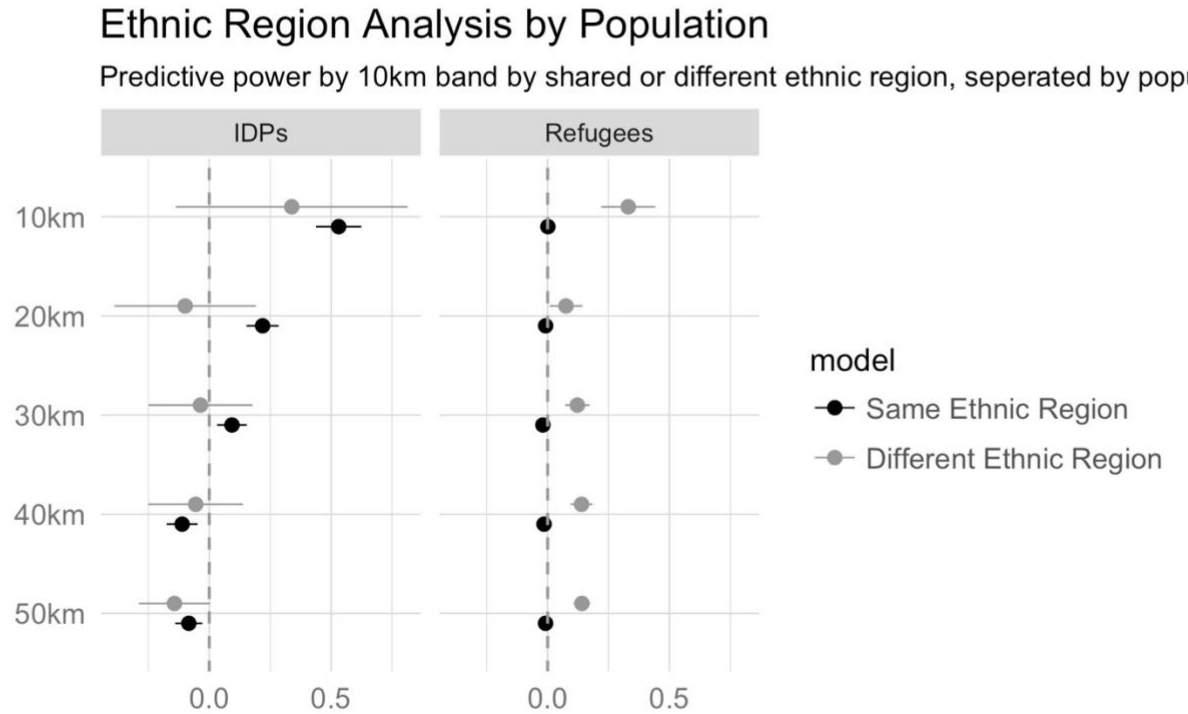

Figure 6

The results from the IDP-only model remain relatively unchanged from the total model. The coefficients on different-region fatalities have fallen, and the standard errors on same-region fatalities decreased slightly, both serving to strengthen the superior relationship between same-region fatalities and displacement. At no distance are different-region fatalities a reliable predictor of IDP displacement, with high standard errors negative coefficients past 10km. Contrastingly, same-region fatalities are a strong predictor, following a steady distance-decay until becoming negative and weak predictors past 30km.

Again, the refugee-only results differ substantially. Same-region fatalities are not correlated with refugee displacement at *any* distance. Coefficients are extremely low in magnitude and predominately negative. Surprisingly, different-region fatalities are linked with refugee displacement, with positive and significant coefficients in all five distance bands. As in the previous model, the distance decay associated with refugee displacement is minimal.

Different-region fatalities within 10km are most closely linked with refugee displacement, but values from 20-50km are relatively constant. At the least, the ethnic-region effects observed in the aggregate model do not hold for refugees, and to some extent are reversed.

