# Live and Let Die: Terrorist Group Lethality, Survival, and Success

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**ABSTRACT**

The terrorism field has long been embroiled in a debate over whether terrorism is an effective coercive tactic. Some argue that terrorism is effective because groups choose the best method available in order to achieve their goals, while others argue that terrorists do not achieve their long-term goals. Missing from this debate is the distinction between key organizational attributes that may benefit or hinder success. This study examines organizational lethality as one such attribute and examines the impact that it has on group success. I show that there is a nonlinear relationship between lethality, success, and failure. Moderate levels of lethality are where groups are most likely to see success, but this is also when they are most likely to be forcibly eliminated.

## 1. Introduction

Scholars have long debated over whether terrorism is effective. Many scholars argue that it is a profitable tactic because groups are so weak relative to the government that terrorism is a way for them to send a costly signal. In other words, terrorists are utility maximizers, choosing the best option available to them given their resources and strength (e.g. Bueno de Mesquita 2007; Caplan 2006; Gaibulloev and Sandler 2014; Lapan and Sandler 1993; Sandler 2018; Sandler, Tschirhart, and Cauley 1983). In contrast, some scholars point out that arguments of success are flawed, based on formal modeling with little empirical evidence outside of narrow case studies (Abrahms 2006, 2012; Acosta 2014). Much of the debate stems from differing conceptualizations of success. There is a distinction between process goals, which are short term strategic or tactical goals, and outcome goals, which refers to the overarching aim of the terrorist

group (Acosta 2014; Abrahms 2012; Cronin 2009; Merari 2016). This study chooses the latter — outcome goals — when exploring the success of terrorist groups.

A second reason for conflicting findings about the effectiveness of terrorism is that terrorist groups differ from one another, and when studying their success or lack thereof, internal organizational factors should be considered. This study adds to the literature by examining the lethality of terrorist groups, asking whether the number of fatalities that a group causes impacts whether the group is able to achieve its goals. I study organizational lethality's relationship to success by examining the ways that groups end. This is appropriate because my argument is about success in overall goals as opposed to success in the form of strategies along the way to end goals. Ending due to victory is a clear sign that a group has achieved its goals, while ending prematurely implies that a group was unable to meet its goals through the use of terrorism.

Some have noted that higher lethality may help a group survive, but that survival does not denote overall success (Acosta 2014; Fortna 2015). Building off of this, I argue that there exists a tradeoff between lethality and legitimacy. On one hand, killing in high numbers can increase recruitment and resources, which are essential to extending group longevity and capacity, and killing in high numbers also signals that a group is willing to cause death and destruction until it achieves its goals. On the other hand, as groups become more lethal, doubt will be cast upon their ability to commit to restraint in the future, and additionally will increase target resolve to eliminate the group. I therefore theorize a U-shaped relationship between both organizational lethality and success and organizational lethality and failure. At low levels of lethality, groups have not proven themselves a threat, so governments have little reason to negotiate or cede to them, but also may not be as motivated to eliminate them. Thus, at low lethality, groups may survive, but will not necessarily be successful. At high levels of lethality, governments will be motivated to eliminate the groups rather than negotiate, but groups may be strong enough to avoid attempts at elimination.

This article's contribution to the literature is twofold. First, it adds to the growing literature on the effectiveness of terrorism. While many pieces have examined specific modes of attack such as suicide attacks, or terrorism in specific situations such as civil wars, little work has been done to examine the way that lethality as an organizational

characteristic affects success. Second, this paper contributes to the literature on terrorist group survival and failure. Some scholars have examined the different ways that groups end (e.g. Carter 2012; Gaibulloev and Sandler 2014; Gaibulloev, Hou, and Sandler 2020; Olzak 2022; Piazza and Piazza 2020), but the majority of studies of group survival focus only on whether groups end, as opposed to examining how they end. This is an important distinction to make because the processes leading to different types of endings may be distinct from one another.

The article continues with a review of the debate over the effectiveness of terrorism and different definitions of success. I then theorize about the ways that organizational lethality affects group success and failure, specifically theorizing about the ways that terrorist groups end because the way that a group ends indicates whether its goals were achieved. This is followed by the research design and analysis. I end by discussing the implications of the results.

## 2. Terrorism and Effectiveness

Many terrorism scholars agree that terrorism is rational: organizations have goals and believe terrorism is the best way for them to achieve these goals, given the constraints that they face (e.g. Caplan 2006; Crenshaw 1981; Kydd and Walter 2006; Sandler, Tschirhart, and Cauley 1983; Sandler 2018). Groups often turn to terrorism as a tactic when they are too weak relative to the government to be able launch conventional warfare; terrorism is a way to send a signal at little cost to the group (Crenshaw 1981; Kydd and Walter 2006). Terrorism is therefore considered to be a costly signal that demonstrates commitment and the ability to cause destruction until achieving a desired goal, and terrorist groups even switch between different strategies depending on their long-term goals (Kydd and Walter 2006).

With a foundation in the literature agreeing that terrorism is rational, research has turned to theorizing about what makes terrorist organizations successful. For example, Overgaard (1994) uses a formal model to show that due to governments having incomplete information about the capacity of terrorist groups, the initial attacks that terrorist groups commit should be destructive enough that the group is able to signal

that they have high resource levels — regardless of their actual resource levels. Lake (2002) builds upon Fearon (1995) in order to present a theory that terrorism is used to provoke the target to respond disproportionately or to gain support for goals. These are some of the strategies detailed by Kydd and Walter (2006), and Kydd and Walter (2002) use both formal modeling and a case study of the Israel-Palestine peace process to show the conditions in which terrorists are able to spoil peace. In the context of civil wars in Africa, Thomas (2014) finds that rebel groups that commit more terrorist attacks are more likely to be included in negotiations and acquire concessions. Merari (2016) points out that even if terrorists have been unable to achieve their full goals, they have occasionally been able to achieve smaller successes, such as gaining support and international legitimacy, drawing attention to grievances, and acquiring partial concessions.

However, some scholars contend that terrorism is ineffective and they argue that many studies about the success of terrorism use exclusively formal modeling or case studies limited to few countries. A study of 28 terrorist organizations found that they are rarely able to achieve their policy goals, and moreover, that targeting civilians makes governments even less likely to grant concessions (Abrahms 2006). These findings are reiterated in a later study of 125 violent groups. In this later study, Abrahms (2012) acknowledges that extant research finds terrorism to be an effective tactic for intermediate goals like obtaining funding or spoiling peace processes, but he maintains that terrorism is not an effective tactic for achieving overall goals and finds once again that governments are less likely to grant concessions when attacks target civilians. Furthermore, Jones and Libicki (2008) argue that few groups end due to achieving their goals, and the ones that do tend to have narrow policy-oriented goals. Even research on militant groups overall — i.e. violent subnational organizations including but not limited to organizations that use terrorism — have found that violent groups are able to coerce partial concessions but rarely achieve broader, overall goals (Acosta 2014). Moreover, extant research examines the use of terrorism as compared to other tactics, such as conventional military attacks. In contrast to Thomas (2014), Fortna (2015) finds that in the context of civil wars, rebel groups that use terrorism are less likely to achieve their goals, and in fact, because terrorism is traditionally thought of as a

weapon of the weak, the use of terrorism in civil wars signals weakness.

Much of the debate over whether terrorism is effective comes from differing conceptualizations of success. Militant organizations have end goals such as regime change, political change, self-determination, or even maintaining the status quo. Whether these are called ultimate goals (Kydd and Walter 2006) or outcome goals (Abrahms 2012; Acosta 2014), research identifies these as the overall, long-term goals that militant groups aim for. Some conceptualize success only as achieving these outcome goals and argue that terrorism is not successful given that groups rarely achieve these ultimate aims (e.g. Abrahms 2006, 2012; Acosta 2014). Others conceptualize success or partial success as achieving intermediate goals, such as extending longevity or expanding capacity. Crenshaw (1981), for instance, agrees that that groups have ultimate goals but also discusses achieving short-term objectives, including increasing support for their cause, disrupting the government, or provoking the government into a disproportionate response. Merari (2016) discusses partial success, including support from a constituency, gaining legitimacy, and achieving partial concessions. Others point out that survival is a process goal but the factors leading to survival do not necessarily lead to overall or even partial success (Acosta 2014; Fortna 2015; Gaibulloev, Hou, and Sandler 2020).

## 3. Lethality and Effectiveness

Missing from the debate over the effectiveness of terrorism is the fact that there are organizational distinctions between groups. These differences may lead some groups to be more successful than others. In this paper I examine lethality — fatalities caused by terrorist organizations — as a distinguishing organizational aspect. Many extant studies focus on lethality as a key dependent variable, studying which organizational aspects make some terrorist groups deadlier than others (Alakoc, Werner, and Widmeier 2023; Asal et al. 2015; Asal and Rethemeyer 2008; Carson and Turner 2022; Levy 2021; Piazza 2009; Piazza and LaFree 2019), whether having allies increases lethality (Asal, Phillips, and Rethemeyer 2022; Horowitz and Potter 2014), and whether groups are deadlier than lone wolf actors (Phillips 2017; Turner, Chermak, and Freilich 2023).

Other studies examine the effect of high-casualty modes of attack (Acosta 2014, 2016; Fortna 2015; Mroszczyk 2019; Pape 2003; Thomas 2021) but have not examined overall organizational lethality. Lethality has been a characteristic important enough to explore in its own right as a dependent variable, so it should also be explored as an important explanatory variable when examining group success.

The study explores lethality regardless of attack modes or targets. A single highly fatal attack can send a strong signal, but I depart from examining individual attacks. Instead, I theorize that the fatalities that a group has caused overall, regardless of the fatality of each individual attack, will also send a strong signal. However, such a signal is not necessarily advantageous. Just as studies of different types of high-lethality attacks have found that high casualties do not always work in favor of the group, I expect overall organizational lethality to have similar effects on group success.

