**Objective.** Why are some terrorist attacks so much more devastating than others? Despite the importance of this question, few studies examine the great variance in lethality across terrorist incidents. This article proposes that some cultures witness deadlier terrorism. In particular, it maintains that deadlier terrorism will occur in cultures of honor that socialize individuals to view violence as an acceptable means for upholding a reputation for toughness. Cultures of honor produce terrorists motivated by perceived slight and reputational challenges, which they are compelled to rectify through especially severe acts of violence. Reclaiming one’s honor is possible by inflicting maximum damage on the offending person or group. **Method.** This argument is empirically tested in a multilevel statistical analysis of domestic terrorism in the United States from 1970 to 2015. **Results.** Clear evidence emerges that terrorism is deadlier in the U.S. South—the quintessential culture of honor—than in the other regions of the United States. Other variables highlighted in the existing literature, however, receive mixed support. **Conclusion.** The evidence presented in this article indicates that cultural variables help explain variation in terrorist attack lethality. Future research on political violence, including terrorism, would benefit from taking culture into greater consideration.

Why are some terrorist attacks so much deadlier than others? While most terrorist attacks do not cause any fatalities, there is substantial variation in the human costs of lethal attacks. For instance, the deadliest domestic terrorist attack in the United States, the Oklahoma City bombing, claimed nearly three times as many lives as the second deadliest, the Pulse nightclub shooting. In an ideal world, all terrorist efforts would be thwarted before an attack is successfully launched. Since counterterrorism funds are finite, however, knowing what types of attacks are most lethal allows governments to more effectively allocate their resources to where they will have the greatest impact. Understanding what makes some terrorist attacks deadlier than others is therefore one of the most salient objectives of political violence research.

Yet, we know surprisingly little about what causes the remarkable variation in terrorist attack lethality. The strongest and most robust findings in this area attribute this variation to differences among terrorist organizations (Asal and Rethemeyer, 2008a, 2008b; Asal et al., 2015). Religious organizations, especially when also ethnonationalist, launch deadlier attacks, a fact that scholars partly attribute to performance of this violence for a supernatural audience (Asal and Rethemeyer, 2008b; Juergensmeyer, 2000). While understanding the lethality variance within and across terrorist organizations is certainly crucial, there is also reason to examine the deadliness of terrorist attacks rather than only terrorist organizations. For one, neither the Oklahoma City bombing nor the Pulse
nightclub shooting were perpetrated by organized terrorist groups. In fact, terrorist organizations are responsible for only one of the 10 deadliest domestic terrorist attacks committed in the United States. This follows recent research finding that lone-wolf terrorists are deadlier in states with high counterterrorism capacity, such as the United States (Phillips, 2017). Without turning to an analysis of terrorist attacks generally, rather than looking only at terrorist organizations, we risk leaving the causes of much deadly terrorism unexplained.

What influences the deadliness of terrorist attacks? This article advances a theory of terrorist attack severity rooted in cultural psychology. Cultures of honor, it argues, produce deadlier terrorist attacks than other cultural milieus. In honor cultures, affronts to one’s reputation for toughness are considered grounds for violent retaliation, since failure to uphold this reputation in the face of challenges makes one vulnerable to graver trespasses in the future. Individuals in these cultures are therefore socialized to believe that violence is a legitimate means of responding to perceived insult for reclaiming and upholding their reputations. This theory provides an explanation for the high homicide rate in the U.S. South (Nisbett and Cohen, 1996), and the greater willingness of southern U.S. presidents to engage in international aggression (Dafoe and Caughey, 2016). Building on this body of research, this article maintains that terrorists in cultures of honor are more likely to be motivated by a sense of slight and to more harshly retaliate against the perceived offender (individual or collective) to assert their toughness. For individuals or groups considering terrorism, reclaiming their honor by inflicting maximum suffering on their adversary is a strong and decisive affirmation of their reputation for toughness. The theory therefore anticipates that terrorist attacks in cultures of honor will surpass those in other regions in their lethality.

Statistical analysis of all domestic terrorist attacks in United States from 1970 to 2015 lends support to this argument by demonstrating that terrorist attacks in the South are deadliest. Since the U.S. South is considered the quintessential culture of honor, examining terrorist attack lethality within the United States is an important test of the theory that honor cultures lead to especially deadly terrorism; failure to find convincing evidence that southern terrorism is the deadliest in the United States would certainly invalidate the argument. While cultural variables consistently predict the deadliness of U.S. terrorism, several alternative explanations for terrorist attack lethality find mixed support as causes of lethal terrorism. Based on this analysis—and building upon other studies in the terrorism literature (e.g., Braun and Genkin, 2014)—these findings suggest that scholars of political violence should better explore how cultural factors contribute to generating divergent outcomes of interest.

The Lethality of Terrorist Attacks

Terrorist attacks vary greatly in the number of lives they claim, with the overwhelming majority resulting in zero deaths. However, a small number of terrorist incidents—including the 9/11 terrorist attacks, Oklahoma City bombing, and Beslan school hostage crisis—lead to an extremely high number of fatalities. In statistical terms, the distribution of terrorist attacks, like the distribution of violent conflicts, is “fat-tailed,” meaning that extreme events are observed with greater frequency than would be expected were the distribution approximately normally distributed (Bremmer and Keat, 2009; Cirillo and Taleb, 2016).

1According to the START Global Terrorism Database (GTD).
In accordance with this view, some scholars demonstrate that the lethality of terrorist attacks follows a power law distribution (Clauset, Shalizi, and Newman, 2009; Clauset and Wiegel, 2010). Because it is possible to witness terrorist attacks that deviate many standard deviations above the mean, there is an imperative to predict in advance which attacks stand to become the deadliest.

