When to Take Credit for Terrorism?: A Cross-National Examination of Claims and Attributions

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Abstract

Rationalist research expects that groups claim credit for terrorism. Yet, the vast majority of attacks are not claimed. Of the unclaimed attacks, about half are attributed to a specific group. What factors impact claiming decisions? While extant literature largely treats claiming as binary—either claimed or not—the present study disaggregates claiming decisions further to also consider attacks with attributions of credit but no claim using data from 160 countries between 1998 and 2016. Both attack-level and situational factors impact claiming decisions. Disaggregating claiming behavior shows meaningful differences. Specifically, competitive environments and suicide attacks increase claims but not attributions. Higher fatalities in general increase both claims and attributions, but when the target is civilian attributions decrease with a high body count whereas claims increase. Further, while the directional impact of other variables is the same, the magnitude of their effects vary between claims and attributions. Results are robust across modeling specifications. Findings demonstrate that our understanding of claiming behaviors is limited when claiming is treated as dichotomous. This study provides further insight into factors that impact claiming decisions for terrorism. Results can address data issues in academic research and inform counterterrorism responses.

Keywords: terrorism; claiming credit; attributions; signaling; unclaimed attacks

Introduction

On October 29, 2004—over three years later—Osama bin Laden claimed credit for September 11th attacks.[1] Intelligence agencies had long linked Al Qaeda to the attacks, so why not claim credit initially? Since the 1800s, rebels have claimed responsibility for their attacks to differentiate themselves from criminals.[2] Rationalist literature has generally assumed that groups claim credit otherwise the purpose of the violence may be obscured.[3] Claiming credit for terrorism is easy and cheap, should the perpetrators desire to do so. Yet, between 1998 and 2016, it appears that only 16.0% of terrorist attacks in the Global Terrorism Database (GTD) were claimed.[4] The high proportion of unclaimed attacks suggests that sending a signal through claiming may not be central to terrorism. Instead, groups may be strategically deciding whether or not to claim credit for their attacks.

While data show that groups claim credit for terrorism a small portion of the time, this is an under-theorized phenomenon. Extant literature has focused on situational and group-level factors to propose why some attacks are claimed while others aren't.[5] These studies, however, have largely treated claiming as binary—claimed or unclaimed.[6] Yet, as LaFree, Dugan and Miller note, many attacks are attributed to a particular group even when the group does not explicitly claim responsibility.[7] Indeed, between 1998 and 2016, 26.8% of attacks in the GTD were in this middle ground—they were not claimed but were still attributed to a specific group. The remaining 57.2% of attacks in this time period were neither claimed nor attributed to a group.[8]

Despite the boom of research on terrorism, relatively little attention has been paid to whether or not these attacks are claimed.[9] Even fewer studies have addressed unclaimed but attributed attacks.[10] Yet, in the immediate aftermath of an attack, media and the public focus on who is responsible or whether any group has claimed credit. Since claiming is not the norm, this

question often goes unanswered. Still, many unclaimed attacks are credibly attributed to a particular group, which helps remove some uncertainty following an attack. From a counterterrorism perspective, uncertainty about who is responsible limits our understanding of violence and how to best respond. Uncertainty can also breed fear among the public,[11] even though unclaimed attacks are actually quite common.

Since most attacks are unclaimed, we need a better theoretical and empirical understanding of claiming decisions. Research on claiming decisions has implications for scholarship, policy, and public reaction. Knowing when and why groups claim their violence or have attacks attributed to them can improve academic data issues, particularly for studies that use claims as a measure of a group's activity. From this, we can better predict when claims or attributions are likely, which can improve counterterrorism responses. Additionally, greater public awareness that claiming terrorism is rare can help remove some uncertainty in the aftermath of an attack.

The present study addresses this gap in the literature by testing factors that impact claiming decisions for terrorism.[12] The next section discusses what is meant by claiming and why a group would claim an attack. The article then examines extant explanations for why a group would commit a terrorist attack but not claim it, and explores how attributions of responsibility impact these decisions. Next, the article offers and tests rationalist explanations from the literature for when an attack is more likely to either be claimed or be unclaimed but attributed to a group. Finally, the article concludes with a discussion of the results and their limitations, policy implications stemming from these findings, and future research directions.

Extant literature on claims and attributions

Why claim credit?

Brian Jenkins famously described terrorism as theater—an act performed for an audience to get a response and support one's goals.[13] Rationalist literature suggests that terrorism is a strategic act used to communicate a message.[14] This literature assumes that terrorism is perpetrated by rational actors who use costly signaling to achieve goals. As Hoffman notes, terrorism has generally been committed by groups with clear goals who claimed credit for their violence and often explained how attacks further their objectives.[15] As such, much of terrorism research has assumed that the responsible group claims credit for their attacks since an attack alone is a poor form of communication.[16]

Claiming occurs when actors publicly state that they are responsible for a terrorist attack. For example, the Earth Liberation Front (ELF) perpetrated a number of attacks aimed to stop predation of natural habitats during the late 1990s and early 2000s. ELF often used notes to claimed credit for these attacks. Spanning ideologies, group ranging from Sovereign Citizens, the Army of God, Al Qaeda, and countless others claim credit for their violence. Claiming is easy and there are many potential benefits to doing so.[17] Claiming allows the group to signal to their adversaries or to otherwise send a message that could help them achieve a goal. Claiming an attack generates attention and publicity to one's cause. Claiming also helps to prevent others from free-riding by taking credit for another group's work.[18]

While there are many reasons to claim credit for an attack, claiming can be detrimental to a group. Groups that use terrorism ultimately want to survive.[19] To survive, groups have to balance the need to gain supporters with concerns about backlash from the populace.[20] Support can be explicit—such as providing resources or recruiting militants—or implicit—such as silence or complacency to the group's actions. When threats to popular support increases, a group's likelihood of survival decreases.[21] This, however, is a balancing act since groups also need to

demonstrate to potential supporters that they are worthy of support.[22] As Pluchinsky posits, groups will be less likely to claim attacks when doing so would damage their public image.[23]

We assume that the actors who claim an attack are actually the ones who committed it.[24] Yet, groups sometimes falsely claim credit for terrorism. Of course, we cannot know how often this occurs, but certainly at least a small proportion of claimed attacks (16% between 1998 and 2016) are claimed falsely. When a group falsely claims credit for terrorism, it is likely an attempt to display strength even though the group may not actually be able to carry out such an attack (see Kearns et al. 2014 for full discussion of false claiming as a rational action). Sometimes an attack is inspired by a group that claims credit for it even though that group was not directly involved in its planning or execution. In recent years, this phenomenon is often linked to the so-called Islamic State of Iraq and the Levant (ISIS), which has claimed credit for attacks where no direct link can be found. These falsely claimed attacks generally occur in Western countries where the group presumably does not have capacity to directly carry out an attack but benefits from suggesting that they do. A few recent examples include: the 2016 Bastille Day attack in Nice, France[25] that was likely inspired by ISIS but not perpetrated in any direct coordination with the group; the 2017 Las Vegas shooting[26] that does not appear to have been influenced by ISIS in any way; and, perhaps even more dubiously, a violent incident in a Filipino casino[27] that turned out to be a robbery, not terrorism. It is unclear whether lone wolves who operate separately from groups like ISIS exhibit different claiming behaviors. Though, as Abrahms and Conrad point out, lone wolves are responsible for a small proportion of terrorist violence.[28] Regardless, while there is no clear data on how commonly false claims occur, they are often taken seriously by media, the public, and even governments.

Regardless of veracity, a group may be more liked to claim credit for an attack when they expect to gain publicity or support without a high risk of repercussions from either the population or the state.[29] Yet, circumstances favorable to claiming an attack are not always present. In many cases, it may be strategically advantageous to perpetrate a terrorist attack but not to claim credit for it. The next section outlines conditions in which attacks may not be claimed.

Why not claim credit?

Given the arguments for claiming terrorism and the ease of doing so, why would a group perpetrate a terrorist attack then decide not to claim credit for it? Extant literature has focused on four potential explanations on when it is more advantageous *not* to claim credit: 1) situational factors, 2) attack characteristics, 3) the group's ideology, and 4) the group's goals. While each of these factors may impact claiming decisions on their own, multiple factors are likely at play simultaneously. There are myriad potential internal and external pressures on a group that impact claiming a given attack. Further, terrorism involves information asymmetries that can result in miscalculations about claiming. As part of broader political conflict, claiming decisions can be both influenced by and subsequently impact how opponents react.[30] This project is not meant to oversimplify these pressures for every attack. Rather, its goal is to test the impact that a combination of factors has on claiming decisions.

When an attack is not claimed, the message that it was meant to communicate may either be lost or be ambiguous.[31] Still, many unclaimed attacks are attributed to a specific group. For example, an 8/8/2000 car bombing in Madrid is attributed to Euskadi ta Askatasuna (ETA) despite no claim of credit.[32] Similarly, hundreds of groups across the world have attacks attributed to them that they have not actually claimed. When the group responsible is already linked to the attack through an attribution, it may reduce the incentive for the group to later claim the incident. Yet, it

begs the question of why the attack was not claimed in the first place. Lying about terrorism by not claiming credit can still send a signal and be a rational action when the perceived repercussions of claiming outweigh the expected benefits.[33] To date, scholars have generally not attempted to explain attributed attacks despite their relative frequency (see Rorie, 2008 for an exception). The present study addresses this gap in the literature by examining factors that impact whether an attack is claimed or is unclaimed but attributed to a specific group.

When should attacks be claimed or attributed?

Competition. Scholars have posited that a group's decision whether or not to claim an attack is directly related to factors in the group's operating environment that impact their interactions with other actors. Hoffman argued that claiming is more likely when there is increased competition, up to a point of diminishing returns.[34] In a study of Israel alone, he found support for this argument. However, in a study of global terrorism, Wright found that competition did not impact claiming in any region.[35]

When more groups are operating in the same place simultaneously, outbidding becomes more important for a group's survival,[36] even when other factors make claiming the attack less appealing. Competitors vie for support from the population, so perpetrating and claiming an attack signals that the group is strong and worthy of support. Claiming should be even more likely when multiple groups attack similar targets. In these situations, it would be unclear which group was responsible unless the perpetrators claim the attack.[37] More competitive environments may incentivize groups to collaborate, in which case multiple claims could be truthful.[38] Competitive environments may also increase false claiming where multiple groups say they perpetrated the attack but at least one is lying.[39] Regardless, outbidding necessitates a claim so we should expect to see fewer unclaimed attacks in more competitive environments. While unclaimed attacks should

be less frequent, when they do occur it may be more difficult to identify which group is responsible. Thus, attributions for unclaimed attacks should be less frequent when there are more active groups. This leads to the following expectations:

Hypothesis 1: As the number of groups increases, the likelihood that an attack is
a. claimed increases.
b. attributed decreases.

Competition can also be measured by recent violence in the country. There are two theoretical pathways for how the level of recent violence would impact claims and attributions. On one hand, when there have been more recent attacks in a country, the population will be on edge.[40] Generating fear and unease among the population can be accomplished with or without a claim of credit.[41] However, more recent violence may increase the risk of backlash from both the population and the state. When the risk of reprisal is higher, groups should be more inclined to hide their involvement.[42] Still, in a more violent environment, a group may perpetrate an attack but hope the incident is not connected back to them. Here, the population will be more inclined to seek answers and identify the responsible party, which would increase attributions. On the other hand, more competitive environments are also noisier[43] so claims may get lost and attributions for any particular attack may be less likely. Both theoretical pathways would lead to less claiming. The impact of a noisy environment on attributions, however, may be mixed and produce no significant difference on average since one mechanism should increase attributions while the other depresses them. This leads to the next hypothesis:

Hypothesis 2: When there were more attacks recently, the likelihood that an attack is
a. claimed decreases.
b. attributed is not impacted on average.

Attack characteristics. The decision whether or not to claim an attack may be due to characteristics of the incident itself. Simply put, some attacks are more appealing to claim credit

for than others. Claiming decisions can be made either before the attack is perpetrated or after the fact, especially if the attack did not go according to plan. In this vein, scholars have posited that groups are less likely to claim credit when the attack failed[44] or when there are high fatalities.[45]

Terrorist attacks are, on average, more lethal in recent decades.[46] Killing a few people may be seen as acceptable, whereas both no fatalities and high body counts become riskier for a group and can impact claiming decisions in similar ways.[47] On one hand, there may be little incentive to claim credit for attacks without fatalities.[48] While high body counts are far from the only goal of terrorism, attacks that do not kill anyone could be viewed as failures.[49] In this case, claiming could signal incompetence and thus be counterproductive. Similarly, in the absence of fatalities, there may be less incentive for the public or the state to conduct a thorough investigation out of which an attribution would be made. On the other hand, when an attack kills a large number of people the group likely would face increased backlash from both the population and the state.[50] Thus, we should expect fewer claims when the death toll is higher. At the same time, there will be more incentive to find the group responsible for the attack, so we should see more attributions for unclaimed attacks. In short, claims and attributions should both be less likely when fatalities are lower and higher. From this, I expect:

Hypothesis 3: There will be a quadratic relationship between fatalities and
a. claims.
b. attributions.