I draw from a number of studies that have examined various modes of high-lethality attacks, even if they do not study organizational lethality directly. One of the most lethal strategies that groups can use is suicide attacks (Mroszczyk 2019; Nilsson 2018; Rosendorff and Sandler 2010). Suicide attacks aim to send an extremely costly signal by killing in high numbers (Hoffman and McCormick 2004; Pape 2003). However, the effectiveness of this tactic is ambiguous. Pape (2003), for example, claims that half of suicide attacks are successful in achieving goals, but (Moghadam 2006) refutes this, arguing that the success rate is closer to 24 percent. Suicide attacks can aid terrorist organizations in achieving intermediate goals, such as extending survival, demonstrating a dedication to a cause in order to gain support from a base or recruit new members, increasing prestige among other terrorist groups (Acosta 2016; Bloom 2005; Hoffman and McCormick 2004; Rosendorff and Sandler 2010), but success with long-term goals is rarer. Even the suicide attack campaigns that have achieved broader goals saw only limited policy changes or removal of troops from areas of low importance to the target (Pape 2003). Moreover, the use of suicide attacks can cause a backlash effect in which the government becomes even more resolved to eliminate the group and withstand its demands (Acosta 2014). Such high levels of violence also bring about a credible commitment problem, in which a group may not be able to credibly commit to end violence if given a compromise (Acosta 2014).

A large amount of existing literature in interstate conflict is devoted to the commitment problem, which is the idea that violence or the threat of violence is a strong coercive signal but at the same time leads opponents to doubt an adversary state's commitment to restraint in the future. States use threats in order to coerce an adversary, but states must also be able to commit to restraint if the adversary complies, and moreover, the adversary has to believe this commitment to restraint in order to comply. However, states have reasons to renege in the future, such as the advantage gained by striking first or changes in the distribution of power (Debs and Monteiro 2014; Fearon 1995; Powell 2006). This leads to difficulties committing to restraint in the future, and targets, in turn, are less likely to give in to coercion if they expect that the current adversary will challenge them in the future (Sechser 2018). Moreover, states are more likely to expect a future challenge from an opponent and reject coercive attempts if the opponent has a history of aggression and the ability to project military power (Sechser 2018), which further contributes to the idea that sending a stronger signal may not always work in favor of the sender. In short, states with greater power are better able to signal that their threats are credible, but at the same time, greater power diminishes the ability to credibly assure their restraint if the adversary complies (Debs and Monteiro 2014; Cebul, Dafoe, and Monteiro 2021).

The commitment problem is not unique to interstate conflict. Unlike with interstate conflict, negotiations in civil wars require demobilization, which leaves either side more vulnerable and unable to enforce a peace treaty (Walter 1997, 2002). When the state is left stronger, it cannot credibly commit to abiding by a peace treaty with a more vulnerable rebel group (Fearon 2004; Walter 1997, 2002). In ethnic conflicts, changes to the ethnic balance of power or changes to the beliefs of one group about the others create a commitment problem because one side is left unable to enforce a treaty and may choose to fight rather than wait while the other group gains more power (Lake and Rothchild 1996). The costly signal sent by acts of terrorism can be less than effective, just as with interstate conflict and civil wars. By committing attacks that are highly lethal, terrorist groups strengthen their signal of resolve, but they also cast doubt upon their commitment to restraint if they were to be given concessions (Abrahms 2013). Insurgents embroiled in civil wars have even targeted civilians, and the effects of this

type of violence are not straightforward, with negotiations achieved from moderate levels of civilian killing (Wood and Kathman 2014), but a decrease in the likelihood of negotiations or concessions when committing high-casualty, indiscriminate attacks on civilians (Fortna 2015; Wood and Kathman 2014).

To evaluate the effect that the lethality of terrorist organizations has on their success, this article theorizes about the way that groups end in order to capture success. Definitive endings such as ending by military or police force or ending by splintering show that a group ended prematurely without achieving its overall goals, while ending by victory or by joining the political process indicates success or partial success. In using group endings to denote success, I remain indifferent with regard to intermediate goals, accepting that organizations may act rationally in the short term in order to achieve intermediate goals even if such actions do not lead to success in outcome goals. This paper, however, focuses exclusively on outcome goals. Studying success by examining the way that groups end has precedent in Jones and Libicki (2008), who argue that terrorism is not an efficient coercive tactic because groups rarely end in victory.

### *3.1. Success and Partial Success*

Some terrorist organizations voluntarily end when they achieve victory in their ultimate goals, signifying a clear success. A clear example of victory is the African National Congress, which achieved its explicit goal of ending apartheid in South Africa (Cronin 2009). I theorize that victory is most likely to happen when organizations cause a moderate level of lethality. As demonstrated by Overgaard (1994), when governments have little information about a group, the group's attacks should be destructive enough to signal that they can and will attack again. Following this logic, terrorist organizations that cause few overall fatalities send a signal that they are either unable or unwilling to cause a great deal of destruction, making them less likely to be able to coerce target governments. The coercive signal becomes stronger as the number of fatalities caused by a terrorist organization increases. Just as moderate levels of civilian killing in civil wars can lead to concessions (Wood and Kathman 2014), I theorize that a moderate level of overall organizational lethality should increase the likelihood of victory.

The coercive effectiveness, however, will not necessarily hold at high levels of lethality. Different types of high-lethality attacks have caused a backlash, with greater destruction leading to greater resolve to forcefully terminate a group and a lower likelihood of granting concessions (Acosta 2014; Fortna 2015; Wood and Kathman 2014), and I expect overall organizational lethality to function in a similar manner to these individual high-lethality attacks. Additionally, the commitment problem appears because high organizational lethality can undermine a terrorist organization's ability to commit to future restraint if granted concessions. In interstate conflict, targets expect future challenges from militarily strong states with a history of aggression and will be less likely to give in to coercion from these states (Sechser 2018). In civil wars, insurgents have similar issues attaining their goals because their commitment to a peace agreement is less than credible (Walter 1997). Likewise, I expect terrorist organizations to face the same challenges as their lethality grows.

Terrorist groups can also end by voluntarily joining the political process. Joining the political process involves demobilizing and adopting nonviolent means, which includes cooperation with the government as governments negotiate and offer concessions or a peace treaty (Crenshaw 1996; Jones and Libicki 2008). I consider this to be a partial victory because within this process, groups do gain concessions and moreover end voluntarily instead of continuing the conflict or being policed out of existence. The Free Aceh Movement (GAM) in Indonesia is an example of partial victory. This was a separatist movement in Indonesia, and between 1975 and 2005, the conflict killed over thirty thousand people while the people of Aceh faced major human rights violations (Jeffery 2021). Several attempts at negotiations were unsuccessful but by the end of 2004, circumstances had changed and after several rounds of negotiations, GAM and the government signed the Helsinki Memorandum of Understanding in 2005 (Jeffery 2021; Stange and Patock 2010). With this memorandum, GAM was able to establish Aceh as an autonomous region and secure voting rights for the people of Aceh (Stange and Patock 2010). This is distinct from the African National Congress, which joined the political process only after achieving their explicit goal of ending apartheid, whereas although GAM achieved rights for the people of Aceh, they did not achieve their explicit goal of becoming an independent state.

There is little reason to expect that joining the political process will function much differently than groups ending by victory. Governments will have little reason to negotiate with a group that is unable to cause large amounts of destruction, and on the other end, groups that cause a great deal of destruction and loss of life delegitimize themselves by bringing about a commitment problem in which they cannot credibly commit to future restraint. The problem of legitimacy is especially apparent when considering joining the political process, because as lethality increases, it becomes more likely that groups alienate political allies and erode support from would-be constituents. Thus, it is at moderate levels of lethality that governments should be most likely to offer negotiations that lead to a group renouncing violence and adopting legitimate means. I therefore expect a curvilinear, inverted U-shaped relationship between organizational lethality and ending by victory or politics, leading to the following hypothesis:

> $H1$ : *Terrorist groups that exhibit moderate levels of lethality are more likely to end by achieving victory or joining the political process.*

### *3.2. Failure*

The most overt way that a terrorist organization can fail is if it is terminated by force. This can happen through police efforts or due to action by the military. Police gather intelligence about group activities, infiltrate groups, and arrest members. The state can even cut off a terrorist group from its base of support by enacting laws that make it difficult to raise funds or recruit members (Jones and Libicki 2008). The military can arrest or kill strategically important members of terrorist groups, and constant pursuit of a group — even if that pursuit is initially unsuccessful — forces a group to drain its resources while trying to evade capture (Cronin 2009; Jones and Libicki 2008). For example, Aum Shinrikyo in Japan, was defeated as Japanese police and intelligence conducted surveillance, infiltrated the group, arrested hundreds of members, and created laws that essentially destroyed the group's ability to maintain funding (Jones and Libicki 2008).

This paper expects that states will be more likely to use force against groups that are capable of causing great loss of life. Targeting civilians as opposed to combatants

can bolster a state's resolve to eliminate a group (Abrahms 2013), and high lethality attacks such as suicide attacks further strengthen this resolve (Acosta 2014). As lethality increases, the threat posed by a group increases, leading to intensified state response.

At the same time, however, although highly lethal attacks have been found to increased target resolve, they have also led to increased survival of groups (Acosta 2014, 2016; Blomberg, Engel, and Sawyer 2010) or a lower likelihood of being forcefully eliminated (Carter 2012). The willingness to die for a cause shows potential supporters that a group is completely committed to achieving a cause, which can lead to increased support from a constituency (Acosta 2016). Suicide attacks have been used to gain or maintain relevance and achieve connections with other groups using the same tactic, leading to increased support and resources (Acosta 2016). Furthermore, civil wars in which groups use indiscriminate high-casualty attacks against civilians last longer than those in which groups do not use this type of tactic (Fortna 2015), further suggesting that high lethality serves to increase survival.

Thus, there are two processes at play in determining group termination by force. First, low lethality poses less of a threat, rendering the necessity of elimination less urgent. As lethality increases, the threat becomes more destructive and more imminent, leading states to intensify efforts to eliminate the group. Second, as group lethality increases, even though target resolve increases, the group's ability to survive also increases, and I theorize that at the highest lethality, the group will have the capacity to withstand target efforts to eliminate it. Therefore, I expect groups to be most likely to be terminated by force at intermediate levels of lethality. This is where I expect that a state's repressive response has increased and the group has not yet attained the capacity to evade the state response. I expect a curvilinear, inverted U-shaped relationship between organizational lethality and ending by force, leading to the following hypothesis:

> $H2$ : *Terrorist groups that exhibit moderate levels of lethality are more likely to end by being forcibly terminated.*

Terrorist groups can also end due to splintering, or internal dissolution. Groups splinter

when members defect in order to join an existing group, create a new faction, or leave violence altogether (Jones and Libicki 2008; Carter 2012). If enough members defect, the original group ceases to exist.[1] This paper considers ending due to splintering to be a type of failure, as it indicates failure to pursue a common goal (Gaibulloev and Sandler 2014).