Despite its importance, few studies are dedicated to understanding variation in terrorist attack lethality. Several factors, however, are frequently implicated in especially deadly terrorist attacks. Group ideology consistently appears as an explanation for deadly terrorism. Early terrorism research conjectures that “new” terrorist groups are ideologically insensitive to human loss (Hoffman, 1998; Laqueur, 1999). More recent studies make progress in unpacking the ways that different ideologies are linked to variation in the lethality of terrorism. For instance, Asal and Rethemeyer (2008a, 2008b) use a more nuanced typology of terrorist ideology and find that variation along these ideological dimensions predicts organizational lethality. Religiously inspired groups, especially when also ethnonationalist in motivation, perpetrate deadlier attacks on average, whereas groups adhering to an environmentalist ideology rarely kill in their attacks. These findings echo earlier studies positing that religious terrorists are more violent (Enders and Sandler, 2000; Juergensmeyer, 2000), and other works uncovering a connection between nationalism and extreme forms of terrorism such as suicide attacks (Pape, 2003, 2005). Piazza (2009) finds that certain strands of Islamist terrorism, those with abstract goals rather than separatists who strategically pronounce adherence to Islamism, are deadlier than others. Religiously inspired terrorists also tend to perpetrate the deadliest suicide attacks (Henne, 2012).

Other factors that influence which groups are most violent include organizational size and number of alliances with other terrorist groups (Asal and Rethemeyer, 2008b), the latter of which corresponds with case research documenting that social network connections facilitate devastating terrorist attacks (Sageman, 2004). Rather than number of alliances, however, there is evidence suggesting that a terrorist group’s position within the terrorist group network has a greater impact on its lethality (Horowitz and Potter, 2014). Another study argues that organizational size is unrelated to the severity of terrorist attacks, and that large organizations perpetrate deadlier attacks because they launch terrorist attacks more frequently (Clauset and Gleditsch, 2012). Changing organizational factors, including the level of technical expertise within a group, can influence the varying lethality of terrorism within a single organization over time (Asal et al., 2015). Some argue that interorganizational variables create deadlier terrorism. According to outbidding theorists, competition among terrorist organizations drives them to become more violent as they compete over limited public support (Bloom, 2004; Nemeth, 2014; but see Findley and Young, 2012b).

One limitation is that these analyses almost exclusively examine variation in the severity of terrorist attacks across organized terrorist groups. Understanding which terrorist groups are deadliest is certainly important. Yet, many deadly terrorist attacks are not committed by formal terrorist groups. According to data from the START GTD, only one of the 10 deadliest domestic terrorist attacks in the United States is attributable to a distinct organization. Recent research suggests this is because lone-wolf terrorists are deadlier in states with high counterterrorism capacity (Phillips, 2017), although one study finds that some types of terrorist attacks (namely, suicide bombings) are deadlier when connected to organizations (Alakoc, 2017). Other attacks, such as the Oklahoma City bombing and the Pulse nightclub shooting, are executed either by loosely knit terrorist cells or lone individuals. Given that a group-level focus neglects many relevant terrorist attacks, there is reason to shift to an alternative level of analysis, such as the individual terrorist attack.
An additional concern is that the current literature overlooks factors beyond ideology and social ties that could contribute to terrorist violence. Cultural and psychological factors especially are neglected, despite a growing awareness that they influence the development of terrorism and extremism (Gelfand et al., 2013; Braun and Genkin, 2014; Kluch and Vaux, 2017; Horgan, 2017). This study seeks to overcome both of these limitations in the existing literature on terrorist attack lethality.

**Honor and the Lethality of Terrorist Attacks**

Drawing from a large and growing body of scholarship in cultural psychology and criminology (Nisbett and Cohen, 1996; see Brown and Osterman, 2012, for a review), this article maintains that cultures of honor are conducive of devastating terrorist attacks. Cultures of honor are most likely to develop under two conditions: where (1) resources are easily stolen, and (2) there is relative lawlessness due to limited state penetration. When these conditions prevail, individuals (particularly men) are faced with an incentive to cultivate a reputation for toughness to ward off realistic and persistent threats that opportunists will misappropriate their resources. The inability to appeal to the state for protection means that individuals must communicate a willingness to engage in risky confrontation against potential aggressors. It follows that in such contexts individuals are primed to respond with violence toward insults, since allowing oneself to be disrespected signals a lack of resolve to safeguard one's resources. Cultivating a reputation for toughness, by responding quickly and decisively to affronts to one's honor, thus helps to ward off challengers who would otherwise take advantage of limited state oversight in an environment where resources are easily taken. Over time, through socialization processes, the aggressive behaviors and perceptions associated with honor cultures become internalized in new generations long after the original incentive for their development has passed (Vandello, Cohen, and Ransom, 2008). In other words, cultures of honor, like other cultures, persist and shape their subjects' behavior even when the utility for such behavior becomes questionable (see Zucker, 1977). In cultures of honor, individuals are socialized to become sensitive to potential slights and to reflexively respond with aggression to rectify the perceived offense.

Evidence from several fields corroborates the theoretical expectation that cultures of honor experience high levels of violence. Early research demonstrates substantial variation in homicide rates in the United States, with the highest rates in those states with the strongest honor culture (Gastil, 1971; Nisbett and Cohen, 1996). And, in accordance with the theory, these differences are attributable only to homicides deriving from response to insult (i.e., to affronts to one's honor) (Nisbett, 1993). Honor cultures facilitate domestic violence, including honor killings, through socializing men to view violence as an acceptable response to perceived reputational loss from female relatives (Sev’er and Yurdakul, 2001; Vandello and Cohen, 2003). Culture of honor variables also predict school shootings (Brown, Osterman, and Barnes, 2009), and even influence the individual propensity for self-harm and suicide (Osterman and Brown, 2011).

Some related studies touch upon the relationship between cultures of honor and terrorism. For instance, one author maintains that honor culture influences the decision of some Palestinian women to become suicide bombers (Alvanou, 2007). Since suicide bombing tends to produce more casualties than conventional terrorist attacks (Pape, 2005; Moghadam, 2009), this is one indirect means by which honor cultures may lead to deadly terrorism. One unpublished manuscript even finds that the proportion of terrorist attacks committed in the U.S. South is greater than would be expected by chance alone (see
Brown and Osterman, 2012). Another recent study confirms that societal levels of illegitimate violence predict terrorism (Mullins and Young, 2012), which suggests a link between honor cultures and terrorism given the well-established link between honor cultures and the legitimation of homicide. Evidence that some forms of Islamism produce deadlier terrorism could overlap with cultural explanations for violence (Piazza, 2009). Some scholars find that honor killings are predominately an Islamic phenomenon, and argue that radical Islamism may contribute to its occurrence and global diffusion (Chisler, 2010). Yet, culture as conceptualized in the culture of honor literature is largely distinct from universal religions, such as Islam and Christianity, in that they arise in and are restricted to unique, territorially bounded locations. Some research further maintains that phenomena such as honor killings predate Islam in the regions where it occurs (Sev’er and Yurdakul, 2001), perhaps suggesting older cultural roots. Despite overlap with several existing strands of research, no existing study explicitly posits a link between cultures of honor and the severity of terrorist attacks.