Scholars have suggested that attacks against hard targets like the military[51] and diplomatic missions[52] will be claimed more often.[53] Military and diplomatic targets are viewed as less innocent than civilians since they are armed and engage in combat. Additionally, the ability to attack a hard target demonstrates the group's strength.[54] For these reasons, claims should be more likely. Attacks against military or diplomatic targets will also garner maximum attention from the

government. These attacks will be investigated more thoroughly and should be attributed to a group more frequently. From this, I expect that:

Hypothesis 4: When the target is military or diplomatic, the likelihood that an attack is
a. claimed increases.
b. attributed increases.

Of course, when considering the impact of fatalities on claiming decisions, it also matters *who* is killed.[55] Killing large numbers of people—particularly civilians—sends the message that nobody is safe.[56] Accordingly, high fatality attacks will likely generate greater backlash from the population since civilians are viewed as more innocent.[57] Additionally, attacks on soft-targets—where the body count could be higher—are relatively easy as compared to hard-targets. As such, attacks on soft-targets do not signal strength in a way that would clearly generate more support than backlash. Still, targeting civilians should increase public outrage and motivation to identify the perpetrators. From this, I expect:

Hypothesis 5: When the attack kills a high number of civilians, the likelihood that an attack is
a. claimed decreases.
b. attributed increases.

In contrast, high fatality attacks against military or diplomatic targets signal strength and capability that should outweigh fears of backlash from the public or the state.[58] When attacks against military or diplomatic targets are not claimed, the state would still be motivated to find the group responsible. From this, I expect:

Hypothesis 6: When the attack kills a high number of military or diplomatic targets, the likelihood that an attack is
a. claimed increases.
b. attributed increases.

Research suggests that suicide attacks are more likely to be claimed.[59] Suicide attacks demonstrate the most extreme form of commitment to a cause, which implies that the group is

strong and deserving of support. Suicide attacks also attract a good deal of attention, which garners notoriety. For these reasons, suicide attacks should have more claims.[60] Additionally, by definition a suicide attack leaves the body of the perpetrator. In some cases, the body can be identified and thus could be tied back to the group responsible so deciding not to claim credit could be futile. Suicide attacks also spread fear, which is double-pronged. According to the GTD, most suicide attacks target either civilians or state agents, which can lead to repercussions from both the public and the government. Conversely, suicide attacks may also generate support by communicating a message that you are either with the group or against them. Furthermore, suicide attacks can generate support if the bomber's family receives praise for their sacrifice. While there are many reasons to claim credit for a suicide attack, some of these attacks will not be claimed. When this occurs, there are incentives to attribute the attack to a group to minimize fear stemming from uncertainty among the public. Additionally, since suicide attacks are relatively rare and are committed by a smaller percentage of the overall groups that use terrorism, it may be easier for these attacks to be attributed when they are not claimed. This leads to the final hypotheses:

Hypothesis 7: When the incident is a suicide attack, the likelihood that an attack is
a. claimed increases.
b. attributed increases.

Table 1 summarizes factors that I expect to impact claiming decisions and the expected directionality of these relationships.

[TABLE 1 HERE]

Group characteristics. Several group-level factors—such as ideology and goals—may impact whether or not an attack is claimed.[61] Of Kydd and Walter's five strategic logics of terrorism, outbidding is the only one that necessitates that a group claims credit for their attacks.[62] Any of their other strategic logics (attrition, intimidation, provocation, and—perhaps especially—spoiling) can be accomplished without claiming. Group structure may also impact claiming.

Hierarchically structured groups may be susceptible to principal-agent problems that can impact claiming.[63] Claiming also may be influenced by a group's position relative to opponents and by the number of rivals operating in the same space.[64]

While group-level factors likely impact decisions about claiming credit for terrorism, it is difficult—if not impossible—to empirically evaluate them. Hoffman addresses this issue by creating ratio variables for the percentage of groups of a particular ideology and the percentage of groups with state sponsorship in Israel in each year.[65] Given the global focus of this paper, it is not feasibly to replicate his approach. Alternatively, Abrahms and Conrad included group-level variables— state sponsorship and Islamist ideology—in some of their models.[66] Since group-level factors can only be measured for attacks where the perpetrator claims credit, these models have a substantially reduced number of observations and the results may be biased due to the non-randomness of these missing values. By definition, these group-level factors are unknown when the attack is unclaimed. Even when an attack is attributed to a group, we cannot know group-level factors with a high degree of confidence. Thus, group-level factors are excluded from this paper.

Methodology

Data

This project combines data from three sources: the GTD[67]; UCDP/PRIO Armed Conflict Dataset[68]; and, Vreeland's adaptation[69] from the Polity IV scale.[70] To test the hypotheses, I use event-level data between 1998 to 2016 from the GTD, which only includes terrorism by sub-national actors. Over this 19-year period, the GTD reported 102,914 terrorist attacks in 160 countries. If terrorism by state actors was also included, the number of attacks would be higher and patterns of claims and attributions could reasonably be different. I discuss this more in the conclusion.

Key variables

The outcome of interest in this study is claiming decisions. The GTD codes whether or not an attack was *claimed*.[71] When an attack is unclaimed but *attributed*[72] to a group, then the GTD's 'claimed' variable is coded as 0 but there is a group listed in the 'group name' variable. Finally, when the GTD codes an attack as unclaimed and there is no group listed in the 'group name' variable, then it is truly an *unclaimed* attack. I recoded these three mutually-exclusive categories in the single outcome variable used in analyses: 0=unclaimed; 1=claimed; or, 2=attributed. Table 2 presents descriptive statistics for all variables included in the models.

[TABLE 2 HERE]

The key independent variables in this study are: *number of groups, number of recent attacks, number of fatalities, military/diplomatic target,* and *suicide attack.*[73] For hypothesis 1, I reshaped GTD data to measure the number of groups per country-year.[74] The number of groups is right-skewed so this variable is logged in analyses.[75] For hypothesis 2, I reshaped GTD data to measure the number attacks in a county during the previous year. The number of attacks in the previous country-year is right-skewed so it is logged for analyses.[76] For hypotheses 3, I measured fatalities using GTD data. I created a variable for the number of people killed in each attack excluding the perpetrator(s). For hypothesis 4, I reshaped the GTD's target type variable to create a binary variable for whether the attack was against military or diplomatic targets.[77] For hypotheses 5 and 6, I interact fatalities with the respective binary variables for civilian attacks[78] and military or diplomatic attacks. Lastly, for hypothesis 7, I use the GTD's binary variable for suicide attacks.

Control variables

Armed conflict could impact claiming decisions for terrorism in multiple ways. On one hand, groups may be more inclined to claim their attacks during conflict to signal strength to both their opponent and to moderates. On the other hand, claims may be less likely since the perpetrator would be clear based on the target.[79] In these cases, we may expect unclaimed attacks to be attributed since the likely perpetrators are implied. Furthermore, the chaos inherent in war makes claiming—or even attributing—more challenging.[80] To account for the possible impact of armed conflict on claiming decisions, I include a binary variable for the presence of armed conflict. Armed conflict is measured using the UCDP/PRIO Armed Conflict Dataset, which defined conflict as "a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in a calendar year."[81] The UCDP-PRIO database codes at the incident-level and indicates the states involved in each conflict, which includes extra-systemic war, interstate war, intrastate war, and internationalized internal war.

Level of democracy may also impact claiming. Democratic states have more freedom of the press, which could make it easier for a group to claim credit for an attack and for that message to be transmitted to the public. Democratic states also have more resources and motivation to investigate an attack to the point that it can be attributed to a group. Democracy is measured using Vreeland's adaptation[82] from the Polity IV scale.[83] Vreeland argues that the variables on political participation are ''contaminated' by political violence' and excludes them from his measure of democracy.[84] Vreeland's measure of democracy is more appropriate to avoid conceptual endogeneity.

AQ and ISIS. AQ and, more recently, ISIS have sought to garner as much attention as possible with seemingly little concern about backlash. Both groups sometimes claim credit for

attacks that follow—or appear to follow— their ideology or goals even if the group was not directly involved. To control for the impact that AQ and ISIS may have on claiming behavior more broadly, I created binary variables for attacks that are either claimed by or attributed to each group. Rather than control for AQ and ISIS attacks, I estimate models with and without these incidents and compare results.

Results

The dependent variable in analyses is the claiming decision, which takes one of three mutually exclusive values: unclaimed, claimed, or attributed. Thus, all models are estimated using multinomial logistic regression with unclaimed attacks as the reference category and standard errors clustered on the country. Results are reported using relative risk ratios to ease interpretability of coefficients in much the same way that odds ratios are used for logistic regression. To control for temporal issues—such as the rise of social media and internet use—that may impact claims and attributions, I include year dummies.

The main results tables show models estimated in two ways. First, I estimate models where fatalities are coded as their actually values (0 to 1500 per attack). Second, since 99.98% of attacks have 200 or fewer fatalities—I top-coded fatalities at 200 for the 0.02% of incidents where the fatalities were higher. As the tables show, results are fundamentally the same. The models with fatalities top-coded at 200 are discussed in text. As robustness checks, I also estimated models where fatalities were entered as: 1) a linear term only and no interactions; 2) a linear term and a quadratic term but no interactions; and, 3) a logged term and interactions. These models are reported in the appendix and show that results are consistent, which demonstrates that the relationships discussed in text are not sensitive to modeling decisions.

Before reporting the main results, I first estimate a series of bivariate models to examine the separate impact of each independent and control variable on claiming decisions.[85] As Table 3 shows, when considered separately, most variables have the expected significant impact on both claims and attributions. There are, however, a few exceptions. When other factors are not controlled for, the number of groups does not impact the likelihood that an attack is claimed. Additionally, while I did not expect that the number of recent attacks would impact attributions, the bivariate model shows a significant negative relationship. There are, of course, many factors that may impact claiming decisions for terrorist attacks. While the bivariate models show many significant relationship, these factors do not occur in isolation. To test the relative impact of each variable on claiming decisions when also accounting for other variables, I next estimate full models where all independent and control variables are included.

[TABLE 3 HERE]

Claimed attacks

As Table 4 Model 2 shows, most hypotheses about claiming are supported. Supporting H1a, a one-unit increase in the logged number of groups in that country-year is associated with a 36% increase in the likelihood that an attack is claimed. As expected in H2a, the likelihood of claiming is reduced by 17% for each unit increase in the logged number of attacks. Supporting H4a, attacks against military or diplomatic targets are 53% more likely to be claimed. Similarly, suicide attacks are 252% more likely to be claimed, as expected in H7a.

[TABLE 4 HERE]

Results show that both the raw count of fatalities and the squared term significantly impact the likelihood that an attack is claimed. Figure 1 shows that the relationship between claiming and fatalities is quadratic whereby claiming is least likely when there are either a few or a lot of

fatalities, as expected in H3a. Beyond just the number of fatalities, it also matters who was killed.[86] H5a expected that claiming would decrease with more civilian fatalities, yet Figure 2 shows that this is not the case. Rather, claiming increases with body count for civilian attacks and is quadratic for attacks against non-civilian targets. Contrary to expectations in H6a, the number of fatalities do not impact claim decisions for attacks against military or diplomatic targets. In the presence of armed conflict, an attack is 58% less likely to be claimed. Overtime, claiming increases in 2015 and 2016, which may suggest a trend though it is too early to say this with confidence.

[FIGURE 1 HERE]

[FIGURE 2 HERE]

Attributed attacks

As Table 4 Model 4 shows, few of the hypotheses about attributions are supported and significant results are found in the opposite direction as expected in a few instances. Supporting H4b, attacks against military or diplomatic targets are 90% more likely to be attributed. I did not expect that, on balance, the number of recent attacks could impact likelihood of attributions since unease among the population should increase attributions while the noisy environment would make attributions more difficult. Yet, results show that a one-unit increase in the logged number of recent attacks decreases the likelihood of attribution by 21% (H2b), which suggests that—on balance—the noisy environment has a stronger depressive effect on attributions. Contrary to expectation, the number of active groups (H1b) does not impact the likelihood that an attack is attributed. Similarly, there is no relationship between suicide attacks (H7b) and attributions.