Infighting is one reason that groups splinter; members of a terrorist organization may disagree about targets, tactics, or ideology (Cronin 2009; Perkoski 2019). The 1920 Revolution Brigades, for example, ceased to exist when it split into two separate groups, Hamas of Iraq and Twentieth Revolution Brigades. Noting that the assumption that splinter groups are more violent than their original organization has been untested, Robinson and Malone (2024) argue that splinter groups are actually weaker and less violent than the original group. They argue that, due to the risk involved in creating a new group, dissatisfied factions of a violent group will exhaust alternate options for addressing grievances before splintering off into a new group, and alternate options are least likely to be available to them when the original group is high-capacity and more lethal. They find that splinter groups are less violent than the original group.

Beyond internal dynamics that can lead to dissolution, the group also may take actions that cause it to lose support from a constituency. Whereas groups have in some cases committed high lethality attacks in order to gain popular support (Acosta 2016), in other circumstances high lethality attacks can have the opposite effect of alienating the broader base of support. For example, German and Italian left-wing groups engaged in violence in order to maintain cohesion internally, but they lost external support because the broader constituencies did not approve of such high levels of violence (Cronin 2009). As the support base dissolves, the group dissolves. The discussion on splintering leads to the following hypothesis:

> *H*3 : *As organizational lethality increases, the likelihood of ending by splintering increases.*

[1]This study is specifically concerned with splintering that leads to the dissolution of the original group, and not with splintering in which a faction breaks off but the original group continues to exist.

## 4. Research Design

This study uses a group-year panel dataset of 760 terrorist organizations from 1970 to 2016. The data come primarily from the Extended Data on Terrorist Groups (EDTG; Hou, Gaibulloev, and Sandler 2020), which is based on the Global Terrorism Database (GTD; START 2020). Because I am theorizing about the hazard of alternative events taking place, I use competing risks models, which has been used by others who examine the factors leading to different ways of terrorist group failure (Carter 2012; Gaibulloev and Sandler 2014; Piazza and Piazza 2020). Due to the time varying nature of the data, I use cause-specific hazard models in which I estimate a separate Cox proportional hazards model for each type of ending, and ending in a way other than the event of interest is treated as censored. With time-varying data, this is preferred over the Fine-Gray competing risks method (Bonneville, de Wreede, and Putter 2024; Poguntke et al. 2018).

### *4.1. Dependent variable*

The dependent variable is the way that groups end. This variable comes from EDTG. Within the data, groups can end by outright victory/joining the political process, force, splintering, merging, or going inactive. Merging is when a group merges with another group. I do not theorize about this form of ending but groups that end in this way are still included in the data and are treated as censored. Groups that end by going inactive are coded with this end type in EDTG after five years of inactivity when no information on the way of ending is found elsewhere. Because this paper studies the effect of lethality on group end, the end category of inactive poses a problem because it is defined by the lack of attacks, and without committing attacks, a group will not cause fatalities. In other words, this category of the dependent variable is defined by the independent variable of interest. I therefore run two separate sets of analyses. The main set of analyses for this paper drops all groups that ended by going inactive from the sample. In the appendix, the main models are re-estimated with this category included. The amount of groups ending in each way can be seen in Figure 1. There is also a sizeable portion of groups (419) that are active in 2016 when the data ends.

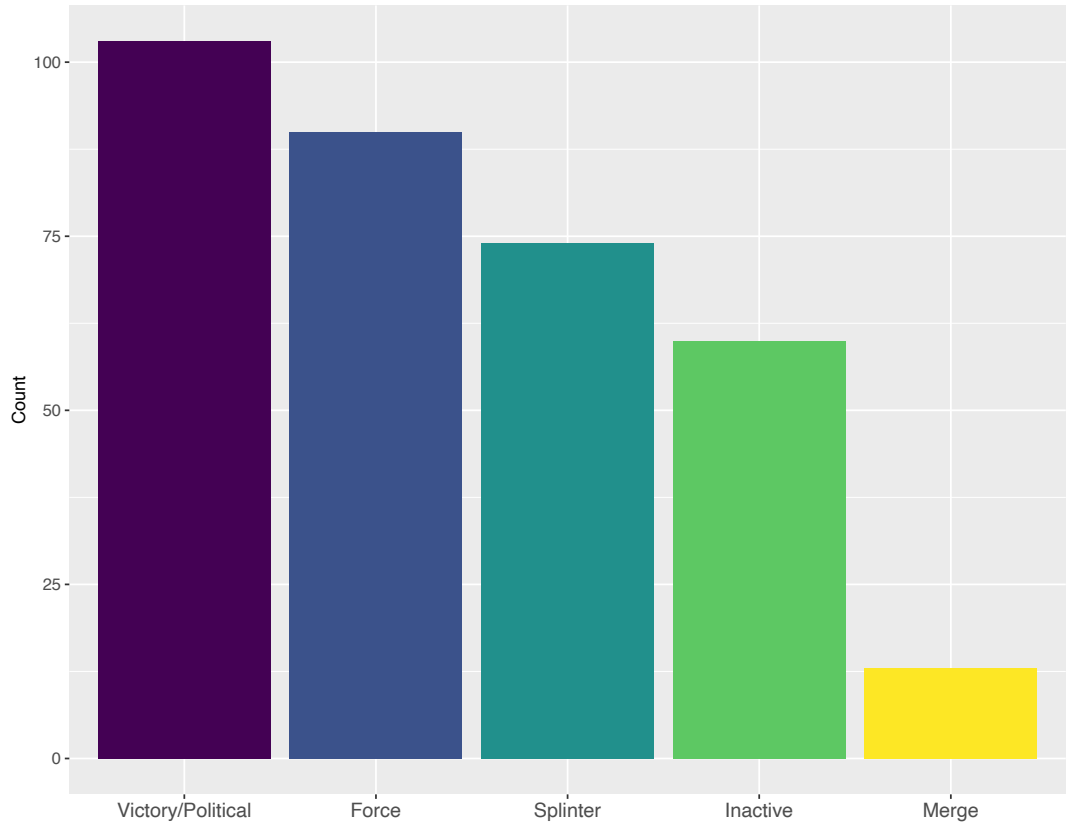


Figure 1.: Ways of Ending

### *4.2. Explanatory Variables*

The main explanatory variable is group lethality, conceptualized as fatalities caused by the group, similar to Asal and Rethemeyer (2008); Horowitz and Potter (2014); Olzak (2022). EDTG provides the total number of fatalities caused by each group in a given year. I use this variable to construct two more fatality measures. One measure is a cumulative sum of fatalities, so that for each group, the amount of fatalities each year is added into the amount of fatalities the next year and this number is carried forward for each year that the group exists. Within the EDTG data, when some fatalities are unknown but others are known for a group in a given year, the known values are summed. If all values are unknown, the variable is missing for that group-year (Hou, Gaibulloev, and Sandler 2020). Similarly, with the cumulative fatality variable, if the fatalities for some years are missing but others are known, the cumulative fatalities include the known fatalities.

With the other fatality measure, I allow the deaths to decay. This is done in order to capture the idea that the "meaning" or public memory of the fatalities may lessen as time passes but does not disappear completely by the next year. I therefore constructed a variable in which the first year that a specific number of fatalities are caused, the value is the full number and each year after that, the number decays by another 1/4. In other words, the number of fatalities has its full "meaning" in the year that the fatalities happen and then the meaning of the fatalities decreases by one fourth each year. If a group causes fatalities in multiple years, the new count is added to the decayed count for its first year and then begins to decay in the same way. I also test a third measure of a straightforward count of deaths caused by a terrorist organization per year. The lethality measures are logged due to extreme outliers. The distribution of the fatalities logged in base 2 can be seen in in Figure 2. Most groups in the sample kill few or none in a given year.

### *4.3. Control Variables*

I use EDTG to control for a number of internal factors. Organizations can change tactics to evade detection (Blomberg, Gaibulloev, and Sandler 2011; Gaibulloev and Sandler 2013, 2014). I account for this with a measure of attack diversity given in EDTG. I also account for the share of attacks that are transnational. Group orientation and the broad goal categories have been shown to affect group longevity (Carter 2012; Gaibulloev and Sandler 2014; Piazza and Piazza 2020), and it is especially important to control for goals, because the difficulty in achieving different goals may directly affect how groups fare. Group orientation is categorized as left-wing, right-wing, nationalist/separatist, and religious fundamentalist, with religious fundamentalist as the reference category. Group goals are categorized as policy change, territorial change, status quo, and one category indicating an empire, regime-change, or social-revolution goal, with status quo as the reference category.

I also control for external factors associated with the country that serves as a group's base. Population and GDP per capita are taken from the World Bank. GDP per capita accounts in part for a country's counterterrorism capabilities (Piazza and Piazza 2020). Another measure to account for this ability is government spending. This measure is

not included in the main models because it contains a large number of missing values, but the models are re-estimated with this variable and included in the appendix. I also use V-Dem's electoral democracy index to account for how democratic a country is (Coppedge et al. 2024). When a group has multiple bases, these variables are averaged. I also use EDTG data to account for each group's main region, with the MENA region as the reference category.