Rather than simply influencing the number of terrorist attacks experienced, there is significant cause to believe that honor cultures produce deadlier terrorist attacks. Cultures of honor are not unique in attaching value to honor, which is prized across cultural contexts. They are instead differentiated from non-honor cultures in socializing individuals into responding violently to slights against their reputation for toughness (Nisbett and Cohen, 1996; Shackelford, 2005). Individuals from cultures of honor are more likely to perceive insult and aggressive intention, a defensive disposition carried over from when conditions of lawlessness prevailed (Vandello, Cohen, and Ransom, 2008). Since failure to respond to insult could lead to greater infringements in the future, individuals in honor cultures are socialized to become sensitive toward potential disrespect. Responding decisively to these perceived affronts signals resolve to engage in violence to uphold one’s reputation. The line of reasoning in this article is therefore as follows: prospective terrorists socialized into a culture of honor are more likely to perceive insult than violent actors from other milieus; these terrorists are thus likely galvanized into action to maintain their reputations for toughness, a reputation that is especially important for violent actors; lastly, since they are socialized into viewing violence as necessary to reclaim their reputations, these terrorists will react toward their perceived offender with exceptionally violent attacks, for greater amounts of violence better affirm the resolve and toughness of the perpetrator.

Unlike homicide, the form of violence most frequently attributed to cultures of honor, terrorism is not typically directed toward individuals who directly insult their aggressor (Hoffman, 2006; Sandler, 2014; Mahoney, 2017). Instead, terrorism is perpetrated against governments or collectivities composed of people whose individual identities are unknown to the terrorist. While terrorism is occasionally undertaken in response to a threat against an individual’s sense of honor, it is perhaps more commonly conducted in response to slights against a collective honor. Individuals often perceive insult against a collectivity with which they identify. For instance, students from the U.S. South respond more aggressively than other students toward affronts to national honor, not only toward their individual honor (Barnes, Brown, and Osterman, 2012). Terrorists can therefore respond aggressively against insult toward a number of identities. Nationalist terrorism, for instance, is sometimes considered a response to infringement on the rights of a national identity (Pape, 2005; Sanchez-Cuenca, 2007). Moreover, terrorists can retaliate against individuals who are not

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2For instance, Islam and its tenets can spread globally to new populations while a “Palestinian culture” would not (although large-scale population movement could extend, contract, or displace cultural boundaries).
their principal aggressors. When experiencing loss or insult from the state, terrorists may ascribe malicious intent to all state actors, or to the state’s perceived allies, and treat them as acceptable targets for retaliation.

Similarly, while culture of honor theory explains why individuals socialized into honor cultures are likelier to respond to insult with disproportionate violence, we should expect a similar relationship at the terrorist group or movement level. Groups or movements whose members are primarily from honor cultures should carry out deadlier violence, since their members have internalized the same culture. Loosely organized groups, such as broad revolutionary or nationalist movements, do not target indiscriminately; rather, they carefully select enemy targets or those perceived as complicit with their enemies (Goodwin, 2006). Such terrorist movements are likely to respond violently toward a sense of collective insult since, in addition to undermining the group’s reputation for toughness, this may be construed as complicity with the enemy. A long literature on interstate and intrastate conflict further finds that states, which are above the individual level of analysis, engage in reputation building and that a reputation for toughness can deter potential opponents (Schelling, 1960; Walter, 2006; Crescenzi, 2007). Not only does this research support the hypothesis, since it indicates that building tough reputations indeed has deterrent power, but it also suggests that reputations matter for formally organized groups.3 Research on honor and interstate war similarly finds support at the individual and state levels (Dolan, 2015; Dafoe and Caughey 2016). In short, there is good theoretical and empirical reason to believe that cultures of honor affect patterns in violent behavior in groups, movements, and the individuals that comprise them.

Examples from the existing terrorism literature are illuminating. In Chechnya, people whose relatives are killed often exact blood revenge on members of the countries responsible for the death, even though the actual individual responsible for their loss is unknown (Souleimanov and Aliyev, 2015). Interviews with the surviving family members of the Black Widows, the name given to female Chechen suicide bombers, reveal that revenge for the death of male relatives is a consistent motivation for the violence (Speckhard and Ahkmedova, 2006). Individual loss and injury is thus one motivating factor in turning to terrorism, especially in cultures where revenge is considered acceptable or a moral obligation, and this terrorism is often directed toward political actors deemed responsible when the individual perpetrator is unknown. Additionally, some argue that suicide bombing is generally used when nationally motivated organizations perceive that their national homeland is occupied (Pape, 2003, 2005). Deadly terrorism, in other words, can appear viable when a collective identity is threatened and is often launched against collectivities associated with the threat.

An example from the U.S. South, the most commonly examined honor culture, illustrates how cultures of honor influence group-level terrorism. One of the deadliest domestic terrorist attacks in the United States until recently was the 1979 Greensboro massacre, in which members of the Ku Klux Klan (KKK) and the American Nazi Party (ANP) murdered five civilians and injured at least 12 others. The location of the attack was the Communist Worker Party’s (CWP) “Death to the Klan” rally, an event where Klan members planned to counterprotest and assault participants. Leading up to the event, the CWP targeted the white supremacists in a series of humiliating assaults; while the CWP came armed with clubs to deliver another thrashing, the KKK and ANP arrived as a fully armed paramilitary force (Belew, 2018:Ch. 3). It appears that the terrorists escalated beyond expectation

3Other studies show that leader and individual reputation also matters in international politics (Wolford, 2007; Tingley and Walter, 2011).
to avoid further humiliation and affirm their reputation for toughness. Statements the terrorists made leading up to event indeed reveal that they were motivated by a sense of indignation and slight. At a house gathering prior to the attack, one perpetrator recalls conversation about responding with deadly violence if confronted by Communists and stated that “I would kill someone if they gave me trouble” (Greensboro and Truth and Reconciliation Commission [TRC] Report, 2006:174). The perpetrators, in other words, were predisposed to perceiving offense and communicated a willingness to respond with unrestrained violence. Perceived offense and the chance to demonstrate toughness appeared to play a role in galvanizing the terrorists into violence.