It is not obvious why refugee displacement would be better predicted by different-region fatalities. It could be the case that different-region fatalities reduce the appeal of internal displacement strategies, as threats are not territorially constrained, and prompt more civilians to become refugees. This phenomenon merits further study. More immediately, however, it is clear that IDPs are more sensitive to violence events within their ethnic region, while refugees are not. It is not obvious why. It has been argued that refugee production is more strongly influenced by targeted persecution, as fleeing the country may be necessary to reduce the threat (Moore & Shellman, 2006). Such a mechanism, however, should produce the opposite of the observed results, with refugees being more sensitive to same-ethnic-region conflicts. I will return to this issue below.

Pashtun-Specific Displacement

The final effect to test by population is the role of Pashtun linkages in displacement. The combined displacement results for the Pashtun-specific model did not find a stronger relationship between Pashtun fatalities and Pashtun displacement, contrary to H2b (figure 4). Here, the full Pashtun-specific model is split into an IDP- and refugee-specific model (figure 7).

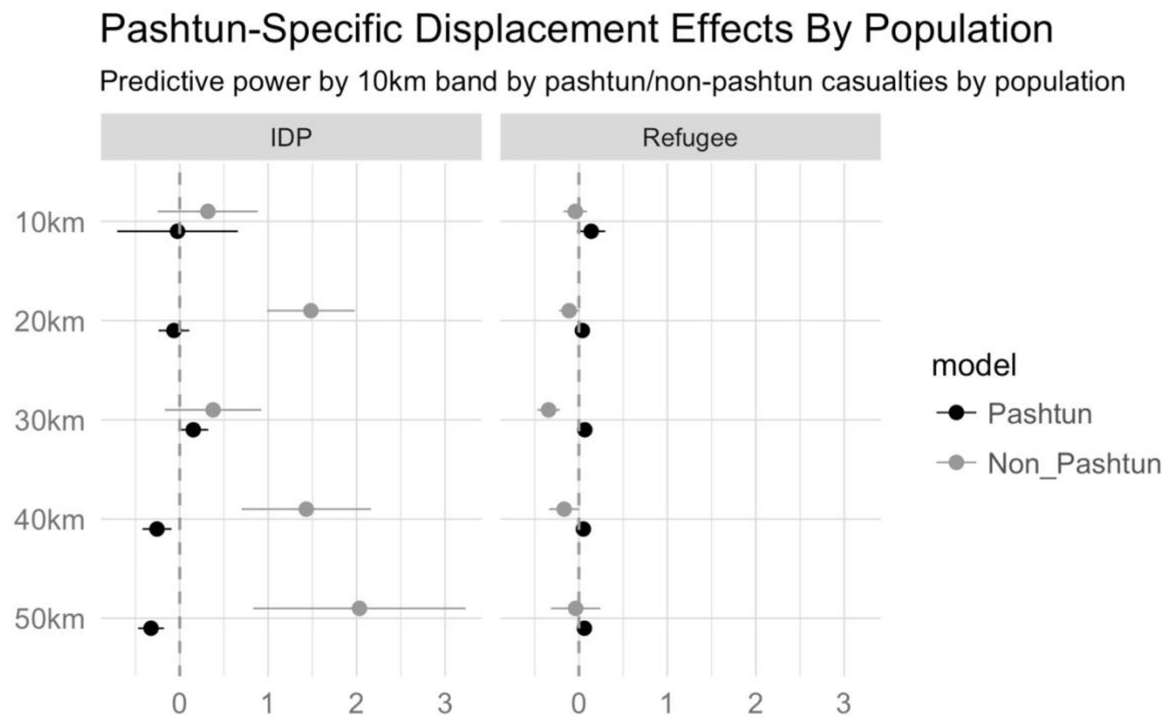

Figure 7

Results for IDP displacement remain highly variant. Pashtun fatalities are not strongly linked to IDP displacement, and in several bands have a negative coefficient. Non-Pashtun fatalities are more strongly linked, with higher coefficients in every distance band than Pashtun fatalities. The unexpected lack of distance decay remains from the aggregate model, with coefficients for non-Pashtun casualties actually increasing past 30km for IDP displacement. These results remain difficult to account for, with the increasing coefficients for non- Pashtun fatalities in particular running contrary to the strong findings in favor of distance-decay.