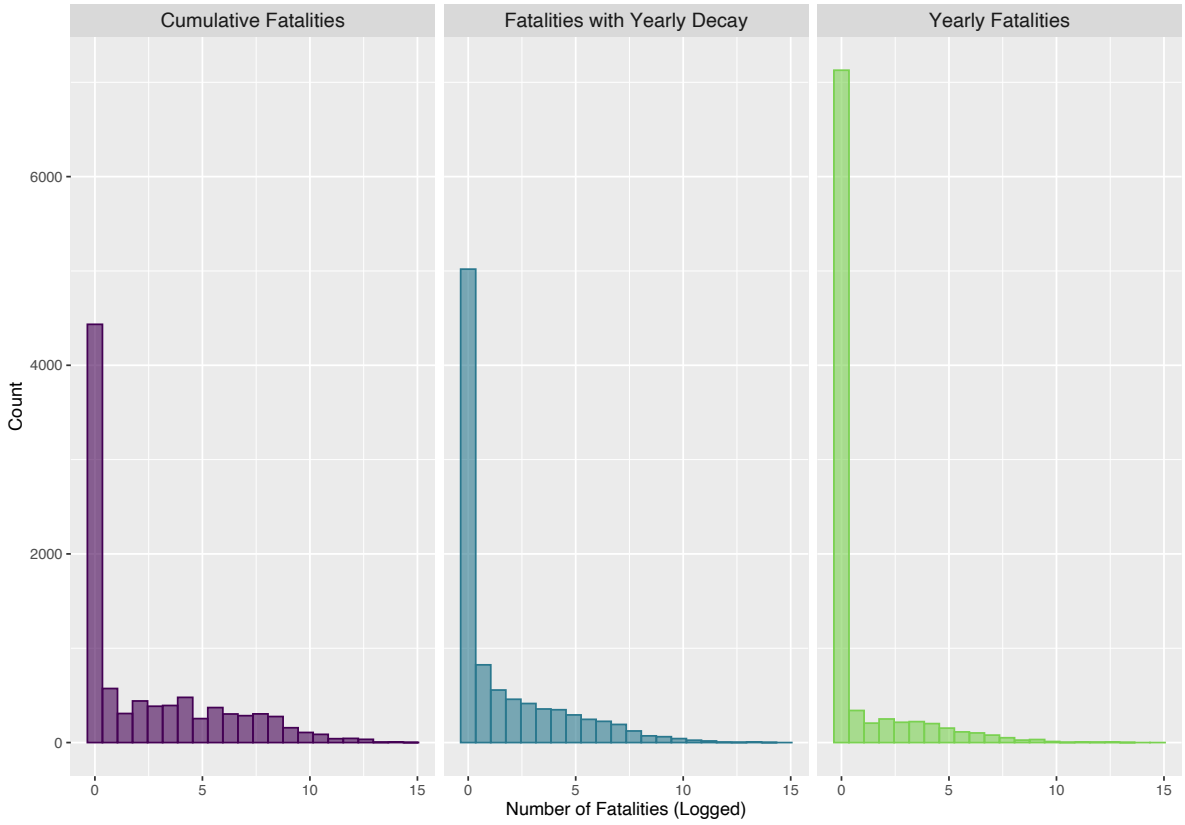


Figure 2.: Fatalities

## 5. Results

The first set of cause-specific competing risk models measure lethality as cumulative fatalities. The results are reported in Table 1. The second set of models measure lethality as the yearly count of fatalities with previous fatalities included with a decay. The results are reported in Table 2. The third set of models measure lethality as the straightforward yearly count of fatalities. The results are reported in Table 3. The first

three models reported in each table include only group characteristics, while the second three models in each table include both group and country covariates. Both fatalities and fatalities squared are logged in base 2 so that the effect can be interpreted as the effect that a twofold increase in the predictor has on the hazard. Tables 4, 5, and 6 present results for models that include government spending as a way of accounting for base country counterterrorism efforts. The tables report coefficients transformed to a percent change to the hazard with standard errors transformed accordingly. Tables 7, 8, and 9 in the appendix repeat the main models but include the groups that ended by going inactive and treat them as censored.

When lethality is measured as cumulative fatalities, the effect of the linear term on the hazard of ending by victory/political process is positive and significant in both models 1 and 4 of Table 1 and the quadratic term is negative and significant. Looking to model 4, which includes country characteristics, the effect of the linear and quadratic terms taken together is that a twofold increase in fatalities leads to a 36% increase in the hazard of ending by victory or joining the political process at first, but that this increase sees a diminishing effect that starts out as 2.25% and grows quadratically with each twofold increase in fatalities until the relationship between fatalities and the hazard of ending in victory or joining the political process reaches an inflection point. The results for cumulative fatalities hold for different specifications as seen in the appendix.

When lethality is measured as fatalities with decay, seen in Table 2, the effect of the fatality variable on the hazard of ending by victory/political process is in the expected direction but is insignificant and substantially much smaller than with cumulative fatalities. When lethality is measured as yearly lethalities, seen in Table 3, the effect is substantially small, in the wrong direction, and insignificant. These null results hold in different model specifications seen in the appendix.

The results suggest that for a group to achieve victory, it is an accumulation of its lethality over time that matters more so than the lethality that the group causes each year. In the case of the former, increased lethality does increase the risk of victory, but the relationship eventually flips at higher levels of lethality, which is in line with H1. The nonlinear relationship is discussed further below. One plausible explanation

for the discrepancy in results between cumulative fatalities and other measures is that causing a moderate amount of fatalities within one year as opposed to over the course of many years amplifies the effect of these fatalities and has the effect of leading a state to be less likely to give into a group's demands. The results lend some support to H1.

Table 1.: Lethality: Cumulative

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | 35.401*** | 43.917*** | 28.343* | 36.001** | 44.077*** | 31.701 |
| | (15.268) | (16.825) | (19.321) | (16.652) | (18.257) | (22.765) |
| Fatalities Sq. (log) | −2.017* | −3.720*** | −2.505 | −2.253* | −3.251** | −3.625 |
| | (1.197) | (1.391) | (1.957) | (1.268) | (1.441) | (2.325) |
| Left | 646.034*** | 282.056*** | 101.629* | 358.504*** | 239.318*** | 24.677 |
| | (358.853) | (131.600) | (73.016) | (266.249) | (151.292) | (60.210) |
| Right | 1,143.973*** | 478.205*** | 42.023 | 769.407*** | 279.542** | −11.986 |
| | (702.589) | (297.959) | (97.464) | (583.320) | (219.109) | (68.045) |
| Nationalist | 434.640*** | 75.832 | 67.056 | 450.232*** | 159.833** | 21.234 |
| | (263.009) | (68.459) | (63.313) | (308.438) | (117.426) | (57.995) |
| Regime | −23.035 | 122.214 | 23.235 | −37.558 | 161.431 | 29.900 |
| | (33.389) | (142.945) | (70.178) | (30.610) | (172.682) | (79.752) |
| Policy | 117.619* | 251.585* | −17.025 | 86.324 | 201.578 | −42.789 |
| | (93.331) | (229.989) | (51.935) | (88.498) | (210.623) | (39.902) |
| Territory | −65.226** | 0.581 | −20.052 | −73.731** | 10.582 | −4.180 |
| | (16.545) | (68.343) | (48.168) | (13.980) | (75.521) | (61.337) |
| Attack Diversity | −1.903*** | −0.261 | −3.252*** | −2.365*** | −0.516 | −3.134*** |
| | (0.686) | (0.598) | (1.055) | (0.757) | (0.630) | (1.125) |
| Share Trans. Terr. | 1.729*** | 0.503 | 2.067*** | 1.904*** | 0.362 | 1.872*** |
| | (0.249) | (0.348) | (0.273) | (0.269) | (0.368) | (0.308) |
| Multiple Bases | 35.416 | 40.117 | 28.667 | 20.747 | 32.305 | 71.132 |
| | (32.738) | (35.898) | (36.205) | (32.917) | (41.311) | (57.413) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pop (log) | | | | −20.016*** | 8.665 | 2.464 |
| | | | | (6.080) | (9.857) | (10.063) |
| GDP/Pop (log) | | | | −1.822 | 15.753 | −5.868 |
| | | | | (11.503) | (17.248) | (15.456) |
| Democracy | | | | −0.262 | −0.212 | 2.537*** |
| | | | | (0.608) | (0.729) | (0.957) |
| Ethnic Frac. | | | | −0.088 | 0.891 | 1.293 |
| | | | | (0.759) | (0.878) | (0.972) |
| Tropics | | | | 0.134 | −0.934* | 0.589 |
| | | | | (0.496) | (0.546) | (0.828) |
| Elevation (log) | | | | 23.465 | −14.479 | 28.690 |
| | | | | (18.735) | (13.280) | (24.437) |
| East Asia & Pacific | | | | 142.541 | 5.199 | −82.004* |
| | | | | (137.481) | (60.003) | (16.874) |
| Europe & Central Asia | | | | 165.270** | −12.711 | 42.960 |
| | | | | (125.232) | (33.507) | (70.474) |
| Latin Am. & Caribbean | | | | 218.805** | 89.195 | −55.510 |
| | | | | (172.324) | (96.546) | (35.076) |
| North America | | | | 98.841 | 52.387 | −87.655* |
| | | | | (125.456) | (74.984) | (14.027) |
| South Asia | | | | 163.377 | −51.328 | −82.460* |
| | | | | (164.154) | (35.588) | (16.121) |
| Sub-Saharan Africa | | | | 106.697 | −34.395 | −86.592** |
| | | | | (122.173) | (44.487) | (13.327) |
| Observations | 8,557 | 8,557 | 8,557 | 7,954 | 7,954 | 7,954 |
| Log Likelihood | −477.393 | −472.663 | −398.797 | −412.836 | −415.242 | −324.120 |
| Score (Logrank) Test | 184.700*** | 65.206*** | 108.068*** | 238.005*** | 100.945*** | 142.875*** |
| *Note:* | | | | | | *p<0.1; **p<0.05; ***p<0.01 |

The effect of cumulative fatalities on ending by force, seen in models 2 and 5 of Table 1, is positive and significant and the squared term is negative and significant. Taken together, these results suggest that a twofold increase in fatalities leads to a 44%

increase on the hazard of ending by force at first, but this increase is diminished with each twofold increase in fatalities until the relationship changes direction. In other words, there is initially a steep increase on the hazard of ending by force, but this effect flattens out with each twofold increase and eventually changes direction.

The substantive impact is even larger when lethality is measured as fatalities with a decay, seen in Table 2. In model 5, a twofold increase in fatalities leads to over a 66% increase on the hazard of ending by force at first, but this effect is diminished by around 5.7% with a twofold increase in fatalities, and the diminishing effect increases quadratically with each twofold increase in fatalities. Table 3 measures lethality as the count of fatalities each year. The effect holds in model 5, which includes the group level and country level covariates. In model 2, which includes only the country covariates, the linear term is insignificant, but the quadratic term is still significant and in the expected direction, providing support for the nonlinear relationship between lethality and the hazard of ending by force.

These results provide strong support for H2, with the lowest and highest levels of lethality decreasing the risk of ending by force and moderate values increasing the risk of ending by force. The results also hold for different model specifications as seen in the appendix, with an exception for yearly fatalities with government spending included. The results suggest that both accumulated fatalities over time and fatalities each year affect a group's hazard of ending by force.