Fatalities impact the likelihood that an attack is attributed to a group. Figure 1 shows that—similar to the relationship between fatalities and claims—attacks are less likely to be attributed when there are either a few or a lot of fatalities, which supports H3b. As with claims, who is killed

also impact attributions. While H5a expected that attributions would increase with civilian fatalities, Figure 2 shows that the actual relationship is curvilinear whereby attributions are less likely for attacks with the fewest or most civilian deaths. For attacks against military or diplomatic targets, fatalities do not impact attributions (H6b). Neither level of democracy nor armed conflict impact attributions. Additionally, attributions were more likely in 2015 only.

Comparing claims and attributions

Comparing the models in Table 4, some results are similar whereas other show meaningful differences across the outcomes. Two predictors—the number of active groups and being a suicide attack—impact the likelihood of claiming but not attributions. Further, claims are less likely during war but attributions are unaffected. Across the other independent variables, the directionality of each significant predictor is the same for both claims and attributions. However, comparison of marginal effects show that the magnitude of these results differ. The probability of being attributed is 3.6% lower than the probability of being claimed when there were more attacks in the previous year (p=0.014) and 1.2% lower than the probability of being claimed when there were more fatalities (p<0.001). The probability of being attributed is 9.8% higher when the target is military or diplomatic (p=0.005).

Results show that contextual and attack-level factors have different impacts on whether an attack is claimed or is unclaimed but attributed to a specific group. Extant literature has generally treated claiming as dichotomous, which limits our understanding of claiming behaviors. To demonstrate that results would be different if claiming had been dichotomized in this study, Table 5 presents the models reported in Table 4 using binary dependent variables for whether or not an attack is claimed (0=no claim; 1=at least one claim) and whether or not an attack is claimed or attributed (0=no claim or attribution; 1=claimed or attributed).

Results are noticeably different between both sets of models in Table 5 and when comparing models in Table 5 to those in Table 4. Comparing models on Table 5 (Models 6 and 8), we see that three variables—number of groups, number of recent attacks, and military or diplomatic targets—are significant in one model but not the other. This shows that modeling decisions—specifically whether to combine attributed attacks with unclaimed ones or with claimed ones—impact results. Comparing Model 2 to Model 6, we see two main differences: neither the number of recent attacks nor attacking a military or diplomatic target are significant when claiming is treated as binary. Similarly, comparing Model 2 to Model 8, the number of groups is not significant when claims and attributions are combined into a single category. Further, while the other variables have the same statistical impact on claiming, the magnitude of the effects differ for military targets and suicide attacks. Finally, comparing Models 6 and 8, we again see key differences in the significance of: number of groups, number of recent attacks, and military or diplomatic targets. In sum, disaggregating claiming behavior beyond a binary measure expands our understanding of factors that impact the likelihood that an attack will either be claimed or be unclaimed but attributed to a specific group.

[TABLE 5 HERE]

What impact do Al Qaeda and ISIS have on the results?

In recent years, AQ and ISIS have dominated discourse on global terrorism. Despite ISIS's relatively short duration, 4.3% of attacks in this dataset were either claimed by or attributed to the group. In 2015 alone, ISIS was connected to 10.7% of all attacks. AQ, which has been active for longer than ISIS, has either claimed or is believed to be responsible for 1.9% of attacks in this dataset. In their most active year, 2012, AQ was connected to 6.0% of all attacks. Results may be impacted by these groups' prominence, preferences for claiming, and frequency of attributions. To

test whether AQ and ISIS impact results, I estimate the same models reported in Table 4 but without attacks attributed to or claimed by either of these groups. Results of the models without AQ and ISIS attacks are shown in Table 6. The results are partially the same, but there are a few key differences. When AQ and ISIS attacks are removed from analyses, the likelihood of claiming is no longer impacted by the number of groups or the number of recent attacks. Otherwise, the results are statistically the same and substantively similar.

[TABLE 6 HERE]

Discussion

This project examined factors that impact when a terrorist attack is likely to be claimed versus unclaimed but attributed to a specific group. Using GTD data, I found that competition, attack characteristics, and context impact claiming decisions for terrorism. While Hoffman found that more competition increased claiming in Israel[87], Wright did not find support for this globally.[88] More recently, Abrahms and Conrad's findings were inconclusive and dependent on operationalization.[89] In the present study, an increase in the number of active groups in a country-year increased the likelihood of claims but did not impact attributions. Results support Kydd and Walter's expectation that outbidding would be more likely with additional groups.[90] However, when a claim is not made, the more competitive environment may also be noisier which makes attributions more challenging.[91] Disaggregating claims and attributions may help to explain the contradicting findings in previous research.

Competition can also be measured by the amount recent violence. Results show that more recent attacks decrease the likelihood of both claims and attributions, which suggests that groups are sensitive to the population's tolerance for violence. Insofar as the goal of terrorism is to generate fear, this can be accomplished even without a claim.[92] Further, more recent attacks could

increase the risk of reprisal, which would also decrease claiming.[93] Additionally, an increase in recent attacks may strain state and public resources, which makes it easier for claims to get lost in the shuffle and makes it more difficult to identify the group responsible for any particular attack.[94]

Results of this project clearly show that attack-level factors also impact claiming behaviors. Supporting previous research, suicide attacks are significantly more likely to be claimed.[95] Yet, suicide attacks do not impact attributions. Non-suicide attacks are claimed 14.1% of the time whereas 37.7% of suicide attacks are claimed. Perhaps this high rate of claiming helps to explain why suicide attacks do not impact attributions. Also supporting prior research, results here show that attacks against the military or diplomatic missions are more likely to be claimed.[96] Similarly, attacks against military or diplomatic targets are more likely to be attributed. As a point of caution with these conclusions, some attacks against military are excluded from the GTD because they occur in the context of legitimate warfare and fail to meet one of the GTD's other two inclusion criteria: 'be aimed at attaining a political, economic, religious, or social goal'; and, 'evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) than the immediate victims'. As such, it is possible that results related to military attacks are partially a function of the dataset's inclusion criteria, which could be explored in future research using other datasets. Partially supporting LaFree et al.'s[97] notion that war creates a noisy environment, armed conflict reduces the likelihood that an attack is claimed. Attributions, however, are not impacted by conflict. Level of democracy has no impact on claiming decisions.

Prior research does not clearly show a relationship between fatalities and claims. Abrahms and Conrad found that—high fatality attacks were more likely to be claimed—though this was only the case in some of their models and had no effect in others.[98] Results from the present study suggest that the relationship between fatalities and both claims and attributions is quadratic. In

short, claims and attributions are both less likely for attacks with the fewest and the most fatalities. Furthermore, the impact that fatalities have on claiming decisions is a function of who is killed. For attacks against civilians, claiming is more likely as the body count rises, which contradicts expectations.[99] This suggests that groups perceive that the notoriety and support generated from high fatality attacks will outweigh potential backlash. Contrary to expectation, the relationship between attributions and fatalities for civilian targeted attacks is curvilinear whereby attributions are less likely for attacks with the fewest and the most killed. Since high fatality attacks are relatively rare and—as results here show, they are more likely to be claimed—there may simply be fewer high fatality attacks to be attributed, which could explain this finding. Contrasting with Abrahms and Conrad's findings,[100] in this present study there is no relationship between fatalities against military or diplomatic targets and either claims or attributions. It may be that attacks against military or diplomatic targets are more likely to be both claimed and attributed regardless of body count.

In sum, these findings advance our understanding of claiming decisions in three key ways. First, disaggregating beyond a binary measure of claiming shows variation across a few variables and similarities across others. Two factors—the number of active groups and suicide attacks—increase claims but not attributions. As fatalities rise in civilian targeted attacks, claims increase whereas attributes have a curvilinear relationship with fatalities. Further, armed conflict decreases the likelihood of claims but does not impact attributions. While other factors have the same directional impact on both claims and attributions, the magnitude of those effects are different for recent attacks, fatalities, and attacking a military or diplomatic target. For some studies, it may not matter if claims and attributions are separated out, whereas collapsing claiming decisions into a dichotomous measure may produce biased results in other studies. Results also help to address

conflicting findings in the literature while expanding scholarly understanding of factors that impact claiming decisions for terrorism. Second, findings are fundamentally similar regardless of whether ISIS and AQ attacks are included. This suggests that ISIS and AQ have not changed the nature of claiming decisions. Third, despite technological advances that should make it easier to claim and to attribute terrorism, actual claiming decisions do not appear to be changing over time.

Conclusion

This project is a step toward empirically testing propositions about claiming decisions for terrorism. By expanding our understanding of claiming decisions in terrorism, this project has implications for research and policy. Rationalist explanations for terrorism have long focused on the communicative nature of the actions where claiming is essential. Yet, data show that claims are rare for terrorism. As the frequency of unclaimed attacks has grown, it is increasingly important to understand when and why some attacks are claimed, while others are attributed to a group. To date, there has been a dearth of research on unclaimed attacks and the research that does exist tends to treat claiming as a binary event. Thus, little is presently known about which groups are least likely to claim their attacks, when groups may be more likely to claim attacks, and why claiming is generally so low. The present study builds our understanding of claiming decisions, which can improve data issues to both build better models and improve inclusion criteria for group or ideology focused research. Further, disaggregating claiming decisions shows some meaningful differences, which can inform future research. With more complete theoretical and empirical research, we can start to predict when claims and attributions will be more or less likely, when to take claims seriously, and when to think groups are lying—all of which can improve counterterrorism responses. Additionally, raising public awareness that claims are rare for terrorism can help to quell the fear that stems from uncertainty about responsibility for an attack.

While the present study expands our understanding of claiming behavior, it is not without limitations. The main limitations of this project stem from the clandestine nature of terrorism. Specifically. we cannot model group-level factors since these variables are—by definition—missing when the responsible group is unknown. While about a quarter of attacks are attributed, it is likely that at least some of these implicate the wrong group. Further, even when an attack is claimed, we cannot know for sure that the group is truly responsible and this becomes even more tenuous when there are multiple claims. These are unavoidable limitations in studying claiming behavior for terrorism.

The present study also provides a few avenues for future research. Like any dataset, the GTD is not definitive. The two most commonly used terrorism datasets, by definition, include different cases since ITERATE focuses on transnational attacks while the GTD also includes domestic attacks.[101] Patterns for claims and attributions may vary between these datasets. Similarly, attacks may appear in state-level terrorism datasets that are absent from the GTD.[102] National terrorism datasets may display different patterns for claims and attributions at the state-level. Further, the GTD excludes terrorism by state actors. Presumably, state actors would be less inclined to claim credit for their violence for fear of retaliation from other states, though attributions of responsibility may be greater. Further, factors that impact claiming decisions may differ for state actors as compares to the non-state actors examined in this study.

The present study suggests a few avenues for future research. First, research should examine whether the results found here are consistent across datasets. Second, research should examine the extent to which claiming decisions are similar between state and non-state actors. Third, quantitative analyses presented here show aggregate trends, but this work would be enhanced by qualitative work focusing on how claiming decisions have been made by actual organizations and their members.

Finally, recent advances in data also allow us to gather geo-coded information about attacks. Geo-coded data can be used to provide a sub-national and micro-level explanation for claiming with the goal to eventually be able to predict the group responsible. Future research could incorporate geo-coded data to model claiming behavior for terrorism in a region with the aim to predict what group is likely responsible for unclaimed and unattributed violence.

Endnotes

[1] Al Jazeera, "Full Transcript of bin Ladin's Speech," November 1, 2004.

[2] David Rapoport, "To Claim or Not to Claim; That is the Question—Always!," *Terrorism and Political Violence* 9, no. 1 (1997): 11-17; Gary LaFree and Laura Dugan, "How Does Studying Terrorism Compare to Studying Crime?," in *Terrorism and Counter-Terrorism*, Emerald Group Publishing Limited (2004), 53-74.

[3] Brian Jenkins, *International Terrorism: A New Kind of Warfare* (Santa Monica, CA: Rand Corporation, 1974); David Fromkin, "The Strategy of Terrorism," *Foreign Affairs* 53, no. 4 (1975): 683–698; H. Edward Price, "The Strategy and Tactics of Revolutionary Terrorism," *Comparative Studies in Society and History*," 19, no. 1 (1977): 52-66; Martha Crenshaw, "The Causes of Terrorism," *Comparative Politics* 13, no. 4 (1981): 379-399; Ibid., "The Logic of Terrorism: Terrorist Behavior as a Product of Choice," *Terrorism and Counter Terrorism* 2, no.1 (1998): 54-64; Bruce Hoffman, "Terrorism Trends and Prospects," *Countering the New Terrorism* 7 (1999): 13; Andrew Kydd and Barbara Walter, "Sabotaging the Peace: The Politics of Extremist Violence," *International Organization* 56, no. 2 (2002): 263-296; David Lake, "Rational Extremism: Understanding Terrorism in the Twenty-First Century," *Dialogue IO* 1, no. 1 (2002): 15-28; Andrew Kydd and Barbara F. Walter, "The Strategies of Terrorism," *International Security* 31, no. 1 (2006): 49-80.