However, results for refugee displacement are significantly different than in the combined model. Refugee displacement in Pashtun settlements is not predicted by non-Pashtun fatalities in any distance band, with negative coefficients for all distances. Refugee displacement is, however, positively related to Pashtun fatalities in each distance band. Every 10-15 Pashtun casualties produce an additional refugee per Pashtun settlement within most of the distance bands. While there is some distance decay, it is much less significant than in the full model, and Pashtun fatalities remain a positive predictor of Pashtun refugee displacement into the 50km band. These results are contrary to those from the aggregate model, and are much more in line with the identity-risk hypothesis.

Taken together, the split-population results show that refugee and IDP displacement do in fact diverge. This differential displacement is similar in structure to the one proposed by Moore and Shellman (2006), but subject to in-country variation and centered around the differing role of distance in displacement. As a whole, IDP production is much more strongly dependent on distance, consistently displaying substantial distance decay. This is consistent with a deliberate threat-reduction conception of displacement. For conflicts which are heavily localized, in which spatial risk is the main driver of perceived probability of being affected, relocation to a different part of the country is a viable tactic to reduce the risk. If we take the threshold for significant perceived risk to be around 20km, relocating to a part of the country without violence inside this threshold is at least plausible.

Refugee production, on the other hand, is less strongly correlated with distance. This would seem to suggest that future refugees' perceptions of threat are less driven by purely spatial risk. If an individual perceives threat to be a non-local issue, for whatever reason, we should expect leaving the country entirely to be more necessary to reduce the threat. As pointed to by Moore and Shellman (2006), it is unsurprising that more local threats produce more internal displacement.

This interpretation is consistent with the results from the Pashtun-specific model. There, while the specific results for IDPs remain unexpected, there is a clear split between the relative sensitivity of refugees to ethnic ties, and the relative insensitivity of IDPs. The strong relationship between Pashtun fatalities and Pashtun refugee production points strongly towards an identity-risk based interpretation. Individuals perceiving themselves to be at risk of violence as a function of their ethnicity may not consider internal relocation as a sufficient strategy. So long as that identity-based risk is not constrained to a given territory, leaving the country entirely and becoming a refugee may be necessary. The distance-decay results and the Pashtun-specific results tell a consistent story in which refugee production is driven by more identity-based, less spatially determined risk, while IDP production is dominated by spatial risk.

The apparent exception to this interpretation are the ethnic-region results. Here, IDPs appear to be more sensitive to ethnic-identity linkages, with refugees showing little or negative sensitivity. It is undeniable that these results complicate the picture, however they do not directly contradict the previous findings. Crucially, the ethnic region model measure the effect of *territorial sameness,* it does not directly measure ethnic linkages like the Pashtun-specific model. One of the plausible mechanisms behind the regional effects was shared ethnic ties, with ethnic region serving as a proxy for the ethnic identity of victims. If such a mechanism is in fact at play, it would run contrary to the otherwise more spatially-motivated nature of IDPs.

There are however, two other potential interpretations. One, as previously discussed, is an information-based phenomenon. Rather than serving as a signal of collective targeting, same-region fatalities may simply be easier to hear about. This interpretation would explain why refugees are not more sensitive to same-region fatalities – there is no identity mechanism at play – but it does not explain why they are *less* sensitive, or indeed why there is any systematic difference between IDPs and refugees. If the core difference is simply that information on same-region conflicts is more readily available, that informational difference ought to be the same for refugees and IDP populations, not the source of systematic variance.

Finally, and most plausibly, the split may be driven by a type of hybrid collective-targeting risk. Same-region fatalities may serve as a signal for a type of collective targeting, but do so in a *spatially dependent* way. That is, fatalities in a region may signal identity-risk to other members of the region, but that risk could be contingent on their presence in that region. For example, IDAF counter-Taliban campaigns may communicate significant identity risk to Pashtun civilians in the area, but not to Pashtun civilians in other parts of the country. Such a mechanism would produce greater perceived threats to members of the region, but leave open internal displacement as a potential strategy. This is consistent with what we in fact observe, where same-region fatalities are a much stronger predictor of displacement, but specifically for IDPs.