Table 2.: Lethality: Decay

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | 18.053 | 60.966*** | 31.838 | 12.918 | 66.103*** | 48.049* |
| | (16.150) | (24.436) | (23.582) | (16.813) | (26.654) | (32.858) |
| Fatalities Sq. (log) | −0.443 | −6.363*** | −2.978 | −0.180 | −5.725** | −6.131 |
| | (1.826) | (2.240) | (2.812) | (2.009) | (2.283) | (3.855) |
| Left | 628.513*** | 275.790*** | 104.738** | 347.783** | 250.733*** | 23.984 |
| | (351.411) | (129.848) | (74.735) | (262.008) | (156.993) | (60.240) |
| Right | 1,145.662*** | 498.720*** | 45.897 | 788.069*** | 305.232** | −12.714 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (707.418) | (309.679) | (100.497) | (600.207) | (233.948) | (67.779) |
| Nationalist | 463.514*** | 73.404 | 69.302 | 494.625*** | 158.538** | 17.251 |
| | (279.048) | (67.580) | (64.503) | (338.086) | (117.051) | (56.411) |
| Regime | −25.981 | 132.269 | 23.947 | −41.563 | 176.068 | 32.415 |
| | (32.128) | (149.705) | (70.689) | (28.605) | (182.373) | (81.483) |
| Policy | 99.402 | 257.059* | −16.323 | 68.291 | 211.001 | −40.180 |
| | (85.244) | (233.493) | (52.376) | (79.064) | (217.062) | (41.727) |
| Territory | −67.115** | 3.816 | −18.770 | −76.217*** | 16.059 | 2.006 |
| | (15.614) | (70.531) | (48.899) | (12.651) | (79.461) | (65.340) |
| Attack Diversity | −2.020*** | −0.167 | −3.342*** | −2.414*** | −0.596 | −3.203*** |
| | (0.733) | (0.619) | (1.073) | (0.805) | (0.655) | (1.146) |
| Share Trans. Terr. | 1.779*** | 0.457 | 2.051*** | 1.928*** | 0.305 | 1.856*** |
| | (0.251) | (0.350) | (0.273) | (0.272) | (0.368) | (0.308) |
| Multiple Bases | 39.687 | 41.032 | 27.733 | 26.215 | 31.121 | 66.100 |
| | (33.508) | (36.109) | (35.898) | (34.166) | (40.763) | (55.801) |
| Pop (log) | | | | −20.781*** | 8.782 | 2.132 |
| | | | | (6.146) | (9.904) | (10.051) |
| GDP/Pop (log) | | | | −2.450 | 16.195 | −5.365 |
| | | | | (11.365) | (17.279) | (15.590) |
| Democracy | | | | −0.270 | −0.191 | 2.532*** |
| | | | | (0.602) | (0.726) | (0.959) |
| Ethnic Frac. | | | | −0.262 | 0.845 | 1.242 |
| | | | | (0.757) | (0.878) | (0.967) |
| Tropics | | | | 0.028 | −1.056* | 0.553 |
| | | | | (0.485) | (0.546) | (0.827) |
| Elevation (log) | | | | 23.408 | −14.160 | 29.448 |
| | | | | (18.620) | (13.392) | (24.430) |
| East Asia & Pacific | | | | 141.238 | 13.979 | −80.742* |
| | | | | (138.211) | (64.646) | (18.013) |
| Europe & Central Asia | | | | 140.523* | −20.048 | 43.244 |
| | | | | (114.279) | (30.613) | (70.513) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Latin Am. & Caribbean | | | | 236.475** | 92.493 | −55.185 |
| | | | | (181.657) | (97.647) | (35.301) |
| North America | | | | 80.180 | 47.603 | −87.587* |
| | | | | (112.690) | (72.025) | (14.083) |
| South Asia | | | | 147.048 | −52.002 | −81.626* |
| | | | | (153.493) | (35.085) | (16.888) |
| Sub-Saharan Africa | | | | 117.961 | −29.901 | −85.588* |
| | | | | (128.604) | (47.081) | (14.316) |
| Observations | 8,557 | 8,557 | 8,557 | 7,954 | 7,954 | 7,954 |
| Log Likelihood | −480.001 | −472.426 | −398.793 | −415.332 | −414.331 | −323.894 |
| Score (Logrank) Test | 180.206*** | 64.462*** | 108.678*** | 232.619*** | 101.767*** | 142.701*** |

The effect of lethality on the hazard of ending by splintering is ambiguous. When fatalities are cumulative, a twofold increase in fatalities leads to a 28% increase in the hazard of splintering. The quadratic term is insignificant, which is what was expected in H3. However, in model 6 of Table 1, which includes the group and country level covariates, both the linear and quadratic terms for fatalities are insignificant. When lethality is measured as fatalities with a decay, the results are similar, although it is model 6 with both group and country level covariates that has a significant linear term and insignificant quadratic term for fatalities, and model 3 with only group level covariates that has insignificant effects for fatalities. When fatalities are measured by year both the linear and quadratic terms are significant and have a very large impact.

Taken together, the results for splintering provide little support for H3. As the accumulation of fatalities over a group's duration increases, higher counts of fatalities lead to a higher risk of splintering, although this is not robust across different model specifications. When considering fatalities per year, a higher fatality count leads to a higher risk of splintering, but only to an extent; the significant and negative quadratic term suggests that this relationship eventually flips. There is also more robust support for the effect of yearly fatalities than for the effect of cumulative fatalities or fatalities with a decay. However, the results for both splintering and force considered together suggest that failure is less likely at the lowest and highest values of lethality, and that there is a moderate level of lethality at which the risk of failure is highest.

Table 3.: Lethality: Yearly

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | −1.007 | 40.595 | 122.344*** | −2.555 | 53.927* | 188.898*** |
| | (18.595) | (33.107) | (57.646) | (19.567) | (36.889) | (98.661) |
| Fatalities Sq. (log) | 1.029 | −6.856* | −13.021** | 1.333 | −6.952* | −22.281** |
| | (2.737) | (3.939) | (5.299) | (2.947) | (3.962) | (8.175) |
| Left | 526.238*** | 243.743*** | 119.674** | 300.229** | 195.880** | 29.319 |
| | (303.237) | (118.349) | (80.006) | (236.526) | (132.438) | (62.405) |
| Right | 1,076.496*** | 455.048*** | 49.313 | 794.799*** | 253.386** | −15.311 |
| | (665.396) | (283.836) | (103.453) | (608.165) | (203.516) | (66.672) |
| Nationalist | 451.669*** | 76.215 | 62.500 | 478.986*** | 158.660** | 13.793 |
| | (273.392) | (68.662) | (62.497) | (330.898) | (117.169) | (54.751) |
| Regime | −27.001 | 119.125 | 22.812 | −43.481 | 164.454 | 28.223 |
| | (31.572) | (140.241) | (70.619) | (27.619) | (174.300) | (79.940) |
| Policy | 80.845 | 206.989* | −21.638 | 49.139 | 166.499 | −38.458 |
| | (77.312) | (200.322) | (50.016) | (70.187) | (185.899) | (43.150) |
| Territory | −68.483** | −5.291 | −17.143 | −77.053*** | 1.481 | 2.159 |
| | (14.914) | (64.063) | (50.200) | (12.166) | (69.059) | (66.177) |
| Attack Diversity | −1.461* | 0.083 | −3.708*** | −2.016** | −0.424 | −3.596*** |
| | (0.788) | (0.717) | (1.089) | (0.890) | (0.746) | (1.175) |
| Share Trans. Terr. | 1.840*** | 0.604* | 1.957*** | 1.949*** | 0.415 | 1.809*** |
| | (0.258) | (0.351) | (0.281) | (0.279) | (0.371) | (0.311) |
| Multiple Bases | 39.638 | 43.081 | 28.892 | 25.155 | 43.451 | 67.881 |
| | (33.908) | (36.453) | (36.295) | (34.157) | (44.024) | (56.350) |
| Pop (log) | | | | −20.075*** | 10.290 | 2.544 |
| | | | | (6.375) | (10.153) | (10.080) |
| GDP/Pop (log) | | | | −1.919 | 17.161 | −5.696 |
| | | | | (11.621) | (17.355) | (15.624) |
| Democracy | | | | −0.333 | −0.273 | 2.645*** |
| | | | | (0.612) | (0.727) | (0.971) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Ethnic Frac. | | | | −0.329 | 0.822 | 1.117 |
| | | | | (0.768) | (0.899) | (0.966) |
| Tropics | | | | 0.234 | −1.053* | 0.589 |
| | | | | (0.501) | (0.546) | (0.824) |
| Elevation (log) | | | | 26.155 | −13.975 | 30.564 |
| | | | | (19.551) | (13.549) | (24.308) |
| East Asia & Pacific | | | | 80.030 | 11.972 | −82.147* |
| | | | | (111.425) | (64.110) | (16.941) |
| Europe & Central Asia | | | | 130.692* | −20.437 | 29.559 |
| | | | | (110.805) | (30.950) | (64.209) |
| Latin Am. & Caribbean | | | | 193.279* | 126.082 | −57.177 |
| | | | | (164.454) | (114.605) | (33.165) |
| North America | | | | 72.481 | 23.356 | −89.296* |
| | | | | (108.211) | (60.894) | (12.204) |
| South Asia | | | | 123.062 | −51.900 | −82.759* |
| | | | | (141.781) | (34.953) | (15.984) |
| Sub-Saharan Africa | | | | 87.274 | −27.708 | −86.018** |
| | | | | (114.577) | (48.576) | (13.793) |
| Observations | 8,518 | 8,518 | 8,518 | 7,920 | 7,920 | 7,920 |
| Log Likelihood | −467.643 | −469.809 | −388.285 | −403.261 | −413.049 | −319.217 |
| Score (Logrank) Test | 160.652*** | 57.388*** | 115.040*** | 212.852*** | 90.397*** | 148.968*** |
| *Note:* | | | | | | *p<0.1; **p<0.05; ***p<0.01 |

Various control variables are significant. Left, right, and nationalist groups are more likely to end by victory/political process and by force as compared to religious groups. Having a territory change goal decreases the hazard of ending by victory compared to groups that seek to keep the status quo. Having greater attack diversity decreases the hazard of ending by victory or splintering. This is likely due to the fact that higher attack diversity captures higher capacity, which can help a group survive while not necessarily contributing to success. Having a higher proportion of transnational attacks out of their total attacks increases the hazard of ending by victory/political

process or by splintering but there is no evidence that it affects ending by force. Interestingly, the results show no evidence that having multiple bases affects group termination, which suggests that multiple bases may not capture group capacity as well as attack diversity or share of transnational attacks. Groups are more likely to splinter as countries become more democratic, but the effect is small. Finally, regional variables matter, with groups more likely to end in victory or political process in Latin America/Caribbean and Europe/Central Asia compared to the reference region of Middle East/North Africa. Groups are less likely to end by splintering in North America, South Asia, Sub-Saharan Africa, and East Asia/Pacific as compared to the MENA region, and surprisingly, there is little evidence that region has an effect on ending by force.