[4] The GTD defines terrorism as "the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation." For more details on the definition of terrorism used in the GTD: http://www.start.umd.edu/gtd/using-gtd/ (accessed 30 August). National Consortium for the Study of Terrorism and Responses to Terrorism. (2017) Global Terrorism Database (GTD).

[5] Richard Chasdi, "Middle-East Terrorism 1968-1993: An Empirical Analysis of Terrorist Group-type Behavior," *Journal of Conflict Studies* 17, no. 2 (1997): 1-27; Bruce Hoffman, "Why Terrorists Don't Claim Credit," *Terrorism and Political Violence* 9 no. 1 (1997): 1-6; Ibid., "Reply to Pluchinsky and Rapoport Comments," *Terrorism and Political Violence* 9 no. 1(1997): 18-19; Ibid., "Terrorism Trends and Prospects," 13; Dennis A. Pluchinsky, "The Terrorism Puzzle: Missing Pieces and No Boxcover." *Terrorism and Political Violence* 9, no. 1 (1997): 7-10; Rapoport, "To Claim or Not to Claim; That is the Question—Always," 11-17; Aaron Hoffman, "Voice and Silence: Why Groups take Credit for Acts of Terror,' *Journal of Peace Research* 47, no. 5 (2010): 615-626; Erin Kearns, Brendan Conlon, and Joseph K. Young, "Lying about Terrorism," *Studies in Conflict & Terrorism* 37 no. 5 (2014): 422-439; Max Abrahms and Justin Conrad, "The Strategic Logic of Credit Claiming: A New Theory for Anonymous Terrorist Attacks," *Security Studies* 26, no. 2 (2017): 279-304.

[6] Two notable exceptions: Abrams and Conrad (2017) who examined competing claims of credit and Melissa Rorie, *Communicating through Violence: An Application of Rational Choice Theory to Terrorist Claims of Responsibility*. University of Maryland, College Park (2008), who examined attributions of credit.

[7] Gary LaFree, Laura Dugan, and Erin Miller, *Putting Terrorism in Context: Lessons from the Global Terrorism Database*, Routledge (2015).

[8] See the GTD codebook for a description of the coding process for claims and attributions.

[9] Hoffman, "Why," 1-6; Ibid., "Reply," 18-19; Ibid., "Terrorism," 13; Rapoport, "To Claim," 11-17; Hoffman, "Voice," 615-626; Kearns, Conlon and Young, "Lying," 422-439; Abrahms and Conrad, "The Strategic," 279-304.

[10] Rorie, *Communicating.*

[11] Richard Sorrentino, Yang Ye and Andrew Szeto, "Uncertainty Management: To Fear of Not to Fear?," *Psychological Inquiry* 20 no. 4 (2009): 240-244.

[12] Ideally, we may see differences across four types of incidents: 1) claimed/unattributed where a group claims but there is not corroborating information; 2) claimed/attributed where a group claims credit and there is corroborating information; 3) unclaimed/unattributed where there is neither a claim nor information to link a group to the attack; 4) unclaimed/attributed where there is no claim but there is credible information connecting a group to the attack. Unfortunately, data are not coded in such a way to allow for these comparisons.

[13] Jenkins, *International,* 5261.

[14]Fromkin, "The Strategy," 688; Price, "The Strategy," 58; Crenshaw, "The Causes," 379; Ibid., "The Logic," 54; Kydd and Walter, "Sabotaging," 275; Lake, "Rational," 15-28; Kydd and Walter, "The Strategies," 50.

[15] Hoffman, "Terrorism," 8.

[16] Hoffman, "Voice," 616.

[17] GTD (2017).

[18] Kearns, Conlon and Young, "Lying," 426.

[19] Martha Crenshaw, "Counterterrorism," *Studies in Conflict and Terrorism* 24 no. 5 (2001): 329-337.

[20] Michael Findley and Joseph Young, "Fighting Fire with Fire? How (Not) to Neutralize an Insurgency," *Civil Wars* 9 no. 4 (2007): 378-401.

[21] Groups like ISIS may be less reliant on a specific population's support since they recruit globally. To account for this, I examine changes in claiming decisions over time and also exclude attacks claimed by or attributed to ISIS and Al Qaeda.

[22] Lake, "Rational," 20.

[23] Pluchinsky, "The Terrorism," 7.

[24] GTD (2017); Kearns, Conlon and Young, "Lying," 424.

[25] Harriet Agerholm, "Nice Attack: ISIS Claims of Responsibility Mocked by French People," *The Independent*, July 18, 2016.

[26] Sophie Chou, "There's No Evidence Linking the Las Vegas Attack to ISIS. So Why Did the Group Claim Responsibility?," *Public Radio International,* October 3, 2017; Jason Wilson, "New Documents Suggest Las Vegas Shooter was a Conspiracy Theorist – What We Know," *The Guardian*, May 19, 2018.

[27] Public Radio International, "ISIS Claims Responsibility for Philippines Casino Attack," June 1, 2017.

[28] Abrahms and Conrad, "The Strategic," 282.

[29] Kearns, Conlon and Young, "Lying," 425.

[30] For example, on March 6, 1988 the British SAS killed three men in Gibraltar. While there was not an attack or attempted attack that day, the British were tracking these men on suspicion of planning an attack, which the Provisional IRA confirmed. The British government quickly stated that there was a shoot-out and explosives were found. British media reported this account, and the Provisional IRA claimed the men the next morning. Shortly thereafter, the British government admitted that the men were unarmed and the car contained no explosives. Information asymmetries may have led to the Provisional IRA's decision to claim their men. Had the Provisional IRA known that their men were unarmed and the car contained no explosives at the time of the incident, perhaps they would not have claimed the operatives as

their own. And, perhaps the British would not have been so quick to admit that the men were unarmed had the Provisional IRA not claimed the men and admitted that they were planning an attack. Claiming made sense based on the (incorrect) information the Provisional IRA had at that moment, but it was quickly revealed to be a miscalculation and missed opportunity to cause harm to the British by denying responsibility. This is just one of many examples where the decision to claim or not resulted in a miscalculation. While it is beyond the scope of the current paper to delve into information asymmetries and miscalculations in claiming specific attacks, this presents an avenue for future research.

[31] Hoffman, "Terrorism," 9; Jenkins, *International Terrorism,* 5261; Kearns, Conlon and Young, "Lying," 424.

[32] GTD (2017).

[33] Kearns, Conlon and Young, "Lying," 424.

[34] Hoffman, "Voice," 623.

[35] Austin Wright, "Why," *Princeton Papers* (2011).

[36] Mia Bloom, "Palestinian Suicide Bombing: Public Support, Market Share, and Outbidding," *Political Science Quarterly* 119 no. 1 (2004): 61-88; Kydd and Walter, "The Strategies," 51.

[37] As Kydd and Walter (2006, p. 73) outline, extreme factions can splinter off and perpetrate terrorism to spoil a peace agreement or other negotiations. When this happens, there will be more groups (as a function of the split) and claiming would be less likely since neither the extreme faction nor the more moderate group has incentive to claim the attack. These situations are not common, and the present data do not allow them to be modeled.

[38] Hoffman, "Voice," 617; Kearns, Conlon and Young, "Lying," 431.

[39] Eric Min, "Taking Responsibility: When and Why Terrorists Claim Attacks," In *APSA Annual Meeting Paper* (2013); Kearns, Conlon and Young, "Lying," 431.

[40] Jeremy Allouche and Jeremy Lind, "Public Attitudes to Global Uncertainties: A Research Synthesis Exploring the Trends and Gaps in Knowledge," *Institute of Development Studies* (2010).

[41] Kearns, Conlon and Young, "Lying," 434.

[42] Hoffman, "Voice," 624.

[43] LaFree, Dugan and Miller, *Putting.*

[44] Pluchinsky, "The Terrorism," 7-8.

[45] Hoffman, "Voice," 615-626.

[46] Walter Enders and Todd Sandler, "Is Transnational Terrorism becoming More Threatening? A Time-series Investigation," *Journal of Conflict Resolution* 44 no. 3 (2000), 307-332; David Rapoport, "The Fourth Wave: September 11 in the History of Terrorism," *Current History* 100 no. 650 (2001), 419. As noted in Jeff Goodwin, "A theory of categorical terrorism." *Social Forces* 84, no. 4 (2006), 2027-2046, state terrorism may be more lethal than non-state terrorism, which is beyond the scope of the current project since the GTD only includes violence by non-state actors.

[47] Kearns, Conlon and Young, "Lying," 428.

[48] Chasdi, "Middle-East," 10.

[49] Pluchinsky, "The Terrorism," 7-8.

[50] Ibid.

[51] Kearns, Conlon and Young, "Lying," 428; Abrahms and Conrad, "The Strategic," 284.

[52] Min, "Taking."

[53] Military and diplomatic interests tend to be more secure than general governmental buildings or police officers who, by nature of their job, are easily accessible to the public. As such, I code attacks against military or diplomatic mission specifically, rather than governmental agents more broadly, since attacking military or diplomatic targets signals greater strength and thus should have a different impact on claiming decisions.

[54] Patrick Brandt and Todd Sandler, "What Do Transnational Terrorists Target? Has it Changed? Are We Safer?," *Journal of Conflict Resolution* 54 no. 2 (2010): 214-236.

[55] Chasdi, "Middle-East," 2.

[56] While some argue that an attack only qualifies as terrorism if it targets civilians, this is not the contention of this paper or the GTD. See Alex P. Schmid, *The Definition of Terrorism*, Routledge Handbooks Online (2010) for a full discussion of definitional issues for terrorism.

[57] Kearns, Conlon and Young, "Lying," 422-439; Abrahms and Conrad, "The Strategic," 279-304. Further, some populations have a higher tolerance for fatalities than others. At the group-level, this cannot be modeled without knowing the perpetrators to then identify their audience(s). At the state-level, cultures of violence can be modeled (see Chris Mullins and Joseph Young, "Cultures of Violence and Acts of Terror: Applying a Legitimation–habituation Model to Terrorism," *Crime & Delinquency* 58 no. 1 (2012), 28-56). Unfortunately, the datasets they used to create this indicator do not code past the late 2000s so it is not possible to recreate this measure.

[58] Abrahms and Conrad, "The Strategic," 285.

[59] Bloom, "Palestinian,": 66; Hoffman, "Voice," 618; Wright, "Why"; Min, "Taking."

[60] Bloom, "Palestinian,": 71.

[61] Pluchinsky, "The Terrorism," 7-10; Hoffman, "Voice," 615-626; Wright, "Why"; Kearns, Conlon and Young, "Lying," 422-439; Abrahms and Conrad, "The Strategic," 279-304.

[62] Kearns, Conlon and Young, "Lying," 426.

[63] Ibid, 429.

[64] Joseph Young and Laura Dugan, "Survival of the Fittest: Why Terrorist Groups Endure," *Perspectives on Terrorism* 8 no. 2 (2014); LaFree, Dugan and Miller, *Putting.*

[65] Hoffman, "Voice and Silence," 620.

[66] Abrahms and Conrad, "The Strategic," 292.

[67] GTD (2017).

[68] Nils Petter Gleditsch, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg and Håvard Strand, "Armed Conflict 1946-2001: A New Dataset," *Journal of Peace Research* 39 no. 5 (2002): 615-637.

[69] James Vreeland, "The Effect of Political Regime on Civil War: Unpacking Anocracy," *Journal of Conflict Resolution* 52 no. 3 (2008): 401-425.

[70] Monty Marshall, Keith Jaggers and Ted Gurr, "Polity IV," *College Park, Maryland: University of Maryland* (2004).

[71] The GTD also codes whether or not there are multiple or competing claims for an attack. While there may be unique attributes of attacks that increase the likelihood of multiple claims, the logic of claiming for the responsible group will be the same. Attacks with one or more claim are collapsed into a single category

[72] In the GTD, attacks are attributed either to a specific group or to a general ideology such as 'Protestant extremists.' I coded *attributed* in two ways: specific group (26.8%) and general ideology (30.1%). Models were estimated using both operationalizations of *attributed* attack

and the results are unchanged. Models where attacks were attributed to a specific group are reported in text.