While the differential response of IDPs and refugees to violence certainly merits further study, particularly the region-based effects, it is clear that there is consistent variation between the two populations. Rather than solely being determined by path-impacting variables such as neighboring country stability or terrain, relative rates of IDPs and refugees are influenced by conflict dynamics. IDPs appear to be responding primarily to spatial risk. They exhibit extremely strong distance-decay and territorial effects, and are not highly sensitive to pure ethnic-identity effects. Contrastingly, refugees exhibit less distance decay, and are highly sensitive to ethnicity-based effects. Accounting for these effects is an important part of predicting the relative numbers of refugees and IDPs that may flee a given conflict, and should be included alongside any more path-focused account of flight.

Robustness

There are two potential challenges to validity to be aware of for the results presented above. The first is the possibility of non-random sampling, as the settlement dataset is both a subset of provinces within Afghanistan, and a subset of settlements within those provinces. In order to check for sampling bias, I test at the PRIOGRID 50km2 level for any systematic correlation between whether a grid was sampled and GDP (nightlights), distance to the border, travel time to the nearest city, terrain, number of conflicts, and fatalities.[4] There was a slight bias towards more mountainous regions and regions with more nightlights, but most importantly there was not systematic relationship between sampling and either number of conflicts or conflict fatalities. As such there should be no spurious results due to non-random sampling.

A second potential challenge to validity is the inherent bias in the sample towards same-region fatalities. For the ethnic-regions model, same- and different-region fatalities are compared as predictors of displacements. However, the majority of settlements are not on the border between regions, leading to far more same-region fatalities within 50km than different-region fatalities.[5] This lopsided data may artificially reduce the power of different-region fatalities. Thus while the results presented in the ethnic regions model are statistically significant, the gap between same and different ethnic-region effects may be mildly inflated.

Conclusion

Civilian displacement is complex, and much more work remains to be done to understand the circumstances facing those who flee their homes. However, the results presented here offer several important additions to our understanding of civilian displacement. Most concretely, this article set out to test three predictions: that threat perception depended on geography, that it depended on identity, and that the type of threat people face influences where they flee to. There

[4] See appendix 3
[5] Appendix 3

was substantial evidence for the first and third, with violence beyond 20km having no effect on displacement, and with IDPs responding much more strongly to spatial risk while refugees were more sensitive to identity risk. The results for the second hypothesis were more mixed, with identity having some effect, but with that effect potentially explained by other territorial mechanisms.

These findings have immediate practical importance. Predictive models must take into account the role of distance and ethnic territory if they are to accurately forecast overall displacement, and ultimately inform aid responses and other humanitarian efforts. Policy makers concerned with the relative proportion of refugees and IDPs, perhaps due to the different needs of each population, cannot ignore the nature of the threat causing that displacement in the first place. Finally, policy makers must allow these patterns of displacement to inform attempts at conflict resolution, particularly the importance of distance and the potential benefits of strategies of containment for reducing displacement.

Beyond these concrete implications, these results have broader significance for the study of displacement more generally. Firstly, this article has important methodological ramifications in showing the indispensability of disaggregated data. In the data examined here, conflicts more than 20km from villages had no real effect on displacement. Even small levels of aggregation are likely to dramatically overshoot that mark, fundamentally misunderstanding the situation of civilians and ignoring the importance of variations in geography and identity. Furthermore, internal and international displacement are not just a matter of path, but are different responses to different threats, highlighting the need for not just spatially disaggregated data, but population-specific data. IDPs and refugees cannot continue to be treated as identical.

Finally, these results show the importance of more detailed accounts of how individuals perceive threat. The dimensions examined here, geography and identity, produced important results for understanding and predicting both levels and types of displacement. More work remains, however, in understanding what threatens and motivates civilians in conflict. Areas such as the significance of sexual violence, or the strength of distance decay in different contexts, remain unexplored. Understanding displacement from the perspective of the displaced requires approaches that at least attempt to accurately portray the perceptions of civilians, even in quantitative work.