In short, terrorists from honor cultures are especially likely to perceive insult against themselves or their in-groups and to respond violently against these affronts by targeting out-groups associated with the perceived offender. Since the violent response toward insults arises from a need to reclaim a reputation for toughness, terrorists from honor cultures are more likely to attempt unrestrained attacks to reaffirm their reputations as decisively as possible. And, while committing to extreme attacks is potentially very costly, individuals from honor cultures evince a stronger willingness to take risky and potentially deadly actions (Barnes, Brown, and Tamborski, 2012). Based on this reasoning, the following testable hypothesis is derived:

**Hypothesis:** Cultures of honor produce deadlier terrorist attacks.

**Research Design and Data**

**Case Study: Terrorism in the U.S. South**

Empirically testing this hypothesis requires comparing the severity of terrorism occurring within honor cultures to terrorism committed in otherwise similar non-honor cultures. This article therefore opts to compare the intensity of terrorism within the U.S. South to the other regions of the country. As is apparent from the previous discussion, the U.S. South is considered the quintessential example of an honor culture (Nisbett, 1993; Nisbett and Cohen, 1996; Brown and Osterman, 2012). Originally, this culture developed through the settlement of Scots-Irish herdsmen in the U.S. South, where high risks of appropriation and little formal institutional structure aided the development of an honor culture (Grosjean, 2014). When compared with farming, herding puts people at risk of having the resources upon which their livelihoods are based stolen. Coupled with the frontier nature of the South, which persisted into the 19th century, this led southerners to develop rules and codes of retaliation against slight to protect themselves. Children in the U.S. South are still socialized from a young age to behave aggressively in prescribed circumstances (Nisbett and Cohen, 1996).

In line with expectations derived from the theory, the U.S. South produces more homicides than other regions (Gastil, 1971; Nisbett and Cohen, 1996), presidents who are more likely to initiate interstate disputes (Dafoe and Caughey, 2016), and individuals who perceive greater aggression in their peers (Vandello, Cohen, and Ransom, 2008). Moreover, this regional variation cannot be attributed to other variables such as racial diversity or economic inequality (Gastil, 1971). It is undeniable that the South’s history of racially motivated political violence influences even contemporary southern terrorism. Yet, an internalized honor culture frequently shapes even racist violence in the South. Reconstruction-era lynching, for example, was most often justified due to alleged rapes of white women, which to southern racists constituted an “insult to white womanhood that
could not be tolerated by men of honor” (Wyatt-Brown, 2001:291–92). Survey research demonstrates that southern respondents are more supportive of violence than their counterparts elsewhere in the United States. Southern support for violence is indistinguishable from support elsewhere in scenarios where support for violence is generally high; however, southerners are more likely to support violence where general support is low to moderate (Hayes and Lee, 2005). Using the U.S. South as a case allows this study to determine whether cultural variables predict not only societal violence, but also political violence such as terrorism.

Given its status as the model culture of honor, most research from this tradition tests its hypotheses in the U.S. South. If this argument has any validity, then it must be demonstrated that terrorism in the United States is deadliest in the South. Failure to strongly establish this relationship would surely undermine the relevance of the cultural of honor theory to terrorism. Examining terrorism among regions within a single country also creates more comparable case comparisons than a cross-national analysis would allow, especially considering the lack of data on subnational cultural attributes worldwide. One concern is that the results are potentially not generalizable to other honor cultures, since confirmation that southern terrorism is deadlier does not necessarily entail that all honor cultures produce deadlier terrorism.

Yet, there is strong reason to believe that honor cultures are important to understanding global patterns in political violence. Cultures of honor are indeed present across the globe (Basanez, 2016). Regional cultural variation, both across and within states, could therefore explain differences in the destructiveness of terrorism outside the United States. Revenge has long been observed as a contributor to terrorism and political violence (Crenshaw, 1981), especially in cultures like Chechnya where blood revenge is institutionalized and considered a duty (Speckhard and Ahkmedova, 2006; Souleimanov and Aliyev, 2015). Cultures of honor, which legitimize revenge when a perceived aggressor trespasses against one’s sense of honor, should therefore contribute to terrorist violence outside the United States. Future research might examine patterns of political violence in other cultural contexts.

Data

Data for testing the hypothesis are gathered from the START GTD, which contains information on over 2,000 terrorist attacks in the United States from 1970 to 2015. Since these data and their limitations are discussed at length elsewhere (LaFree, Dugan, and Miller, 2014), they are not reiterated in this article. Following Tilly, terrorism is defined as “asymmetrical deployment of threats and violence against enemies using means that fall outside the forms of political struggle routinely operating within some current regime” (2004:5). The GTD data are appropriate because they include all such attacks, not restricting merely to those against civilians, and avoid the conceptual ambiguity around the term “terrorist” that Tilly notes.

For this study, the unit of analysis is a terrorist attack. While most studies on the lethality of terrorism use terrorist organizations as their unit of analysis, this study focuses on individual attacks due to the large number of attacks perpetrated by individuals and small, unorganized groups. Deadly attacks by terrorists such as Timothy McVeigh, Omar Mateen, and Dylann Roof are left unexplained when choosing to examine only organizational terrorism. Since domestic and transnational terrorism are analytically distinct, and have different underlying causes and causal processes, transnational attacks are removed from
the data (Sanchez-Cuenca and de la Calle, 2009; Young and Findley, 2011). While this eliminates several high-profile terrorist attacks from the analysis, the vast majority of terrorist incidents worldwide are domestic; this study aims to contribute to the growing number of studies explaining this form of subnational political violence (Sanchez-Cuenca and de la Calle, 2009; Stanton, 2013).