[73] The correlation among these variables ranges from -0.07 to 0.38.

[74] I counted the number of specific groups who had a claimed or attributed attack in each country-year.

[75] The number of active groups shows high, positive skew (2.03) and kurtosis (6.82). From a theoretical perspective, on the lower-end of the spectrum each additional group should have a stronger impact on claiming behaviors than each additional group at the higher end. For example, the difference between 1 and 2 groups should have a greater impact than the difference between, say, 30 and 31 groups. From a statistical perspective, skewed variables can distort the mean and impact interpretation. Variable transformation, such as logging, is common practice, as it "dampens the impact of extreme high scores by squashing the right tail of the distribution" (Field, Andy. *An adventure in statistics: The reality enigma*. Sage, 2016, pp. 316). Models were also estimated with the raw number of active groups. Results show only one difference: in Models 1 and 3 only, the number of groups is no longer significantly related to claims or attributions while all variables' impact remained the same. Models were also estimated with a binary variable for the presence of any other groups in that country-year. The overall results were largely unchanged.

[76] The number of attacks in the previous year shows high, positive skew (1.43) and kurtosis (4.40). This variable was logged or models reported in text. Models were also estimated with the raw number of attacks in the previous year. Results show only one difference: in Models 11 and 12 only, the number of attacks in the previous year become significantly related to attributions while all variables' impact remained the same. Models were also estimated with the number of attacks in the previous country-month. The results were largely unchanged.

[77] To be included in the GTD, an incident must meet at least two of the following three criteria: 1) The act must be aimed at attaining a political, economic, religious, or social goal; 2) There must be evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) than the immediate victims; and, 3) The action must be outside the context of legitimate warfare activities. As such, some attacks against military are omitted if they occur in the context of legitimate warfare and one of the other two inclusion criteria are missing.

[78] I combine the following GTD target types into a single category: business, abortion related, airports & aircraft, educational institutions, food or water supply, journalists & media, maritime, NGO, other, private citizens & property, religious figures/institutions, telecommunication, tourists, transportation, unknown, and utilities.

[79] Armed conflict may also increase the likelihood of *false flag* attacks where a group attacks a target to make it look like their rival was responsible. See Kearns et al. (2014) for a full discussion of when *false flag* attacks are rational. Regardless, such attacks would not be claimed.

[80] LaFree, Dugan and Miller, *Putting.*

[81] Gleditsch, Wallensteen, Eriksson, Sollenberg and Strand, "Armed," 615-637.

[82] Vreeland, "The Effect," 412.

[83] Marshall, Jaggers and Gurr, "Polity IV."

[84] Vreeland, "The Effect," 412.

[85] I include bivariate models for different operationalizations of key variables. For example, I use both the raw number and the log for both number of groups and number of attacks in the

previous year. I also use the raw number, the raw number top-coded at 200, and the log for fatalities. I then use the number of fatalities top-coded at 200 in the interactions with target types (civilian and military), though results were the same with other operationalizations of fatalities. Cross-tabulations for binary independent variables are in the appendix.

[86] For the purposes of this paper, targets are disaggregated by general group—civilian or military. It is possible, even likely, that social identity of the victims also impacts claiming behaviors. For example, a Sunni group may be less likely to claim an attack against Shia target since both audiences can surmise who is responsible. At present, data are not fine-grained enough to test arguments about target identity beyond broad categories.

[87] Hoffman, "Voice," 621.

[88] Wright, "Why",

[89] Abrahms and Conrad, "The Strategic 292.

[90] Kydd and Walter, "The Strategies," 76.

[91] LaFree, Dugan and Miller, *Putting.*

[92] Kearns, Conlon and Young, "Lying," 428.

[93] Hoffman, "Voice," 619.

[94] LaFree, Dugan and Miller, *Putting.*

[95] Bloom, "Palestinian,": 66; Hoffman, "Voice," 618; Wright, "Why"; Min, "Taking."

[96] Min, "Taking."; Kearns, Conlon and Young, "Lying," 428; Abrahms and Conrad, "The Strategic," 293.

[97] LaFree, Dugan and Miller, *Putting.*

[98]Abrahms and Conrad, "The Strategic," 297.

[99] Kearns, Conlon and Young, "Lying ," 428; Abrahms and Conrad, "The Strategic," 295.

[100] Abrahms and Conrad, "The Strategic," 297.

[101] Joseph Young, "Measuring Terrorism," *Terrorism and Political Violence* (2016): 1-23.

[102] Suat Cubukcu and Brian Forst. "Measuring Terrorism." *Homicide Studies* 22, no. 1 (2018): 94-116.

Table 1. Summary of the Expected Impact of each Independent Variable on the Outcomes

Hypothesis	**Factor**	**Impact on Claiming**	**Impact on Attribution**
1)	⬆ Groups	a. ⬆	b. ⬇
2)	⬆ Recent Attacks	a. ⬇	b. no impact
3)	Fatalities	a. ∩	b. ∩
4)	Military/Diplomatic Target	a. ⬆	b. ⬆
5)	Fatalities* Civilian Target	a. ⬇	b. ⬆
6)	Fatalities* Military/Diplomatic Target	a. ⬆	b. ⬆
7)	Suicide Attack	a. ⬆	b. ⬆

Table 2. Descriptive Statistics by Attack

Variable	Frequency	Mean (SD)	Median	Range
Dependent Variables				
Unclaimed	57.2%	---	---	---
Claimed	16.0%	---	---	---
Attributed	26.8%	---	---	---
Independent Variables				
Groups: Number	---	10.7 (11.0)	7	1-55
Groups: Multiple	96.2%			
Recent Attacks: Last Year	---	860.0 (953.1)	533	1-3926
Recent Attacks: Last Month	---	87.1 (97.2)	53	0-503
Fatalities	---	2.0 (10.9)	0	0-1500
Target: Civilians	53.8%	---	---	---
Target: Military/Diplomatic	17.1%	---	---	---
Suicide Attack	5.5%	---	---	---
Control Variables				
ISIS claimed or attributed	4.3%	---	---	---
% of ISIS attacks claimed	40.4%	---	---	---
% of ISIS attacks attributed	59.6%	---	---	---
AQ claimed or attributed	1.9%	---	---	---
% of AQ attacks claimed	39.7%	---	---	---
% of AQ attacks attributed	59.5%	---	---	---
Armed Conflict: dummy	84.3%	---	---	---
XPolity	---	3.9 (3.1)	5	-5, 7

Table 3. Bivariate Multinomial Regression Models for Each Independent Variable Separately

	Claimed	Attributed	N
Number of Groups (log)	1.01 (0.01)	0.74*** (0.007)	101,274
Number of Groups (#)	1.00 (0.001)	0.98*** (0.001)	101,274
Attacks Last Year (log)	0.98*** (0.005)	0.88*** (0.004)	102,914
Attacks Last Year (#)	0.99*** (0.00001)	0.99*** (0.00001)	102,914
Fatalities (top-coded 200)	1.06*** (0.002)	1.05*** (0.002)	97,838
Fatalities (#)	1.06*** (0.002)	1.05*** (0.002)	97,838
Fatalities (log)	1.05*** (0.002)	1.03*** (0.001)	97,838
Fatalities (top-coded 200) ^{2}	0.99*** (0.00002)	0.99*** (0.00002)	97,838
Civilian Target	0.60*** (0.01)	0.88*** (0.01)	102,914
Military/Diplomatic Target	2.08*** (0.05)	1.76*** (0.03)	102,914
Fatalities (top-coded 200) * Civilian	0.93*** (0.004)	0.96*** (0.004)	97,838
Fatalities (top-coded 200)^2 * Civilian	1.00*** (0.00004)	1.00*** (0.00004)	97,838
Fatalities (top-coded 200) * Military/Diplomatic	1.06*** (0.007)	1.02*** (0.006)	97,838
Fatalities (top-coded 200)^2 * Military/Diplomatic	0.99*** (0.00005)	0.99† (0.000006)	97,838
Suicide Attack	3.83*** (0.12)	1.23*** (0.04)	102,914
XPolity	0.98*** (0.003)	1.00 (0.003)	85,477
Armed Conflict	0.50*** (0.01)	0.70*** (0.01)	102,914
ISIS or AQ	741.95*** (192.24)	618.78*** (160.16)	102,914

Bivariate multinomial logistic regression models.
Relative risk ratios are presented with clustered standard errors in parentheses.
†p < 0.10. *p < 0.05. **p <0 .01. ***p< 0.001.

Table 4. Claims and Attributions

	Claimed		Attributed	
	Model 1: Fatalities^2	**Model 2: Fatalities^2 & Top-Coded Fatalities at 200**	**Model 3: Fatalities^2**	**Model 4: Fatalities^2 & Top-Coded Fatalities at 200**
Number of Groups (log)	**1.35* (0.20)**	**1.36* (0.20)**	0.92 (0.25)	0.93 (0.25)
Attacks Last Year (log)	**0.83* (0.07)**	**0.83* (0.07)**	**0.79* (0.08)**	**0.79* (0.08)**
Fatalities	**1.15*** (0.01)**	**1.17*** (0.02)**	**1.12** (0.02)**	**1.14*** (0.02)**
Fatalities^2	**0.9998*** (0.00003)**	**0.999*** (0.0001)**	**0.9998*** (0.00002)**	**0.9994*** (0.0001)**
Civilian Target	0.89 (0.17)	0.90 (0.17)	1.06 (0.10)	1.04 (0.10)
Military/Diplomatic Target	**1.52** (0.24)**	**1.53** (0.24)**	**1.81** (0.38)**	**1.90** (0.38)**
Fatalities * Civilian	**0.92*** (0.02)**	**0.92*** (0.02)**	**0.94*** (0.02)**	**0.94*** (0.02)**
Fatalities^2 * Civilian	**1.00*** (0.0003)**	**1.00*** (0.0001)**	**1.00** (0.00004)**	**1.00** (0.0001)**
Fatalities * Military/Diplomatic	0.97 (0.03)	0.97 (0.03)	0.96 (0.03)	0.96 (0.03)
Fatalities^2 * Military/Diplomatic	**1.00*** (0.0003)**	1.00 (0.0002)	**1.00*** (0.00003)**	1.00 (0.0001)
Suicide Attack	**3.62*** (0.63)**	**3.52*** (0.62)**	1.13 (0.29)	1.30 (0.28)
XPolity	1.03 (0.04)	1.03 (0.04)	1.05 (0.04)	1.05 (0.04)
Armed Conflict	**0.42*** (0.10)**	**0.42*** (0.10)**	0.75 (0.27)	0.75 (0.26)
N	80,286	80,286	80,286	80,286

Multinomial logistic regression models. i.year coefficients and constants not reported.
Relative risk ratios are presented with clustered standard errors in parentheses.
$^{\dagger}p < 0.10$. *$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

Table 5. Comparing Any Claim v. No Claim & Claim or Attribution v. Unclaimed

	Any Claim		**Any Claim or Attribution**	
	Model 5: Fatalities^2 Full	**Model 6: Fatalities^2 & Top-Coded Fatalities at 200**	**Model 7: Fatalities^2 Full**	**Model 8: Fatalities^2 & Top-Coded Fatalities at 200**
Number of Groups (log)	**1.39**** **(0.15)**	**1.39**** **(0.15)**	1.06 (0.22)	1.06 (0.22)
Attacks Last Year (log)	0.92 (0.05)	0.91 (0.05)	**0.80*** **(0.07)**	**0.80*** **(0.07)**
Fatalities	**1.06***** **(0.02)**	**1.96***** **(0.02)**	**1.14***** **(0.02)**	**1.15****** **(0.02)**
Fatalities^2	**0.9999**** **(0.00002)**	**0.9995**** **(0.0001)**	**0.9998***** **(0.00002)**	**0.9993***** **(0.0001)**
Civilian Target	0.86 (0.17)	0.88 (0.16)	0.99 (0.11)	0.99 (0.11)
Military/Diplomatic Target	1.18 (0.16)	1.21 (0.16)	**1.75**** **(0.31)**	**1.75**** **(0.31)**
Fatalities * Civilian	**0.96**** **(0.01)**	**0.94***** **(0.02)**	**0.93***** **(0.02)**	**0.93***** **(0.02)**
Fatalities^2 * Civilian	**1.00**** **(0.0002)**	**1.00**** **(0.0001)**	**1.00**** **(0.00003)**	**1.00**** **(0.0001)**
Fatalities * Military/Diplomatic	0.99 (0.01)	0.98 (0.2)	0.96 (0.03)	0.96 (0.03)
Fatalities^2 * Military/Diplomatic	**1.00*** **(0.00002)**	1.00 (0.0002)	**1.00***** **(0.00003)**	1.00 (0.0001)
Suicide Attack	**3.45***** **(0.50)**	**3.26***** **(0.47)**	**2.15***** **(0.32)**	**2.11***** **(0.31)**
XPolity	1.01 (0.04)	1.01 (0.04)	1.04 (0.04)	1.05 (0.04)
Armed Conflict	**0.48**** **(0.14)**	**0.48**** **(0.14)**	**0.61*** **(0.14)**	**0.61*** **(0.14)**
N	80,286	80,286	80,286	80,286

Multinomial logistic regression models. i.year coefficients and constants not reported.
Relative risk ratios are presented with clustered standard errors in parentheses.
$^{\dagger}p < 0.10$. $^{*}p < 0.05$. $^{**}p < 0.01$. $^{***}p < 0.001$.