Civilian displacement continues to be one of the great crises facing the world. Understanding and predicting when and why people flee their homes is essential to any response. The results of this article offer specific findings to inform forecasters and policy makers, but also highlight the work remaining to be done. With an increase in disaggregated data, and a greater focus on how people perceive and respond to violence, there is a clear path forward to better understand when and why people are forced from their homes. Ultimately, that understanding will be central to informing how countries and institutions are the world respond to the plight of the displaced.

Appendices

Appendix 1: Descriptive Statistics

<u>DTM Displacement Data</u>

	Aggregate	*IDPs*	*Refugees*
Minimum	0	0	0
1st Quartile	15	0	0
Median	70	28	11
Mean	176.5	130.3	46.18
3rd Quartile	175.0	112	45.5
Maximum	10,570	10,500	1670
Standard Deviation	433.3	414.3	99

UCDP GED Conflict Data

	Fatalities
Minimum	0
1st Quartile	2
Median	4
Mean	7.7
3rd Quartile	8.5
Maximum	158
Standard Deviation	12.2

PRIOGRID Control Variables

	Mountains	*Nightlights*	*Border Distance*
Minimum	0	0	3.9
1st Quartile	0.73	0	30.9
Median	0.90	0.3	50.1
Mean	0.82	1.3	63.8
3rd Quartile	0.98	1.1	96.1
Maximum	1	11.6	187.5
Standard Deviation	0.21	2.88	41.63

Appendix 2: Regression Tables

Distance Model (Figure 2)

Term	*Coefficient*	*Std.Error*	*P-Value*
Deaths 0-10km	0.212	0.071	0.003
10-20	0.254	0.065	0.000
20-30	0.099	0.064	0.120
30-40	-0.002	0.067	0.971
40-50	-0.115	0.062	0.064

Border Distance	0.567	0.194	0.003
Time to City	-0.223	0.061	0.000
Nightlights	1.855	3.140	0.555
Mountains	241.878	44.605	0.000

<u>Ethnic-Regions Model (Figure 3)</u>

Term	*Coefficient*	*Std.Error*	*P-Value*
Same-Region 0-10km	0.532	0.050	0.000
S-R 10-20	0.211	0.035	0.024
S-R 20-30	0.074	0.033	0.024
S-R 30-40	-0.126	0.034	0.000
S-R 40-50	-0.093	0.029	0.012
Diff-Region 0-10km	0.670	0.254	0.009
D-R 10-20	-0.024	0.155	0.878
D-R 20-30	0.086	0.114	0.451
D-R 30-40	0.084	0.104	0.421
D-R 40-50	-0.002	0.078	0.976

Border Distance	0.519	0.213	0.015
Time to City	-0.178	0.059	0.003
Nightlights	0.673	3.156	0.831
Mountains	263.011	47.006	0.000

Pashtun-Specific Model (Figure 4)

Term	*Coefficient*	*Std.Error*	*P-Value*
Pashtun Deaths 0-10km	0.114	0.364	0.754
Pashtun 10-20	-0.026	0.093	0.778
Pashtun 20-30	0.220	0.090	0.015
Pashtun 30-40	-0.206	0.087	0.018
Pashtun 40-50	-0.262	0.079	0.001
Non-Pashtun 0-10km	0.277	0.302	0.359
NP 10-20	1.373	0.265	0.000
NP 20-30	0.035	0.291	0.905
NP 30-40	1.264	0.390	0.001
NP 40-50	1.995	0.641	0.002

Border Distance	0.530	0.195	0.007
Time to City	-0.233	0.061	0.000
Nightlights	-6.765	4.834	0.162
Mountains	236.959	44.983	0.000