The dependent variable, taken from GTD, is the number of fatalities an attack causes. The primary independent variables are binary indicators of whether a terrorist attack occurred in the Northeast, Midwest, or West, with South serving as the reference category. Region designations are taken from the U.S. Census Bureau. If the theory posited here is supported, then the three region variables should have negative coefficient estimates (i.e., have less fatal attacks than the South on average). This imposes a stricter test than simply using a binary indicator for South, which could return a positive coefficient even if southern attacks are not deadlier than attacks from all three other U.S. regions.

Several attack-level control variables that could influence fatalities are included. Previous research finding that suicide attacks are deadlier than conventional terrorism suggests variation in attack type is relevant to understanding which attacks become deadliest (Pape, 2005; Alakoc, 2017). Therefore, two binary variables for bombing and armed assault are created from existing GTD variables (other attacks serve as the reference category); attacks are coded 1 if they were identified as either bombings or armed assaults and 0 otherwise. Moreover, attack severity could potentially vary with target type. Thus, the GTD is used to create two similarly coded binary measures for civilian and government target, with other targets serving as the reference category. As outlined previously, the existing literature consistently identifies ideology as a cause of especially deadly terrorism. Recently, START (2017) has released data denoting the ideological motivation of each terrorist attack in the United States. This article takes advantage of these new data to include the GTD’s dummy variables for whether an attack is Islamist or right wing (1 if identified as yes, 0 otherwise) in motivation. Based on previous studies, it is expected that Islamist terrorists launch deadlier attacks (Piazza, 2009). Another possibility is that southern attacks are more violent solely because they are disproportionately motivated by certain ideologies, particularly right-wing or racist ideologies. Indeed, right-wing terrorism in the United States has resulted in more deaths than any other type of domestic terrorism (Piazza, 2017). Controlling for right-wing ideology is necessary to convincingly demonstrate that distinct cultural factors, rather than the regional density of terrorists with especially violent ideologies, contribute to the

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4In the GTD data, these are attacks where the nationality of the perpetrator differs from the country where the attack takes place.
5The analysis is restricted to the continental United States. Results are robust to including the few attacks in Alaska and Hawaii. Washington, DC, is dropped from the South, since it is targeted for political reasons unrelated to southern culture.
6No control for suicide attacks is included since the data contain only five; including a control for suicide attack does not alter the results.
7The GTD codebook lists the various other attack and target types included in the data.
8Other ideologies include environmentalism, leftist, nationalist-separatism, and non-Islamist religious. In the United States, 70 attacks are coded as “religious Islamic” and six as “Sunni Islamic.” These are combined into a single “Islamist” variable, although the result holds when restricting to “religious Islamic” attacks. Environmentalist and leftist terrorism are among the least deadly variants (Asal and Rethemeyer, 2008b). An aggregate religious variable, which includes Islamist and non-Islamist religious terrorism, never reaches statistical significance, suggesting that other religious motivations are unrelated to terrorism lethality in the United States.
9Piazza (2009) finds that only “universalist” Islamist attacks are deadlier. In the United States, Islamist attacks are universalist since there is no Islamic separatist movement.
10Right-wing terrorism in the GTD ideology measures aggregates racist and right-wing anti-government terrorism, without indicators that would allow controlling for them separately.
deadliness of terrorist attacks. Some research finds that unclaimed or unknown terrorist attacks are deadlier because terrorists are reticent to claim attacks that are unpopular and cause public opinion to turn against them (Kearns, Conlon, and Young, 2014). Another binary variable taken from the GTD indicates whether an attack was claimed. The GTD is also used to construct a binary variable for whether the attack was committed by an organized group; attacks whose perpetrators are unknown, unaffiliated, or unorganized are coded 0. Since organizational features are often related to the severity of terrorism (Asal and Rethemeyer, 2008b; Asal et al., 2015), it is possible that terrorists with any level of organization are deadlier than those without.

The full models presented below incorporate state-level covariates that are potential causes of deadly terrorism. Two state-year level measures for population and per capita income are taken from the U.S. Census Bureau; both variables are transformed by taking their natural log to render them on scales similar to the other covariates. This follows standard practice in the conflict literature, where population and GDP per capita are included as necessary variables in cross-national analyses. The availability of subnational data in the United States makes controlling for these variables relatively straightforward even in a single-country analysis. Additionally, variables for the nonwhite proportion of the state population, the unemployment level, and murder rate come from the Correlates of State Policy data set (Jordan and Grossman, 2017). If other factors, such as racial resentment or relative deprivation, are driving severe terrorism in the U.S. South, then it would undermine cultural psychological explanations for the violence. These state-level variables are measured annually, meaning that they represent the value each variable takes for the year in which the terrorist attack takes place. Lastly, a state-year measure of the homicide rate taken from the Correlates of State Policy (Jordan and Grossman, 2017) is used to ensure that general levels of violence are not confounding the results.

As discussed next, the first models are estimated using a pooled negative binomial (NB) regression. However, the data are nested in various levels: terrorist attacks in state-years, and state-years in states. Failure to recognize this multilevel structure of the data stands to violate the independent errors assumption, since it is likely that the error terms for attacks clustered within the same state-years and states are correlated due to unobserved factors at each level. In other words, terrorist attacks within the same state-year and state contexts share common features that remain unmodeled. Without accounting for this multilevel structure of the data statistically, there is an increased risk of generating erroneously deflated standard errors and thereby increasing the likelihood of Type I errors (Steenbergen and Jones, 2002). A simple multilevel model is therefore fit using NB regression, given that the dependent variable is an event count. This strategy incorporates separate error terms for the state-year and state levels to allow the level of the dependent variable to vary within these units, thereby accounting for conditions in particular state-years and states that remain outside the model. Mathematically, for terrorist attack \(i\), the following model is estimated:

\[
\text{Terrorist Attacks}_{it} = \alpha_0 + \beta A_{it} + \gamma S_{it} + \xi_{it} + \zeta_i + u_{it},
\]

Piazza (2017), however, finds that a regional variable for the South does not predict counts of right-wing terrorism.

Some missing values for the control variables are currently coded 0 for the analysis (e.g., it is assumed that an attack coded missing on claimed is an unclaimed attack) to avoid dropping observations. Results are robust to instead using multiple imputation for missing values.