Table 6. Claims and Attributions with ISIS and Al-Qaeda Attacks Removed

	Claimed without ISIS/AQ Attacks		**Attributed without ISIS/AQ Attacks**	
	Model 9: Fatalities^2 Full	**Model 10: Fatalities^2 & Top-Coded Fatalities at 200**	**Model 11: Fatalities^2 Full**	**Model 12: Fatalities^2 & Top-Coded Fatalities at 200**
Number of Groups (log)	1.74† (0.53)	1.74† (0.53)	1.05 (0.36)	1.05 (0.36)
Attacks Last Year (log)	0.72† (0.14)	0.72† (0.14)	0.71† (0.14)	0.71† (0.14)
Fatalities	**1.16*** (0.03)**	**1.17*** (0.03)**	**1.12*** (0.02)**	**1.12*** (0.02)**
Fatalities^2	**0.999** (0.002)**	**0.999*** (0.002)**	**0.999*** (0.00009)**	**0.999*** (0.00009)**
Civilian Target	0.85 (0.19)	0.86 (0.19)	0.99 (0.11)	0.98 (0.11)
Military/Diplomatic Target	**1.54* (0.30)**	**1.56* (0.30)**	**1.89** (0.44)**	**1.90** (0.44)**
Fatalities * Civilian	**0.90*** (0.02)**	**0.90*** (0.02)**	**0.95* (0.02)**	**0.95* (0.02)**
Fatalities^2 * Civilian	**1.00** (0.0002)**	**1.00** (0.0002)**	**1.00** (0.00009)**	1.00 (0.0001)
Fatalities * Military/Diplomatic	0.97 (0.04)	0.97 (0.04)	0.95 (0.03)	0.95 (0.03)
Fatalities^2 * Military/Diplomatic	1.00 (0.003)	1.00 (0.003)	1.00 (0.0002)	1.00 (0.0002)
Suicide Attack	**2.76*** (0.51)**	**2.75*** (0.52)**	0.91 (0.30)	0.90 (0.29)
XPolity	1.02 (0.06)	1.02 (0.06)	1.05 (0.06)	1.05 (0.06)
Armed Conflict	**0.39** (0.13)**	**0.39** (0.13)**	0.93 (0.40)	0.93 (0.40)
N	75,176	75,176	75,176	75,176

Multinomial logistic regression models. i.year coefficients and constants not reported.
Relative risk ratios are presented with clustered standard errors in parentheses.
†p < 0.10. *p < 0.05. **p <0 .01. ***p< 0.001.

Figure 1. Fatalities and Claiming Decisions

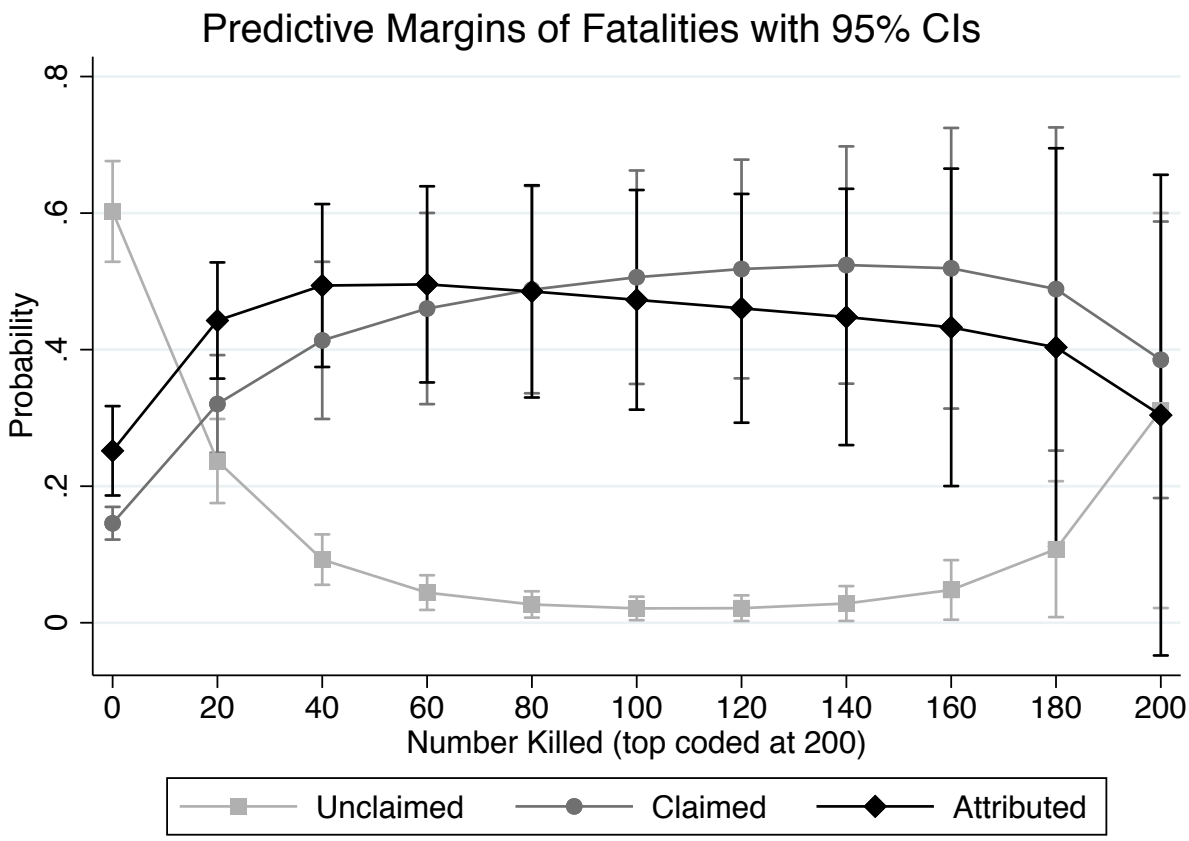
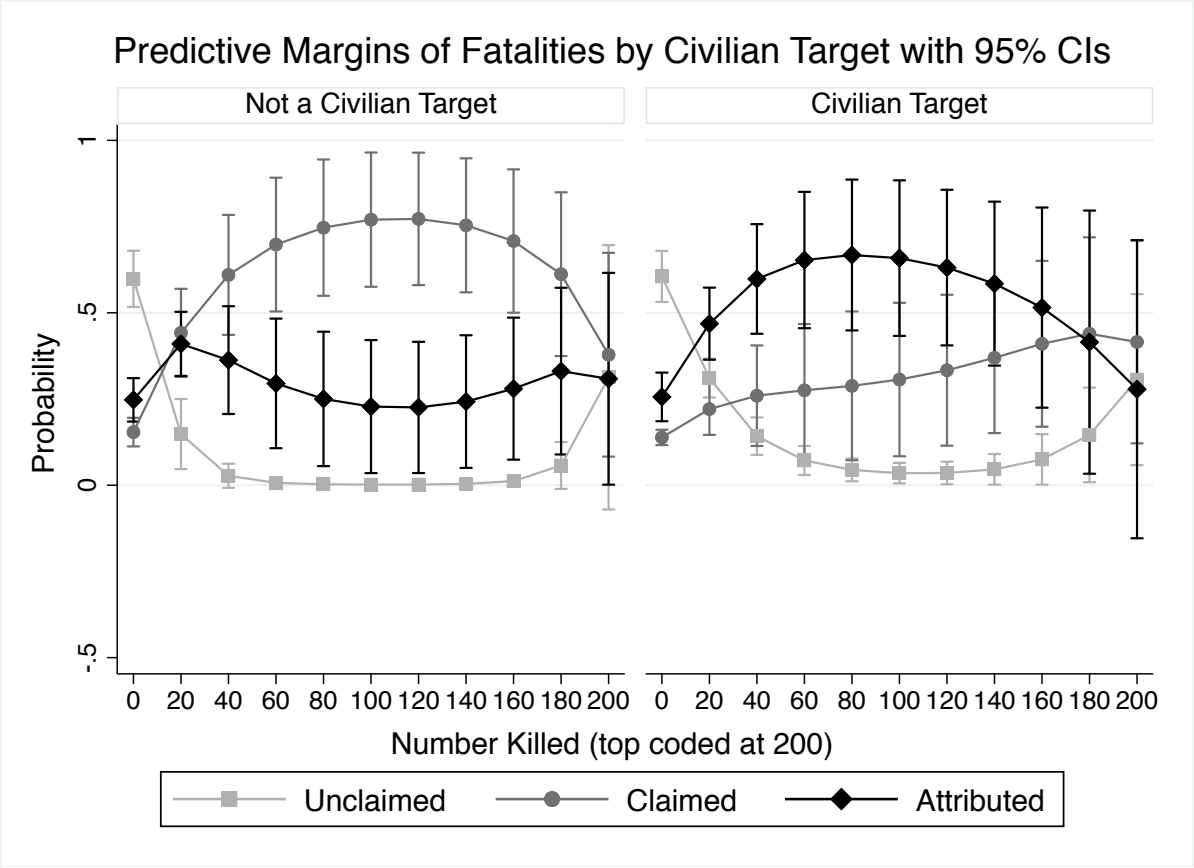


Figure 2. Fatalities and Claiming Decisions by Civilian Target



APPENDIX

Table A1. Cross Tabulations for Binary Independent Variables

		Claimed # (% in this column)	Attributed # (% in this column)	Unclaimed # (% in this column)
Civilian Target	**No**	9,266 (19.5%)	12,825 (27.0%)	25,464 (53.5%)
	Yes	7,238 (13.1%)	14,754 (26.7%)	33,367 (60.3%)
Military/Diplomatic Target	**No**	12,545 (14.7%)	21,731 (25.5%)	51,093 (59.8%)
	Yes	3,959 (22.6%)	5,848 (33.3%)	7,738 (44.1%)
Suicide Attack	**No**	14,338 (14.7%)	26,306 (27.1%)	56,601 (58.2%)
	Yes	2,166 (38.2%)	1,273 (22.5%)	2,230 (39.3%)
Armed Conflict	**No**	3,703 (22.9%)	5,126 (31.7%)	7,356 (45.4%)
	Yes	12,801 (14.8%)	22,453 (25.9%)	51,475 (59.4%)
ISIS or AQ	**No**	13,878 (14.4%)	23,820 (24.7%)	58,816 (60.9%)
	Yes	2,626 (41.0%)	3,759 (58.7%)	15 (0.2%)

Table A2. Claims and Attributions with Alternative Model Specifications

	Claimed			Attributed		
	Linear	**Quadratic**	**Logged Fatalities**	**Linear**	**Quadratic**	**Logged Fatalities**
Number of Groups (log)	**1.35* (0.20)**	**1.35* (0.20)**	**1.39* (0.20)**	0.92 (0.25)	0.92 (0.25)	0.94 (0.25)
Attacks Last Year (log)	**0.83* (0.07)**	**0.83* (0.07)**	**0.81* (0.07)**	**0.79* (0.08)**	**0.79* (0.08)**	**0.77* (0.08)**
Fatalities	**1.07*** (0.01)**	**1.08*** (0.01)**		**1.07*** (0.01)**	**1.07*** (0.01)**	
Fatalities^2		**0. 9998*** (0.000007)**			**0. 9998*** (0.00006)**	
Fatalities (log)			**1.87*** (0.11)**			**1.46*** (0.09)**
Civilian Target	0.79 (0.16)	0.79 (0.16)	0.99 (0.18)	0.99 (0.09)	0.99 (0.09)	1.01 (0.11)
Military/Diplomatic Target	**1.49* (0.23)**	**1.49* (0.23)**	**1.51* (0.26)**	**1.82** (0.33)**	**1.82** (0.33)**	**1.92** (0.40)**
Fatalities (log) * Civilian			**0.73*** (0.06)**			0.99 (0.08)
Fatalities (log) * Military/Diplomatic			0.96 (0.11)			0.92 (0.08)
Suicide Attack	**3.80*** (0.65)**	**3.79*** (0.65)**	**3.67*** (0.61)**	1.35 (0.31)	1.34 (0.30)	1.40 (0.30)
XPolity	1.03 (0.04)	1.03 (0.04)	1.03 (0.05)	1.05 (0.04)	1.05 (0.04)	1.05 (0.04)
Armed Conflict	**0.43*** (0.10)**	**0.43*** (0.10)**	**0.42*** (0.10)**	0.75 (0.27)	0.75 (0.27)	0.75 (0.26)
N	80,286	80,286	80,286	80,286	80,286	80,286

Multinomial logistic regression models. i.year coefficients and constants not reported.
Relative risk ratios are presented with clustered standard errors in parentheses.
†p < 0.10. *p < 0.05. **p <0 .01. ***p< 0.001.