### *5.1. Visualizing the Effect of Lethality*

To better understand the nonlinear effect on the hazard of an event, one would typically present a hazard curve or cumulative incidence curve at each level of a categorical variable. However, with a continuous variable, there are too many values of the variable to show a curve at each value. I therefore present heat maps that show the cumulative incidence function of the event of interest based on time and fatalities. Figure 3 shows the risk of terrorist groups ending due to achieving victory or joining the political process. The turning point in the effect of cumulative fatalities is at 6.75 when fatalities is logged in base 2, or about 128 fatalities. This is seen in the figure. Looking at $t =$ 40 years, for example, at the lowest levels of cumulative fatalities, the probability of ending by victory is 20%. As fatalities increase, the probability of ending by victory increases until 6.75 logged fatalities, when the probability of ending by victory is 36%. After this point, the probability of ending by victory begins to decrease as fatalities increases, and at the highest values of fatalities, the probability of ending by victory is down to 16%.

Following the more traditional way of visualizing the results of hazard models, another way to visualize the relationship can be seen on the left side of Figure 5, which plots the cumulative incidence function at arbitrarily chosen fatality values. Starting with the curve for $fatalities = 0$, the probability of ending by victory increases as

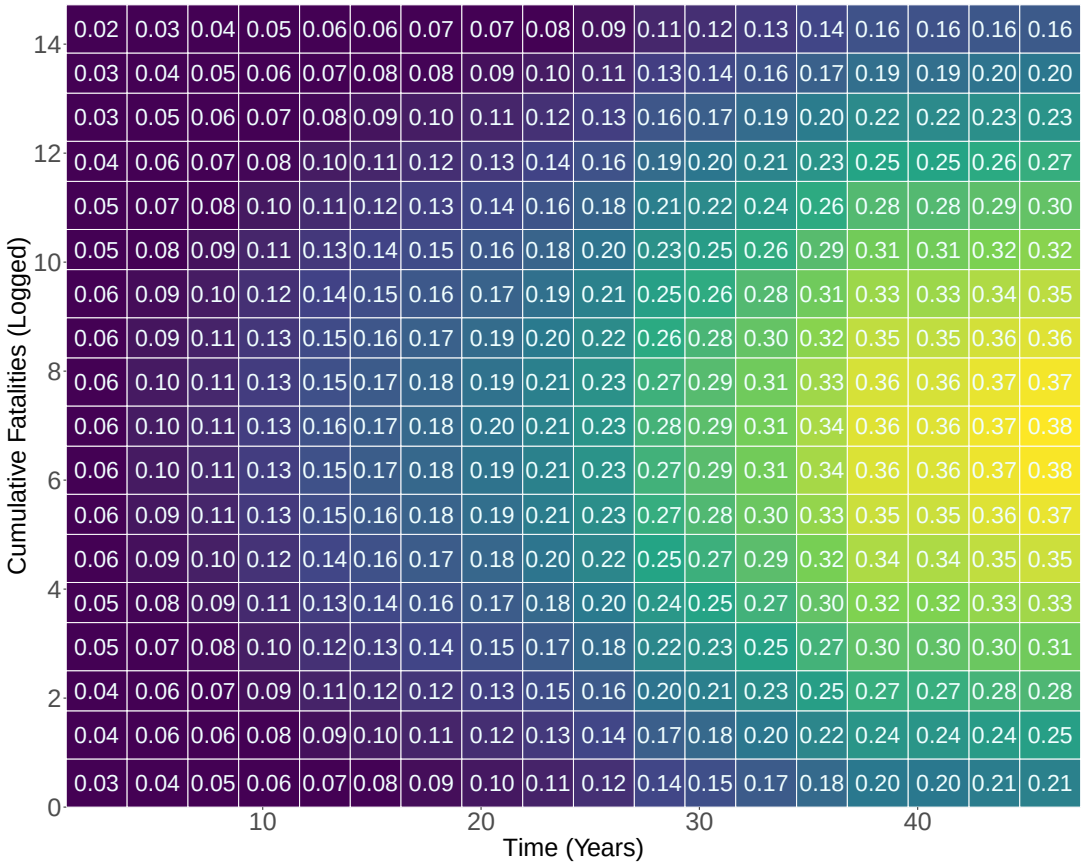


Figure 3.: Cumulative Incidence Function for Fatality (Cumulative) Effect on Ending by Victory/Political Process

fatalities increases up through the curve for *fatalities* = 6, after which, as fatalities grow, the probability of ending by victory decreases.

Figure 4 and the right side of Figure 5 present the relationship between cumulative fatalities and ending by force. The relationship between cumulative fatalities and ending by force flips direction at 5.52 fatalities when fatalities is logged in base 2, or 46 fatalities. The heat map also shows that at 6.75 logged fatalities, the risk of ending by force is still quite high. This suggests that when a group is most likely to end in victory, it also has a relatively large risk of being forcibly terminated.

### *5.2. Proportional Hazards Assumption*

The Cox proportional hazards model rests on the assumption that the hazard does not change over time for any of the covariates. I test the proportional hazards (PH)

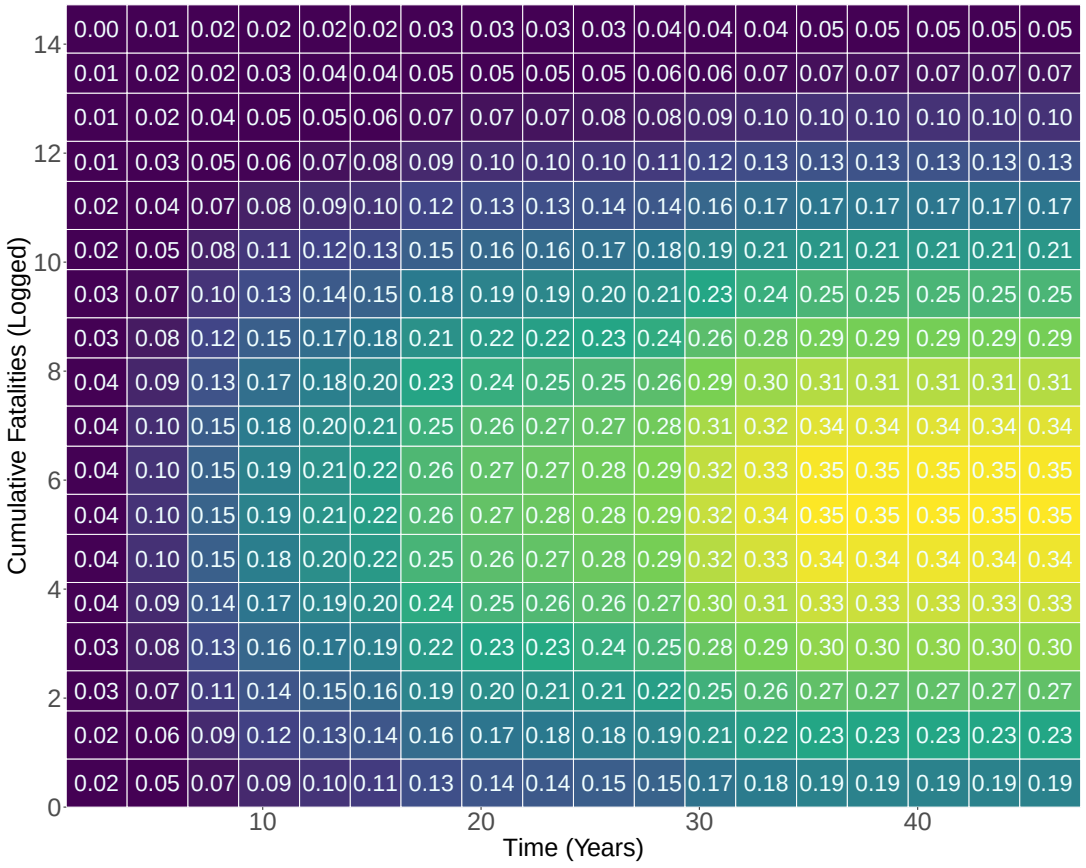


Figure 4.: Cumulative Incidence Function for Fatality (Cumulative) Effect on Ending by Force

assumption using *cox.zph* from the survival package in R (Therneau 2024). This tests the null hypothesis that the effect of the variables on the hazard do not vary with time, so small p-values suggest that there are violations of the PH assumption. The p-values for the main models with both group-level and country-level covariates are reported in Table 10 in the appendix. The models for ending by force and splintering have sufficiently high p-values that suggest that there is no violation of the PH assumption. When fatalities are measured yearly, the primary explanatory variables have p-values that suggest a potential violation of the PH assumption. However, because I have a large number of observations, rendering this test overly-sensitive, I examine scaled Schoenfeld residual plots, shown in Figure 6 in the appendix and this reveals that there is little deviation for these covariates.