Some examples: attacks by the Weathermen, Black Panthers, and KKK are coded 1 on the organized variable, whereas those by “leftists,” “black radicals,” and “white extremists” are coded 0. Linear interpolation is used to fill in missing values for the first two variables, since there are many temporal gaps in these data.
where $\beta$ is a vector of coefficients representing the effects of the attack-level covariates, $A_i$, $\gamma$ are coefficients for the time-varying state-year-level covariates, $S_{it}$, and $\xi_{st}$ and $\zeta_s$ are separate intercepts drawn from a probability distribution for the state-year and state, respectively. Each random intercept is assumed normally distributed with mean 0 and constant variance (i.e., $\xi_{st} \sim N(\xi, \sigma^2)$ and $\zeta_s \sim N(\zeta, \sigma^2)$). These effects capture the combined unobserved or omitted state-year and state-level factors.

**Empirical Analysis**

As a preliminary exercise, it is helpful to visualize geographical patterns of political violence (see Findley and Young, 2012a). Figure 1 presents a map of the domestic terrorist attacks carried out in the United States, divided by region, from 1970 to 2015. These data are again gathered from the GTD, which contains geographic coordinates for each terrorist incident. Each red circle represents one terrorist attack, and its size is proportional to the number of individuals killed in the attack. The one exception is the Oklahoma City bombing, which if scaled proportionally to its 168 fatalities would span multiple regions; instead, it is scaled to 17 fatalities, which is one fatality more than the second deadliest attack included in the data. A cursory glance at this map suggests that terrorist attacks in the South are indeed deadlier than those elsewhere. Large- and medium-sized attacks appear more common in the South than in the other three regions.

Turning to multivariate statistical analysis, results from NB and zero-inflated negative binomial (ZINB) regression models are presented. This strategy is appropriate since the dependent variable is a count of fatalities with overdispersion and a high proportion of zeros. Since the variance of the dependent variable, fatalities per attack, is over 50 times its mean, NB regression is advisable as it directly addresses overdispersion; when overdispersion results from a high proportion of zeros—as it does here, with over 90 percent of terrorist attacks in
the data resulting in zero fatalities—zero-inflated models are advised (Hilbe, 2011:Ch. 8). Robust standard errors are clustered on the state to account for lack of independence among terrorist attacks committed within the same state. Following recommendations to visually present results for interpretability, Figures 2 and 3 graphically convey the results from four preliminary models (Kastellec and Leoni, 2007). Each circle is a coefficient estimate and each confidence interval that does not cross the vertical line at zero is statistically significant at the 5 percent error level. Model 1, in Figure 2, regresses number of fatalities on the regional variables *West*, *Midwest*, and *Northeast* using NB regression. As expected all three coefficients are negative, indicating that attacks in these three regions are less fatal than those in the South. These relationships hold in Model 2, which includes the attack-level control variables.

Figure 3 replicates these two models using ZINB regression. ZINB is recommended when there is theoretical reason to suspect that zero values are generated through two processes: one where zero observations could have resulted in higher values and absolute zeros that due to their nature will not experience fatalities. Although few types of terrorist attacks will inherently never result in fatalities, existing research finds that environmentalist attacks do not kill because their perpetrators take specific precautions to avoid casualties (Asal and Rethemeyer, 2008a). It is therefore reasonable to suspect that environmentalist ideology predicts which terrorist attacks are absolute zeros, since they are unlikely to ever result in fatalities. GTD’s binary *environmentalist* variable is therefore included in the logistic part of the ZINB model (not shown). This part of the model also includes a binary variable for *unarmed* attacks, taken from the GTD, since terrorist attacks where the perpetrator lacks any weapon are unlikely to cause fatalities. As the two models in Figure 3 demonstrate, the coefficient estimates from the ZINB regression for the three region variables are very similar to those from the NB results; terrorist attacks in the South are still deadlier than
FIGURE 3
Results from Zero-Inflated Negative Binomial Regression Analysis

Those in the three other regions. All 12 coefficient estimates for the three region variables are statistically significant at the 1 percent error level. There is therefore strong support for the argument that terrorism is deadlier in the South than elsewhere in the United States.

Some alternative explanations for the severity of terrorist attacks receive support. Strongest is the connection between ideology and lethality: following previous studies, Islamist and right-wing attacks are significantly more deadly than attacks motivated by other ideologies. These results are consistent with studies finding that these ideologies are deadliest (Piazza, 2009), and also with the research observing that leftist and environmentalist terrorism are less deadly (Asal and Rethemeyer, 2008a, 2008b). There is, however, no support for the argument that claimed attacks are less deadly than unclaimed ones. Government- and civilian-targeted attacks both result in higher numbers of fatalities than those against other targets in the NB model, although this relationship only obtains for government targets in the ZINB model. Similarly, in Model 4, bombings and attacks by organized groups are negatively associated with lethality, consistent with research finding that lone wolves are deadlier in the United States (Phillips, 2017).

Additional Tests

Several changes in model specification, estimator, and data selection are made to ensure the sensitivity of these results. These are presented in Table 1. Since the coefficient estimates for the region variables from both ZINB and NB regression models are indistinguishable, the latter estimator is used for the remaining models.\textsuperscript{15} Here, the analysis also moves to the