Table A3. Comparing Any Claim v. No Claim & Claim or Attribution v. Unclaimed with Alternative Model Specifications

	Any Claim			**Any Claim or Attribution**		
	Linear	**Quadratic**	**Logged Fatalities**	**Linear**	**Quadratic**	**Logged Fatalities**
Number of Groups (log)	**1.39** (0.15)**	**1.39** (0.15)**	**1.42** (0.15)**	1.06 (0.22)	1.06 (0.22)	1.09 (0.22)
Attacks Last Year (log)	0.92 (0.05)	0.92 (0.05)	0.90† (0.05)	**0.80* (0.07)**	**0.80* (0.07)**	**0.78* (0.07)**
Fatalities	**1.02* (0.008)**	**1.02** (0.008)**		**1.07*** (0.01)**	**1.07*** (0.01)**	
Fatalities^2		**0.9999* (0.000005)**			**0.9998*** (0.00001)**	
Fatalities (log)			**1.63*** (0.10)**			**1.63*** (0.08)**
Civilian Target	0.80 (0.15)	0.80 (0.15)	0.99 (0.17)	0.91 (0.10)	0.91 (0.10)	1.00 (0.11)
Military/Diplomatic Target	1.19 (0.16)	1.19 (0.16)	1.21 (0.18)	**1.68** (0.27)**	**1.68** (0.27)**	**1.75** (0.33)**
Fatalities (log) * Civilian			**0.72*** (0.06)**			**0.87* (0.05)**
Fatalities (log) * Military/Diplomatic			0.95 (0.08)			0.93 (0.09)
Suicide Attack	**3.68*** (0.52)**	**3.63*** (0.51)**	**3.19*** (0.44)**	**2.24*** (0.33)**	**2.24*** (0.33)**	**2.24*** (0.33)**
XPolity	1.01 (0.04)	1.01 (0.04)	1.01 (0.04)	1.04 (0.04)	1.04 (0.04)	1.05 (0.04)
Armed Conflict	**0.48* (0.14)**	**0.48* (0.14)**	**0.48* (0.14)**	**0.61* (0.14)**	**0.61* (0.14)**	**0.61* (0.14)**
N	80,286	80,286	80,286	80,286	80,286	80,286

Logistic regression models. i.year coefficients and constants not reported.
†p < 0.10. *p < 0.05. **p <0 .01. ***p< 0.001.
Odds ratios are presented with clustered standard errors in parentheses.

Table A4. Claims and Attributions with ISIS and Al-Qaida Attacks Removed with Alternative Model Specifications

	Claimed without ISIS/AQ Attacks			**Attributed without ISIS/AQ Attacks**		
	Linear	**Quadratic**	**Logged Fatalities**	**Linear**	**Quadratic**	**Logged Fatalities**
Number of Groups (log)	1.74† (0.53)	1.74† (0.53)	1.85† (0.54)	1.05 (0.36)	1.05 (0.36)	1.07 (0.37)
Attacks Last Year (log)	0.73† (0.14)	0.73† (0.14)	0.71† (0.13)	0.71† (0.14)	0.71† (0.14)	0.69† (0.13)
Fatalities	**1.07*** (0.01)**	**1.08*** (0.01)**		**1.06*** (0.01)**	**1.07*** (0.01)**	
Fatalities^2		**0.999*** (0.00005)**			**1.00*** (0.00006)**	
Fatalities (log)			**1.87*** (0.13)**			**1.45*** (0.10)**
Civilian Target	0.74 (0.18)	0.74 (0.18)	0.97 (0.20)	0.94 (0.10)	0.94 (0.10)	0.96 (0.11)
Military/Diplomatic Target	**1.53** (0.30)**	**1.53* (0.30)**	**1.53* (0.32)**	**1.79** (0.39)**	**1.79** (0.39)**	**1.93** (0.46)**
Fatalities (log) * Civilian			**0.65*** (0.07)**			0.99 (0.10)
Fatalities (log) * Military/Diplomatic			0.96 (0.13)			0.88 (0.09)
Suicide Attack	**2.99*** (0.53)**	**2.93*** (0.53)**	**2.91*** (0.50)**	0.94 (0.32)	0.93 (0.30)	0.95 (0.29)
XPolity	1.02 (0.06)	1.02 (0.06)	1.02 (0.06)	1.05 (0.06)	1.05 (0.06)	1.05 (0.06)
Armed Conflict	**0.39** (0.13)**	**0.39** (0.13)**	**0.39** (0.13)**	0.93 (0.40)	0.93 (0.40)	0.92 (0.40)
N	75,176	75,176	75,176	75,176	75,176	75,176

Multinomial logistic regression models. i.year coefficients and constants not reported.
Relative risk ratios are presented with clustered standard errors in parentheses.
†p < 0.10. *p < 0.05. **p <0 .01. ***p< 0.001.

Figure A1. Fatalities and Claiming Decisions with ISIS and Al-Qaeda Attacks Removed

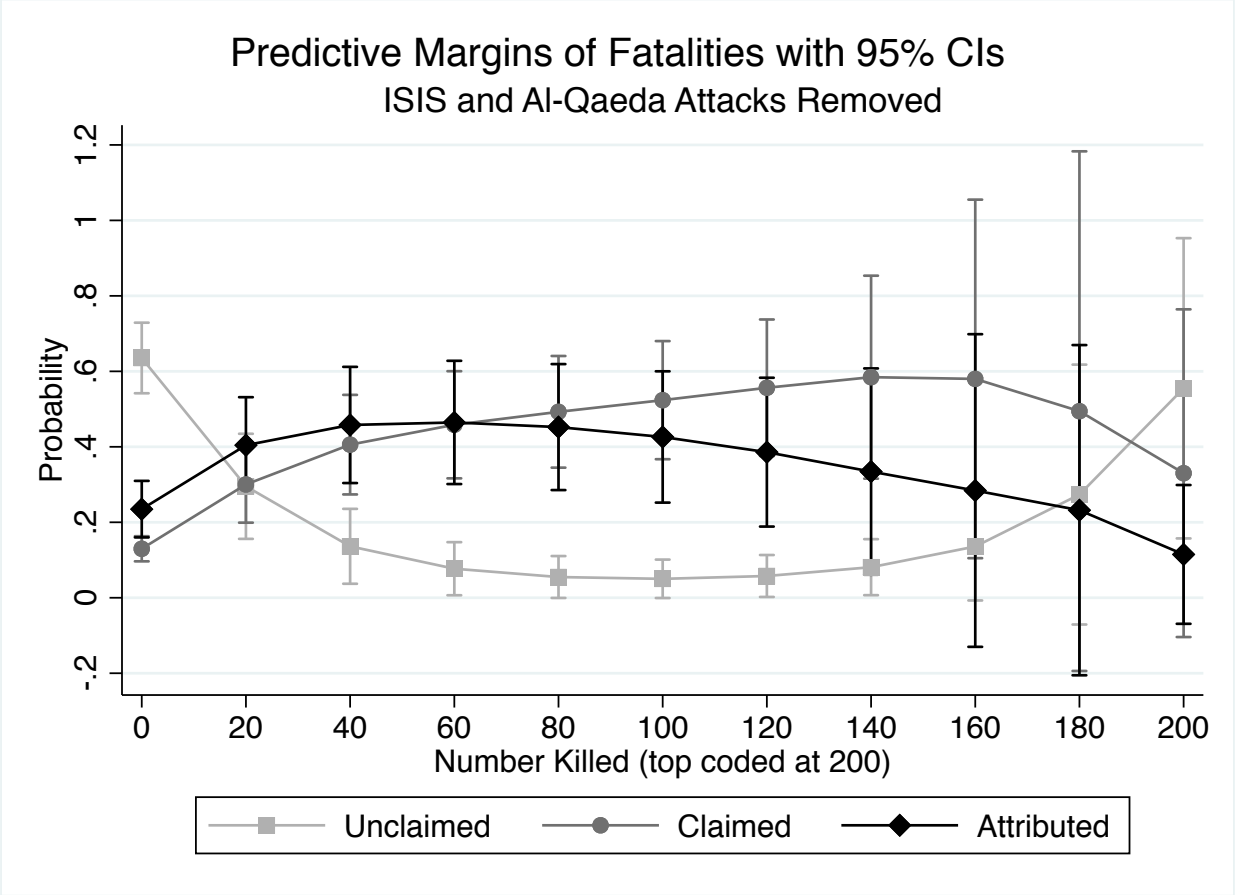
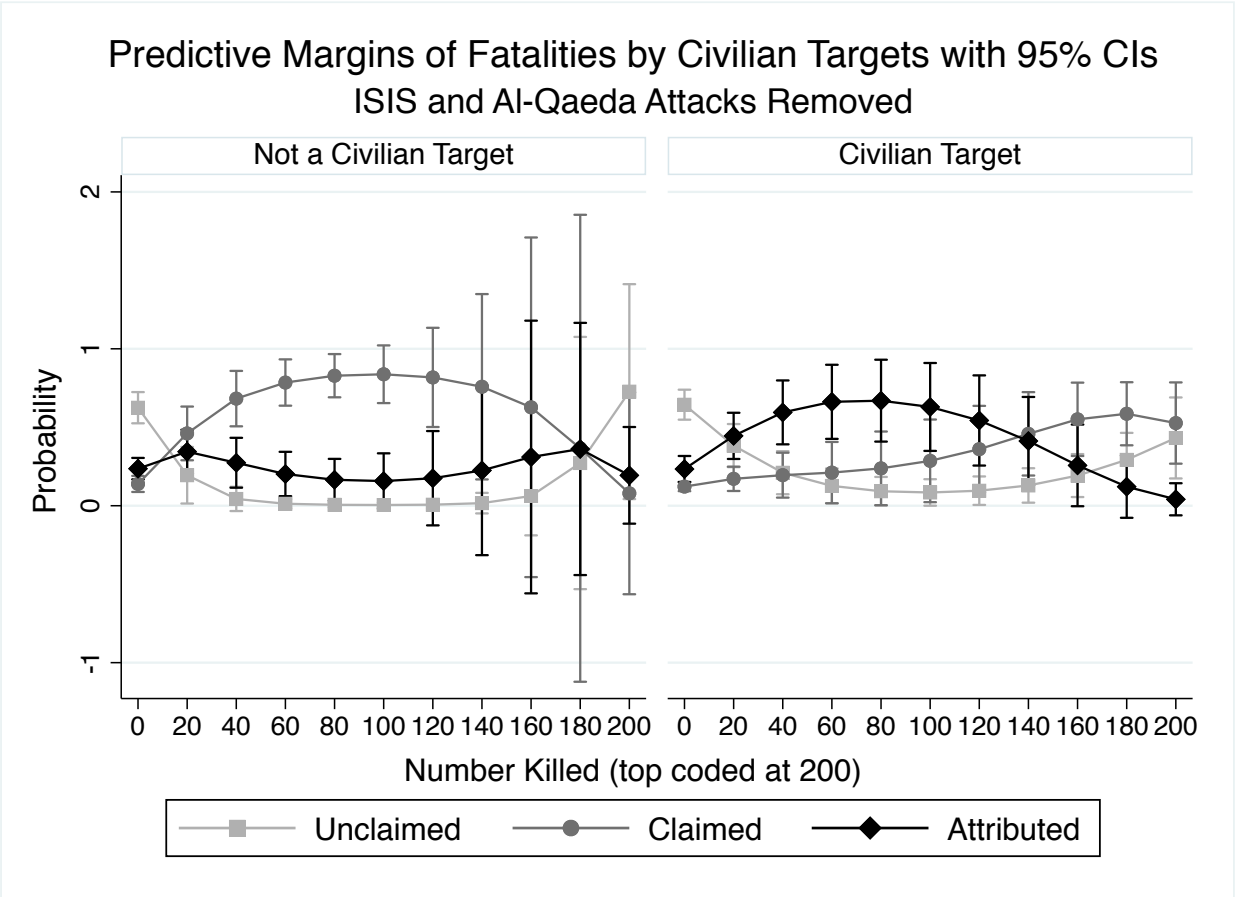