It should be emphasized that with larger datasets, the proportional hazards test is very sensitive and may report nonproportionality that is not real or does not affect

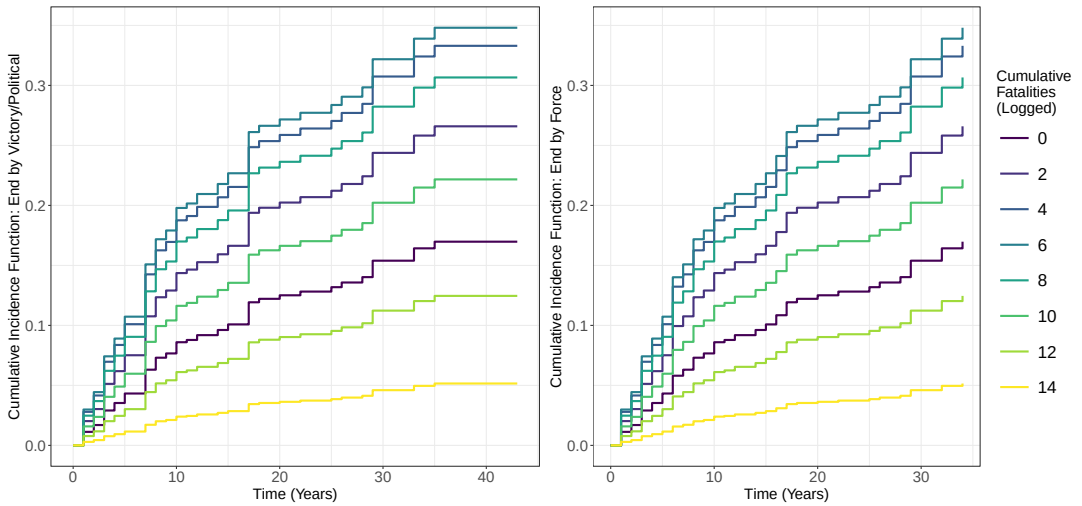


Figure 5.: CIF Plots

interpretation (Therneau and Grambsch 2000). Nevertheless, because various control variables in the models with victory/politics as the dependent variable potentially violate this assumption, I run models for this dependent variable that account for variables that violate the PH assumption based on both the p-values and the scaled Schoenfeld residuals for these covariates. These models make two changes from the original models. First, categorical predictors that violate the PH assumption are stratified, which allows a different baseline hazard for each category or stratum while the effects of the other variables on the hazard of ending are assumed to remain the same across all strata. The stratified covariates are not estimated; instead, the remaining covariates are estimated with a partial likelihood function that multiplies the likelihood functions for each stratum (Kleinbaum and Klein 2012). Second, I allow the continuous variables that violate the PH assumption to vary by time by applying a natural spline time transformation to these variables.

The results for these models, reported in Table 11 in the appendix, show only minor changes from the main models. When lethality is measured as fatalities with a decay, the linear effect of lethality on the hazard of ending by victory/politics becomes substantively larger and picks up significance, although the squared term remains insignificant. When lethality is measured as yearly fatalities, the linear and quadratic effects of lethality on the hazard of ending by victory/politics are in the hypothesized directions but remain insignificant. When lethality is measured as cumulative fatalities,

the results are robust.

## 6. Conclusion

This paper theorizes about how lethality affects group success. Whereas various pieces in the literature have researched different types of high-lethality attacks, this paper examines lethality as an organizational characteristic. Rather than exploring whether this key variable contributes to group longevity, I research its effect on different types of group termination and I argue that the different ways of ending speak to the success or failure of terrorist organizations.

Ending by victory or by joining the political process is considered to be success. In line with previous literature, this paper hypothesized a nonlinear relationship in which moderate levels of lethality lead to the greatest chance of success. The results provide support for this theory only when lethality is considered to be cumulative over all the years of a group's existence. Ending by splintering or via repressive force are both considered to be failures, I hypothesize different relationships between lethality and these two types of failure. The results support the hypothesis that moderate levels of lethality lead to the greatest chance of being forcibly terminated. This is in line with the idea that increased lethality increases government resolve, but also increases group capacity, so that at the highest levels of lethality, groups are able to evade government attempts at forcibly terminating the group.

Taken together, the findings show that increased lethality will not necessarily increase success. At the highest levels of lethality, groups have a decreased risk of failing by being forcibly terminated by military or police, but they also have a decreased risk of success. This means that at high levels of fatalities, groups might survive, but they will not necessarily achieve victory. It is moderate levels of lethality that bring about the highest chance of success, but this is a risk for groups because it also increases the chance of failure.

This paper contributes to the literature on the successfulness of terrorism by focusing explicitly on success in long-term goals and by showing that survival does not necessarily lead to success. Furthermore, I show the importance of considering lethal-

ity as an organizational attribute and that fatalities caused over a group's existence affect success differently than fatalities caused in one year. Future work can parse out the effects of lethality caused domestically and lethality caused transnationally. Additionally, not all groups have the intention of causing deaths, and future work can investigate the number or type of attacks and how these characteristics influence group success and failure.

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## 7. Appendix

### *7.1. Government Spending Covariate*

Table 4.: Lethality: Cumulative; Government Spending Included

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | 35.720** | 42.212*** | 18.775 | 39.679** | 40.481** | 23.116 |
| | (16.386) | (18.502) | (22.700) | (18.395) | (19.406) | (23.609) |
| Fatalities Sq. (log) | −1.732 | −3.452** | −2.956 | −2.218* | −3.072* | −3.085 |
| | (1.206) | (1.496) | (2.499) | (1.291) | (1.549) | (2.459) |
| Left | 714.108*** | 198.343*** | 121.504* | 404.650*** | 164.082** | 9.069 |
| | (439.585) | (110.108) | (99.327) | (297.561) | (119.065) | (57.955) |
| Right | 1,066.527*** | 303.230*** | 21.993 | 754.237*** | 190.637* | −25.344 |
| | (735.519) | (215.643) | (91.352) | (586.235) | (169.396) | (61.594) |
| Nationalist | 447.491*** | 34.877 | 49.287 | 421.669*** | 72.297 | 4.882 |
| | (301.885) | (57.146) | (72.361) | (297.141) | (83.112) | (54.995) |
| Regime | −37.663 | 88.154 | −25.253 | −52.957 | 103.764 | −8.994 |
| | (29.737) | (123.607) | (44.621) | (24.708) | (139.429) | (58.732) |
| Policy | 112.974* | 185.837 | −71.875* | 83.072 | 149.922 | −70.492 |
| | (97.649) | (191.557) | (20.083) | (92.336) | (181.603) | (22.664) |
| Territory | −66.282** | −13.658 | −51.874 | −68.793** | 3.678 | −25.233 |
| | (17.052) | (59.837) | (30.367) | (17.513) | (72.202) | (50.560) |
| Attack Diversity | −2.365*** | −0.268 | −2.292** | −2.672*** | −0.329 | −2.490** |
| | (0.774) | (0.658) | (1.118) | (0.817) | (0.667) | (1.160) |
| Share Trans. Terr. | 2.019*** | 0.519 | 2.061*** | 1.981*** | 0.454 | 1.886*** |
| | (0.271) | (0.383) | (0.325) | (0.289) | (0.389) | (0.345) |
| Multiple Bases | 35.774 | 24.866 | 16.652 | −8.724 | 37.967 | 50.681 |
| | (36.173) | (36.347) | (39.023) | (27.711) | (44.987) | (56.516) |
| Pop (log) | | | | −21.170*** | 13.959 | 6.898 |
| | | | | (7.044) | (11.855) | (12.091) |

| | | | | | | |
|---|---|---|---|---|---|---|
| GDP/Pop (log) | | | | −3.449 | 5.949 | 0.836 |
| | | | | (13.607) | (18.792) | (19.871) |
| Democracy | | | | −0.826 | 0.146 | 2.475** |
| | | | | (0.667) | (0.840) | (1.064) |
| Ethnic Frac. | | | | −0.350 | 1.881* | 1.724 |
| | | | | (0.832) | (0.038) | (1.186) |
| Tropics | | | | 0.460 | −1.316** | 1.329 |
| | | | | (0.641) | (0.631) | (1.051) |
| Elevation (log) | | | | 38.422* | −27.424* | 60.361** |
| | | | | (23.535) | (12.428) | (38.264) |
| East Asia & Pacific | | | | 160.120 | 32.020 | −75.730 |
| | | | | (158.111) | (77.596) | (25.054) |
| Europe & Central Asia | | | | 207.673** | −13.284 | 155.382 |
| | | | | (151.919) | (35.813) | (151.344) |
| Latin Am. & Caribbean | | | | 93.182 | 109.248 | −57.168 |
| | | | | (118.904) | (121.857) | (43.002) |
| North America | | | | 129.190 | 24.053 | −85.803* |
| | | | | (147.408) | (64.584) | (16.470) |
| South Asia | | | | 84.177 | −71.683 | −72.347 |
| | | | | (137.522) | (24.140) | (30.051) |
| Sub-Saharan Africa | | | | 25.147 | −43.527 | −79.072 |
| | | | | (84.326) | (42.855) | (24.334) |
| Gov. Spending | −95.968* | 2,114.643** | 4,548.267** | −80.467 | −26.628 | 1,548.697 |
| | (6.977) | (3,203.276) | (7,418.386) | (43.976) | (161.050) | (4,155.521) |
| Observations | 6,933 | 6,933 | 6,933 | 6,850 | 6,850 | 6,850 |
| Log Likelihood | −381.592 | −380.951 | −284.069 | −358.481 | −361.166 | −263.110 |
| Score (Logrank) Test | 187.098*** | 50.072*** | 97.957*** | 227.371*** | 86.651*** | 124.096*** |