\textsuperscript{15}Vuong tests also indicate that there is no statistically significant advantage to using ZINB over NB regression.
<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>West</td>
<td>-0.993***</td>
<td>-0.927***</td>
<td>-0.856***</td>
<td>-0.788***</td>
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<tr>
<td></td>
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<td>(0.310)</td>
<td>(0.261)</td>
<td>(0.302)</td>
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<td>Midwest</td>
<td>-0.911***</td>
<td>-0.859***</td>
<td>-0.722***</td>
<td>-0.920***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.312)</td>
<td>(0.333)</td>
<td>(0.280)</td>
<td>(0.331)</td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>-0.816***</td>
<td>-0.721***</td>
<td>-0.730***</td>
<td>-0.805**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.318)</td>
<td>(0.351)</td>
<td>(0.284)</td>
<td>(0.336)</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td></td>
<td></td>
<td></td>
<td>0.916***</td>
<td>(0.234)</td>
</tr>
<tr>
<td>Attack level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gov't target</td>
<td>1.099***</td>
<td>1.081***</td>
<td>1.094***</td>
<td>0.920***</td>
<td>1.225***</td>
</tr>
<tr>
<td></td>
<td>(0.212)</td>
<td>(0.214)</td>
<td>(0.212)</td>
<td>(0.204)</td>
<td>(0.229)</td>
</tr>
<tr>
<td>Civilian target</td>
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<td>0.879***</td>
<td>0.874***</td>
<td>0.856***</td>
<td>1.060***</td>
</tr>
<tr>
<td></td>
<td>(0.216)</td>
<td>(0.218)</td>
<td>(0.216)</td>
<td>(0.203)</td>
<td>(0.239)</td>
</tr>
<tr>
<td>Armed</td>
<td>1.651***</td>
<td>1.602***</td>
<td>1.658***</td>
<td>1.642***</td>
<td>1.883***</td>
</tr>
<tr>
<td></td>
<td>(0.197)</td>
<td>(0.201)</td>
<td>(0.197)</td>
<td>(0.184)</td>
<td>(0.206)</td>
</tr>
<tr>
<td>Bombing</td>
<td>-0.947***</td>
<td>-0.960***</td>
<td>-0.945***</td>
<td>-1.089***</td>
<td>-0.816***</td>
</tr>
<tr>
<td></td>
<td>(0.225)</td>
<td>(0.226)</td>
<td>(0.225)</td>
<td>(0.227)</td>
<td>(0.251)</td>
</tr>
<tr>
<td>Claimed</td>
<td>-0.525*</td>
<td>-0.581**</td>
<td>-0.529*</td>
<td>-0.566**</td>
<td>-0.641**</td>
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<tr>
<td></td>
<td>(0.285)</td>
<td>(0.295)</td>
<td>(0.293)</td>
<td>(0.270)</td>
<td>(0.289)</td>
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<td>Organized</td>
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<td>-0.118</td>
<td>-0.160</td>
<td>-0.0944</td>
<td>-0.172</td>
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<tr>
<td></td>
<td>(0.202)</td>
<td>(0.206)</td>
<td>(0.203)</td>
<td>(0.190)</td>
<td>(0.205)</td>
</tr>
<tr>
<td>Islamist</td>
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<td>1.014***</td>
<td>1.065***</td>
<td>1.060***</td>
<td>0.897**</td>
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<tr>
<td></td>
<td>(0.349)</td>
<td>(0.351)</td>
<td>(0.347)</td>
<td>(0.316)</td>
<td>(0.359)</td>
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<tr>
<td>Right wing</td>
<td>0.504**</td>
<td>0.447*</td>
<td>0.509**</td>
<td>0.308</td>
<td>0.422*</td>
</tr>
<tr>
<td></td>
<td>(0.224)</td>
<td>(0.230)</td>
<td>(0.226)</td>
<td>(0.213)</td>
<td>(0.231)</td>
</tr>
<tr>
<td>State level</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population (ln)</td>
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<td>0.110</td>
<td>0.115</td>
<td>0.0969</td>
<td>-0.0124</td>
</tr>
<tr>
<td></td>
<td>(0.109)</td>
<td>(0.117)</td>
<td>(0.108)</td>
<td>(0.0982)</td>
<td>(0.114)</td>
</tr>
<tr>
<td>Income (ln)</td>
<td>0.511</td>
<td>0.0707</td>
<td>0.506</td>
<td>0.651</td>
<td>0.837*</td>
</tr>
<tr>
<td></td>
<td>(0.466)</td>
<td>(0.714)</td>
<td>(0.739)</td>
<td>(0.419)</td>
<td>(0.479)</td>
</tr>
<tr>
<td>Percentage of nonwhite</td>
<td>-0.908</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.418)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>-0.0476</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0434)</td>
<td></td>
<td></td>
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<tr>
<td>Murder rate</td>
<td>0.00526</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0165)</td>
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<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-9.665*</td>
<td>-4.716</td>
<td>-10.96</td>
<td>-10.65**</td>
<td>-11.11**</td>
</tr>
<tr>
<td></td>
<td>(4.954)</td>
<td>(7.126)</td>
<td>(21.30)</td>
<td>(4.841)</td>
<td>(5.174)</td>
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<td>Observations</td>
<td>2,058</td>
<td>2,058</td>
<td>2,058</td>
<td>2,057</td>
<td>1,676</td>
</tr>
</tbody>
</table>

Standard errors in parentheses; ***p < 0.01; **p < 0.05; *p < 0.1.

The multilevel model estimation strategy described above. First, Models 5 and 6 add state-level covariates to the analysis. The remaining models drop in the number of observations due to missing 2015 data on the two primary state-level covariates. In other words, the timeframe is now 1970 to 2014. Interpolating the missing data for this year does not alter the results.
be spurious if states in this region have higher racial or economic resentment, which could instead cause deadly terrorism. Similarly, it is possible that deadlier terrorism is an artifact of high general levels of violence. Third, in Model 7, the three region dummy variables are replaced with a binary variable for South. Fourth, in Model 8, the Oklahoma City bombing—by far the deadliest domestic terrorist attack in the United States—is dropped from the analysis to ensure this extreme outlier does not influence the results. And, fifth, Model 9 is estimated after removing attacks where the perpetrator of the terrorist attack is unknown. One concern is that the GTD incorporates numerous observations with limited or inaccurate information and whose perpetrators are unknown; it is possible that these observations are essentially noise. Removing those attacks—usually ones with zero fatalities—where no information on the assailant exists is one way to mitigate this problem.

Domestic terrorist attacks are consistently less deadly in the three non-South regions than in the South (and in Model 8 southern terrorist attacks are deadlier). Across model specification, the coefficients for these region variables are negative and statistically significant. The attack type and attack target variables are consistently statistically significant across models. However, there is inconsistent support for other factors that receive attention in the existing literature. In three of the five models, the coefficient on right-wing ideology does not reach conventional levels of statistical significance. These inconclusive results with regard to ideology suggest that ideological motivations are potentially less relevant to understanding the lethality of terrorist attacks rather than the lethality of terrorist organizations. However, in line with previous research, Islamist attacks are consistently deadlier than non-Islamist ones. There is some support for previous findings that unclaimed terrorist attacks are deadlier than claimed ones, although in two models this coefficient drops below conventional levels of statistical significance. Lastly, the null results for income and unemployment add to the research failing to uncover a relationship between economic factors and terrorism (Piazza, 2006, 2017). Economic variables, it appears, also fail to account for the lethality of terrorist attacks.