Figure A2. Fatalities and Claiming Decisions by Civilian Target with ISIS and Al-Qaeda Attacks Removed



APPENDIX

Table A1. Cross Tabulations for Binary Independent Variables

		Claimed # (% in this column)	Attributed # (% in this column)	Unclaimed # (% in this column)
Civilian Target	**No**	9,266 (19.5%)	12,825 (27.0%)	25,464 (53.5%)
	Yes	7,238 (13.1%)	14,754 (26.7%)	33,367 (60.3%)
Military/Diplomatic Target	**No**	12,545 (14.7%)	21,731 (25.5%)	51,093 (59.8%)
	Yes	3,959 (22.6%)	5,848 (33.3%)	7,738 (44.1%)
Suicide Attack	**No**	14,338 (14.7%)	26,306 (27.1%)	56,601 (58.2%)
	Yes	2,166 (38.2%)	1,273 (22.5%)	2,230 (39.3%)
Armed Conflict	**No**	3,703 (22.9%)	5,126 (31.7%)	7,356 (45.4%)
	Yes	12,801 (14.8%)	22,453 (25.9%)	51,475 (59.4%)
ISIS or AQ	**No**	13,878 (14.4%)	23,820 (24.7%)	58,816 (60.9%)
	Yes	2,626 (41.0%)	3,759 (58.7%)	15 (0.2%)

Table A2. Claims and Attributions with Alternative Model Specifications

	Claimed			Attributed		
	Linear	**Quadratic**	**Logged Fatalities**	**Linear**	**Quadratic**	**Logged Fatalities**
Number of Groups (log)	**1.35* (0.20)**	**1.35* (0.20)**	**1.39* (0.20)**	0.92 (0.25)	0.92 (0.25)	0.94 (0.25)
Attacks Last Year (log)	**0.83* (0.07)**	**0.83* (0.07)**	**0.81* (0.07)**	**0.79* (0.08)**	**0.79* (0.08)**	**0.77* (0.08)**
Fatalities	**1.07*** (0.01)**	**1.08*** (0.01)**		**1.07*** (0.01)**	**1.07*** (0.01)**	
Fatalities^2		**0. 9998*** (0.000007)**			**0. 9998*** (0.00006)**	
Fatalities (log)			**1.87*** (0.11)**			**1.46*** (0.09)**
Civilian Target	0.79 (0.16)	0.79 (0.16)	0.99 (0.18)	0.99 (0.09)	0.99 (0.09)	1.01 (0.11)
Military/Diplomatic Target	**1.49* (0.23)**	**1.49* (0.23)**	**1.51* (0.26)**	**1.82** (0.33)**	**1.82** (0.33)**	**1.92** (0.40)**
Fatalities (log) * Civilian			**0.73*** (0.06)**			0.99 (0.08)
Fatalities (log) * Military/Diplomatic			0.96 (0.11)			0.92 (0.08)
Suicide Attack	**3.80*** (0.65)**	**3.79*** (0.65)**	**3.67*** (0.61)**	1.35 (0.31)	1.34 (0.30)	1.40 (0.30)
XPolity	1.03 (0.04)	1.03 (0.04)	1.03 (0.05)	1.05 (0.04)	1.05 (0.04)	1.05 (0.04)
Armed Conflict	**0.43*** (0.10)**	**0.43*** (0.10)**	**0.42*** (0.10)**	0.75 (0.27)	0.75 (0.27)	0.75 (0.26)
N	80,286	80,286	80,286	80,286	80,286	80,286

Multinomial logistic regression models. i.year coefficients and constants not reported.
Relative risk ratios are presented with clustered standard errors in parentheses.
†p < 0.10. *p < 0.05. **p <0 .01. ***p< 0.001.

Table A3. Comparing Any Claim v. No Claim & Claim or Attribution v. Unclaimed with Alternative Model Specifications

	Any Claim			**Any Claim or Attribution**		
	Linear	**Quadratic**	**Logged Fatalities**	**Linear**	**Quadratic**	**Logged Fatalities**
Number of Groups (log)	**1.39** (0.15)**	**1.39** (0.15)**	**1.42** (0.15)**	1.06 (0.22)	1.06 (0.22)	1.09 (0.22)
Attacks Last Year (log)	0.92 (0.05)	0.92 (0.05)	0.90† (0.05)	**0.80* (0.07)**	**0.80* (0.07)**	**0.78* (0.07)**
Fatalities	**1.02* (0.008)**	**1.02** (0.008)**		**1.07*** (0.01)**	**1.07*** (0.01)**	
Fatalities^2		**0.9999* (0.000005)**			**0.9998*** (0.00001)**	
Fatalities (log)			**1.63*** (0.10)**			**1.63*** (0.08)**
Civilian Target	0.80 (0.15)	0.80 (0.15)	0.99 (0.17)	0.91 (0.10)	0.91 (0.10)	1.00 (0.11)
Military/Diplomatic Target	1.19 (0.16)	1.19 (0.16)	1.21 (0.18)	**1.68** (0.27)**	**1.68** (0.27)**	**1.75** (0.33)**
Fatalities (log) * Civilian			**0.72*** (0.06)**			**0.87* (0.05)**
Fatalities (log) * Military/Diplomatic			0.95 (0.08)			0.93 (0.09)
Suicide Attack	**3.68*** (0.52)**	**3.63*** (0.51)**	**3.19*** (0.44)**	**2.24*** (0.33)**	**2.24*** (0.33)**	**2.24*** (0.33)**
XPolity	1.01 (0.04)	1.01 (0.04)	1.01 (0.04)	1.04 (0.04)	1.04 (0.04)	1.05 (0.04)
Armed Conflict	**0.48* (0.14)**	**0.48* (0.14)**	**0.48* (0.14)**	**0.61* (0.14)**	**0.61* (0.14)**	**0.61* (0.14)**
N	80,286	80,286	80,286	80,286	80,286	80,286

Logistic regression models. i.year coefficients and constants not reported.
†p < 0.10. *p < 0.05. **p <0 .01. ***p< 0.001.
Odds ratios are presented with clustered standard errors in parentheses.

Table A4. Claims and Attributions with ISIS and Al-Qaida Attacks Removed with Alternative Model Specifications

	Claimed without ISIS/AQ Attacks			**Attributed without ISIS/AQ Attacks**		
	Linear	**Quadratic**	**Logged Fatalities**	**Linear**	**Quadratic**	**Logged Fatalities**
Number of Groups (log)	1.74† (0.53)	1.74† (0.53)	1.85† (0.54)	1.05 (0.36)	1.05 (0.36)	1.07 (0.37)
Attacks Last Year (log)	0.73† (0.14)	0.73† (0.14)	0.71† (0.13)	0.71† (0.14)	0.71† (0.14)	0.69† (0.13)
Fatalities	**1.07*** (0.01)**	**1.08*** (0.01)**		**1.06*** (0.01)**	**1.07*** (0.01)**	
Fatalities^2		**0.999*** (0.00005)**			**1.00*** (0.00006)**	
Fatalities (log)			**1.87*** (0.13)**			**1.45*** (0.10)**
Civilian Target	0.74 (0.18)	0.74 (0.18)	0.97 (0.20)	0.94 (0.10)	0.94 (0.10)	0.96 (0.11)
Military/Diplomatic Target	**1.53** (0.30)**	**1.53* (0.30)**	**1.53* (0.32)**	**1.79** (0.39)**	**1.79** (0.39)**	**1.93** (0.46)**
Fatalities (log) * Civilian			**0.65*** (0.07)**			0.99 (0.10)
Fatalities (log) * Military/Diplomatic			0.96 (0.13)			0.88 (0.09)
Suicide Attack	**2.99*** (0.53)**	**2.93*** (0.53)**	**2.91*** (0.50)**	0.94 (0.32)	0.93 (0.30)	0.95 (0.29)
XPolity	1.02 (0.06)	1.02 (0.06)	1.02 (0.06)	1.05 (0.06)	1.05 (0.06)	1.05 (0.06)
Armed Conflict	**0.39** (0.13)**	**0.39** (0.13)**	**0.39** (0.13)**	0.93 (0.40)	0.93 (0.40)	0.92 (0.40)
N	75,176	75,176	75,176	75,176	75,176	75,176

Multinomial logistic regression models. i.year coefficients and constants not reported.
Relative risk ratios are presented with clustered standard errors in parentheses.
†p < 0.10. *p < 0.05. **p <0 .01. ***p< 0.001.

Figure A1. Fatalities and Claiming Decisions with ISIS and Al-Qaeda Attacks Removed

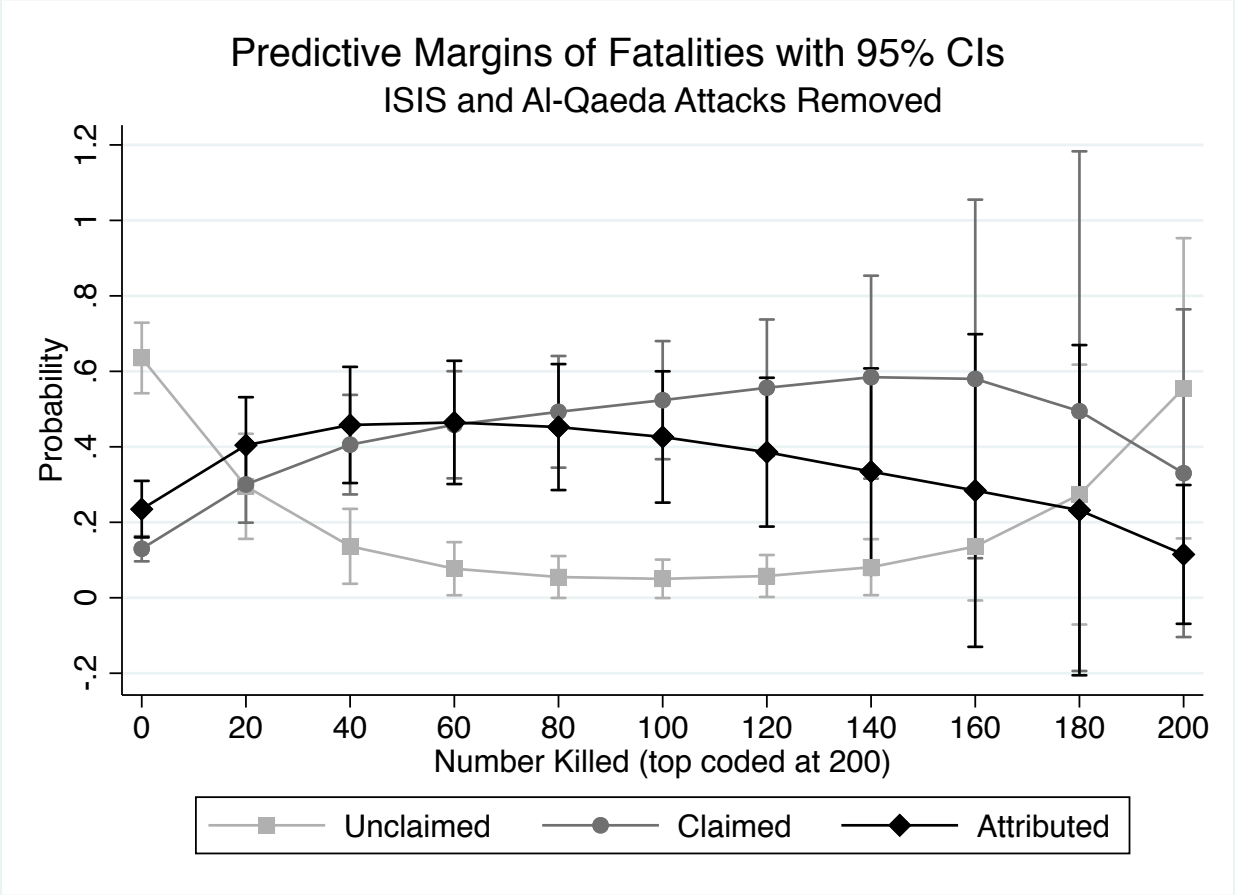


Figure A2. Fatalities and Claiming Decisions by Civilian Target with ISIS and Al-Qaeda Attacks Removed