<u>Split-Population Distance Model (Figure 5)</u>

Term	*IDP Coeff*	*IDP Std.Error*	*IDP P-Value*	*Refugee Coeff*	*Refugee Std.Error*	*Refugee P-Value*
Deaths 10-20km	0.113	0.068	0.099	0.010	0.016	0.000
10-20	0.225	0.062	0.000	0.028	0.015	0.050
20-30	0.010	0.061	0.101	-0.001	0.015	0.948
30-40	-0.035	0.064	0.585	0.032	0.015	0.029
40-50	-0.170	0.060	0.004	0.055	0.014	0.000
Border Distance	0.222	0.185	0.232	0.346	0.043	0.000
Time to City	-0.207	0.058	0.000	-0.017	0.014	0.217

Nightlights	1.783	3.004	0.553	0.072	0.699	0.918
Mountains	281.785	42.679	0.000	-39.910	9.931	0.000

Split-Population Ethnic Regions Model (Figure 6)

Term	*IDP Coeff*	*IDP Std.Error*	*IDP P-Value*	*Refugee Coeff*	*Refugee Std.Error*	*Refugee P-Value*
SR 0-10	0.521	0.048	0.000	0.001	0.011	0.926
SR 10-20	0.219	0.034	0.000	-0.008	0.008	0.290
SR 20-30	0.093	0.031	0.003	-0.019	0.007	0.008
SR 30-40	-0.111	0.033	0.001	-0.015	0.008	0.054
SR 40-50	-0.084	0.028	0.003	-0.009	0.007	0.195
DR 0-10	0.339	0.242	0.163	0.331	0.057	0.000
DR 10-20	-0.099	0.148	0.504	0.075	0.035	0.029
DR 20-30	-0.036	0.109	0.741	0.112	0.025	0.000
DR 30-40	-0.056	0.099	0.574	0.139	0.023	0.000
DR 40-50	-0.143	0.075	0.055	0.141	0.017	0.000
Border Distance	0.557	0.203	0.006	-0.039	0.047	0.415

Time to City	-0.177	0.057	0.002	-0.001	0.013	0.916
Nightlights	-3.105	3.011	0.302	3.777	0.701	0.000
Mountains	245.768	44.842	0.000	17.242	10.442	0.099

Population-Split Pashtun-Specific Model (Figure 7)

Term	*IDP Coeff*	*IDP Std.Error*	*IDP P-Value*	*Refugee Coeff*	*Refugee Std.Error*	*Refugee P-Value*
Pashtun 0-10	-0.024	0.348	0.944	0.139	0.081	0.088
P 10-20	-0.065	0.089	0.462	0.039	0.021	0.059
P 20-30	0.154	0.086	0.075	0.067	0.020	0.001
P 30-40	-0.256	0.084	0.002	0.050	0.019	0.001
P 40-50	-0.032	0.075	0.000	0.062	0.018	0.000
NP 0-10	0.318	0.289	0.272	-0.041	0.067	0.539
NP 10-20	1.483	0.253	0.000	-0.111	0.059	0.061
NP 20-30	0.378	0.278	0.174	-0.343	0.065	0.000
NP 30-40	1.431	0.373	0.000	-0.167	0.087	0.055
NP 40-50	2.033	0.612	0.001	-0.038	0.143	0.0793

Border Distance	0.167	0.186	0.368	0.362	0.043	0.000
Time to City	-0.227	0.059	0.000	-0.006	0.014	0.659
Nightlights	-10.192	4.621	0.027	3.428	1.077	0.001
Mountains	278.092	42.998	0.000	-41.113	10.025	0.000

Appendix 3: Robustness

Sampling Bias Results

Term	*Coefficient*	*Std. Error*	*P-Value*
Number of Conflicts	0.006	0.003	0.103
Conflict Fatalities	0.000	0.000	0.563
Distance to Border	-0.002	0.001	0.001
Nightlights	0.058	0.028	0.038
Time to City	0.000	0.000	0.322
Mountains	0.497	0.099	0.000

Ethnic-Regions Violence Breakdown

	Same-Region Casualties, 0-50km	*Different-Region Casualties, 0-50km*

Minimum	0.0	0.0
1st Quartile	11	0.0
Median	69	0.0
Mean	197	19.15
3rd Quartile	227	0.0
Maximum	1848	715.0
Standard Deviation	315.4	74.4

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