One additional concern is that the results are an artifact of the way the primary independent variables are coded. U.S. regions are subjective, and the Census Bureau boundaries do not perfectly map onto the “South” as a cultural unit. Several additional tests, which are placed in the Supplementary Appendix for space considerations, examine the sensitivity of the results to alternative operationalizations of the U.S. regions. Models A1 and A2 recode the South to include only the “Deep South.” Model A3 further excludes Texas, since it straddles other cultural regions. Model A4 distinguishes between the coastal or Pacific West and the interior or Mountain West. In each case, all the regions remain negative and statistically significant with one exception: there is no statistical difference between the South and the Mountain West. Since this region developed under similar conditions to the South (i.e., limited state penetration and easily stolen resources), the original culture of honor hypothesis was originally argued to hold in the Mountain West and previous research indicates similar trends with regard to violence in this region (Nisbett, 1993; Cohen and Nisbett, 1997). It is thus clear from these analyses that the relationship between cultures of honor and terrorism fatalities remains robust to alternative regional measurements.

Substantive Effects

Are these results substantively meaningful? To address this question, Figure 4 graphs the marginal effects of the statistically significant variables from the pooled version of Model 5 and their 95 percent confidence intervals; this is the full model including both the
FIGURE 4
Substantive Effects of Statistically Significant Variables on Terrorist Attack Lethality

attack-level covariates and the two standard aggregate controls for population and income. All marginal effects are calculated with the covariates held constant at their mean values. As demonstrated in the figure, all three regional variables decrease terrorist attack lethality when compared with the South. Although the effects may not seem dramatic, ranging from a 0.10 to 0.13 reduction in fatalities, it is important to recall that this is because the overwhelming majority (over 90 percent) of terrorist attacks are nonfatal. Regional location, according to the figure, has at least as great a substantive effect on terrorist attack lethality as the target selected and method of attack used, and similar effects to ideology. This is more surprising when recalling that the baseline categories for target and attack types include events that rarely lead to deaths, such as infrastructure attacks and kidnappings, and the ideology baselines include ideologies whose proponents seldom kill in their attacks (Asal and Rethemeyer, 2008b).

Conclusion

This article finds support for a cultural theory of the lethality of terrorist attacks. Cultures of honor socialize individuals to become sensitive to slight, and to rectify their perceived offense with excessive force to reclaim a reputation for toughness. Honor cultures should therefore produce terrorists driven by a sense of insult and an imperative to respond with exorbitant violence to affirm their reputations. Following studies from several fields of inquiry (Nisbett and Cohen, 1996; Brown and Osterman, 2012; Dafoe and Caughey, 2016), this argument is supported through an examination of all domestic terrorist attacks in the United States from 1970 to 2015. As expected, terrorism in the South, the quintessential culture of honor, is deadlier than in the remaining three regions of the United States.
Consistent with a cultural theory of terrorist attack lethality, the only region where terrorism lethality appears statistically indistinguishable from the South is the Mountain West, the only other region in the United States where a culture of honor developed (Nisbett, 1993; Cohen and Nisbett, 1997). In the other regions—the Midwest, Pacific West, and northern states—consistently suffer from much less deadly terrorism.

This finding makes several contributions to the study of political violence. First, it helps address outstanding puzzles in the terrorism literature. Terrorists tend to disavow deadly attacks to avoid alienating civilians to their cause, which explains why unclaimed attacks are on average deadlier than claimed ones (Kearns, Conlon, and Young, 2014). Why, then, do terrorists launch fatal attacks at all, especially given that some terrorists are remarkably successful in avoiding casualties (Asal and Rethemeyer, 2008a)? Deadly attacks are still sensible if reputational concerns, rather than a strict desire to rally popular support for their cause, partially motivate terrorists from some cultures. Although the importance of culture to understanding terrorism does not signify that terrorists are “irrational,” it does suggest that diverse concerns that are sometimes unrelated to policy or institutional change motivate many terrorists, especially those operating outside wartime contexts (Abrahms, 2008). We should anticipate terrorism to result in more deaths than it would otherwise where terrorists are motivated principally by reputational concerns rather than strategic objectives or popular support. Terrorism is often used to communicate to a third audience (Asal and Rethemeyer, 2008b; Mahoney, 2017), and when the goal is signaling resolve and toughness, there is reason for terrorists to attempt especially lethal attacks.

Second, this study adds to the research on the underlying cultural, social, and psychological causes of political violence. Several recent studies examine the interrelation among cultural and societal-level factors and the origins of political violence. For instance, one study shows that the previous social and political status of women predicts whether women will participate in armed rebellion (Thomas and Wood, 2017). There is also evidence that gender inequality primes states for conflict (Caprioli, 2005; Hudson et al., 2009). In this latter research, the authors rely on Galtung’s (1990) concept of cultural violence, which describes cultural features used to legitimate violence, an idea the originator intended to help integrate the study of culture and peace research. Evidence presented in this article suggests that cultural features, in this case those that comprise cultures of honor, can socialize individuals in ways that predispose them to violence, including political violence. This has important implications for future research. For one, since the culture of honor hypothesis derives from studies of homicide (Nisbett and Cohen, 1996), there should be greater cross-fertilization among studies of various types of violence (see Kalyvas, 2015). As shown here, political violence can spring from the same underlying causes as societal violence. Moreover, since cultural violence has a strong degree of “permanence” (Galtung, 1990), these cultural features can predict where violence is likely to be most dramatic over long periods of time. If cultures persist long after the conditions that caused them disappear, then it is reasonable to expect that they shape individual psychology in ways that influence patterns in violent behavior.

REFERENCES


**Supporting Information**

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**Table A1.** States Ranked According to Average Number of Deaths per Attack

**Table A2.** Results from Robustness Checks