*Note:* *p<0.1; **p<0.05; ***p<0.01

Table 5.: Lethality: Decay; Government Spending Included

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | 17.555 | 51.216** | 23.914 | 18.469 | 54.014** | 29.069 |
| | (17.449) | (24.675) | (30.356) | (19.297) | (25.993) | (32.289) |
| Fatalities Sq. (log) | −0.084 | −5.027** | −4.316 | −0.663 | −4.712** | −4.430 |
| | (1.938) | (2.286) | (4.192) | (2.183) | (2.312) | (4.201) |
| Left | 689.159*** | 197.891*** | 119.340* | 369.300*** | 172.993** | 7.455 |
| | (429.381) | (110.560) | (98.984) | (277.294) | (123.820) | (57.580) |
| Right | 1,076.366*** | 321.016*** | 22.983 | 734.767*** | 210.177* | −25.482 |
| | (748.979) | (226.674) | (92.451) | (575.201) | (181.134) | (61.666) |
| Nationalist | 501.019*** | 34.501 | 43.304 | 451.573*** | 76.791 | 0.988 |
| | (336.992) | (57.134) | (69.800) | (318.276) | (85.663) | (53.380) |
| Regime | −39.522 | 93.681 | −24.282 | −55.372 | 113.515 | −8.112 |
| | (28.726) | (127.544) | (45.279) | (23.348) | (146.259) | (59.310) |
| Policy | 92.467 | 188.282 | −71.049* | 65.262 | 158.559 | −69.404 |
| | (87.464) | (193.214) | (20.672) | (82.116) | (187.814) | (23.442) |
| Territory | −68.585** | −9.594 | −48.375 | −71.186** | 8.804 | −20.262 |
| | (15.836) | (62.544) | (32.298) | (16.081) | (75.725) | (53.778) |
| Attack Diversity | −2.508*** | −0.252 | −2.291** | −2.680*** | −0.427 | −2.554** |
| | (0.836) | (0.688) | (1.139) | (0.869) | (0.701) | (1.186) |
| Share Trans. Terr. | 2.079*** | 0.498 | 2.050*** | 2.016*** | 0.424 | 1.887*** |
| | (0.273) | (0.384) | (0.325) | (0.291) | (0.389) | (0.344) |
| Multiple Bases | 40.306 | 26.493 | 15.448 | −2.789 | 37.600 | 48.584 |
| | (37.057) | (36.809) | (38.788) | (29.157) | (44.602) | (55.845) |
| Pop (log) | | | | −20.854*** | 14.509 | 6.219 |
| | | | | (7.119) | (11.975) | (12.007) |
| GDP/Pop (log) | | | | −4.591 | 5.950 | 0.966 |
| | | | | (13.308) | (18.835) | (19.964) |
| Democracy | | | | −0.828 | 0.130 | 2.457** |
| | | | | (0.663) | (0.837) | (1.064) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Ethnic Frac. | | | | −0.450 | 1.844* | 1.632 |
| | | | | (0.831) | (1.037) | (1.180) |
| Tropics | | | | 0.266 | −1.496** | 1.278 |
| | | | | (0.623) | (0.627) | (1.047) |
| Elevation (log) | | | | 37.033* | −27.573* | 60.890** |
| | | | | (23.078) | (12.447) | (38.342) |
| East Asia & Pacific | | | | 149.920 | 41.493 | −74.568 |
| | | | | (153.436) | (82.782) | (26.235) |
| Europe & Central Asia | | | | 169.707** | −20.311 | 153.568 |
| | | | | (133.473) | (32.772) | (150.221) |
| Latin Am. & Caribbean | | | | 112.685 | 116.674 | −58.258 |
| | | | | (130.415) | (125.403) | (41.932) |
| North America | | | | 92.832 | 19.602 | −85.454* |
| | | | | (122.449) | (61.610) | (16.840) |
| South Asia | | | | 58.456 | −73.743 | −72.087 |
| | | | | (117.808) | (22.423) | (30.255) |
| Sub-Saharan Africa | | | | 33.222 | −41.219 | −78.087 |
| | | | | (89.048) | (44.298) | (25.509) |
| Gov. Spending | −95.286* | 1,720.815** | 3,611.836** | −81.563 | −48.943 | 975.464 |
| | (8.105) | (2,603.390) | (5,861.559) | (40.873) | (110.396) | (2,658.191) |
| Observations | 6,933 | 6,933 | 6,933 | 6,850 | 6,850 | 6,850 |
| Log Likelihood | −384.111 | −381.422 | −284.335 | −361.137 | −360.921 | −263.418 |
| Score (Logrank) Test | 182.458*** | 49.218*** | 97.873*** | 222.298*** | 86.524*** | 123.582*** |

*Note:* *p<0.1; **p<0.05; ***p<0.01

Table 6.: Lethality: Yearly; Government Spending Included

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | 1.961 | 48.714 | 204.833*** | −3.539 | 53.274* | 234.700*** |
| | (21.064) | (36.428) | (119.860) | (21.469) | (38.539) | (134.552) |
| Fatalities Sq. (log) | 0.975 | −6.713 | −25.229** | 1.270 | −6.674 | −26.103** |
| | (2.932) | (3.991) | (9.907) | (3.306) | (4.077) | (9.908) |
| Left | 586.167*** | 174.695*** | 133.460* | 319.292** | 135.431* | 16.611 |
| | (373.684) | (101.582) | (104.458) | (249.325) | (106.657) | (62.359) |
| Right | 1,047.898*** | 304.960*** | 13.281 | 739.108*** | 176.948* | −30.182 |
| | (728.911) | (216.577) | (85.356) | (582.945) | (160.944) | (59.124) |
| Nationalist | 487.154*** | 40.899 | 34.738 | 445.466*** | 75.781 | −3.175 |
| | (328.752) | (60.038) | (65.575) | (316.500) | (84.966) | (51.046) |
| Regime | −36.806 | 88.193 | −32.246 | −53.052 | 107.300 | −11.060 |
| | (29.950) | (123.245) | (40.878) | (24.581) | (141.556) | (59.014) |
| Policy | 75.594 | 153.003 | −70.652* | 53.363 | 130.984 | −67.738 |
| | (79.904) | (169.213) | (20.989) | (76.416) | (167.347) | (25.044) |
| Territory | −69.384** | −16.539 | −51.094 | −71.185** | −1.615 | −17.588 |
| | (15.447) | (57.521) | (30.507) | (16.101) | (68.151) | (57.057) |
| Attack Diversity | −1.972** | −0.152 | −2.788** | −2.172** | −0.306 | −3.178** |
| | (0.903) | (0.784) | (1.164) | (0.957) | (0.788) | (1.232) |
| Share Trans. Terr. | 2.196*** | 0.632 | 1.941*** | 2.111*** | 0.514 | 1.834*** |
| | (0.279) | (0.386) | (0.329) | (0.298) | (0.392) | (0.346) |
| Multiple Bases | 38.300 | 34.592 | 10.066 | −5.505 | 47.849 | 47.324 |
| | (36.960) | (38.733) | (37.075) | (28.514) | (47.488) | (55.838) |
| Pop (log) | | | | −19.035** | 16.806 | 4.991 |
| | | | | (7.301) | (12.307) | (11.735) |
| GDP/Pop (log) | | | | −2.899 | 6.258 | 2.869 |
| | | | | (13.737) | (18.803) | (20.646) |
| Democracy | | | | −1.050 | 0.091 | 2.564** |
| | | | | (0.667) | (0.843) | (1.079) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Ethnic Frac. | | | | −0.566 | 1.822* | 1.395 |
| | | | | (0.845) | (1.045) | (1.159) |
| Tropics | | | | 0.477 | −1.541** | 1.317 |
| | | | | (0.634) | (0.625) | (1.043) |
| Elevation (log) | | | | 39.642* | −27.457* | 64.628** |
| | | | | (24.090) | (12.547) | (38.198) |
| East Asia & Pacific | | | | 78.575 | 48.159 | −75.214 |
| | | | | (117.318) | (87.458) | (25.682) |
| Europe & Central Asia | | | | 157.449* | −18.562 | 134.283 |
| | | | | (128.263) | (33.992) | (140.115) |
| Latin Am. & Caribbean | | | | 94.434 | 167.310* | −60.199 |
| | | | | (121.713) | (153.619) | (39.299) |
| North America | | | | 82.521 | 2.218 | −87.475* |
| | | | | (115.923) | (53.044) | (14.627) |
| South Asia | | | | 50.790 | −73.325 | −69.184 |
| | | | | (112.869) | (22.692) | (33.727) |
| Sub-Saharan Africa | | | | 20.877 | −35.884 | −74.989 |
| | | | | (82.579) | (47.956) | (28.900) |
| Gov. Spending | −96.737* | 1,228.510* | 3,410.217** | −80.854 | −42.819 | 782.101 |
| | (5.744) | (1,927.298) | (5,619.089) | (42.822) | (122.926) | (2,190.825) |
| Observations | 6,904 | 6,904 | 6,904 | 6,821 | 6,821 | 6,821 |
| Log Likelihood | −377.114 | −377.546 | −279.481 | −353.383 | −358.111 | −258.203 |
| Score (Logrank) Test | 166.765*** | 45.145*** | 103.155*** | 210.233*** | 77.992*** | 129.169*** |

*Note:* *p<0.1; **p<0.05; ***p<0.01

### *7.2. Ending by Going Inactive Included*

Table 7.: Lethality: Cumulative; End By Going Inactive Included

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | 35.584*** | 45.025*** | 28.112* | 34.905** | 46.984*** | 29.207 |
| | (15.335) | (17.003) | (19.269) | (16.530) | (18.601) | (22.188) |
| Fatalities Sq. (log) | −2.008* | −3.754*** | −2.494 | −2.166* | −3.407** | −3.541 |
| | (1.197) | (1.390) | (1.955) | (1.272) | (1.440) | (2.302) |
| Left | 657.777*** | 280.093*** | 109.272** | 360.535*** | 249.344*** | 49.559 |
| | (365.424) | (131.316) | (76.003) | (268.007) | (156.391) | (71.474) |
| Right | 1,121.852*** | 449.373*** | 43.927 | 771.421*** | 277.729** | 4.858 |
| | (691.422) | (282.907) | (98.709) | (582.633) | (218.183) | (79.734) |
| Nationalist | 450.538*** | 79.412 | 77.344 | 447.645*** | 170.044** | 47.457 |
| | (271.198) | (69.774) | (67.189) | (307.390) | (121.491) | (69.475) |
| Regime | −25.861 | 115.108 | 18.186 | −41.227 | 150.188 | 21.921 |
| | (32.132) | (137.905) | (67.220) | (28.788) | (165.027) | (74.902) |
| Policy | 97.087 | 224.412* | −23.848 | 69.184 | 170.321 | −44.005 |
| | (84.442) | (211.927) | (47.536) | (80.114) | (188.336) | (38.918) |
| Territory | −67.382** | −5.838 | −25.329 | −74.643** | 1.826 | −15.952 |
| | (15.491) | (63.812) | (44.873) | (13.518) | (69.458) | (53.452) |
| Attack Diversity | −1.920*** | −0.250 | −3.193*** | −2.396*** | −0.505 | −2.937*** |
| | (0.683) | (0.597) | (1.052) | (0.754) | (0.628) | (1.117) |
| Share Trans. Terr. | 1.724*** | 0.495 | 2.057*** | 1.887*** | 0.375 | 1.844*** |
| | (0.249) | (0.348) | (0.272) | (0.268) | (0.367) | (0.307) |
| Multiple Bases | 41.838 | 44.236 | 29.437 | 25.270 | 37.761 | 72.352 |
| | (34.439) | (37.086) | (36.547) | (34.189) | (42.875) | (57.602) |
| Pop (log) | | | | −20.183*** | 8.314 | 4.135 |
| | | | | (6.058) | (9.735) | (10.229) |
| GDP/Pop (log) | | | | −2.305 | 11.889 | −12.921 |
| | | | | (11.375) | (16.576) | (13.647) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Democracy | | | | −0.408 | −0.243 | 2.343** |
| | | | | (0.597) | (0.731) | (0.942) |
| Ethnic Frac. | | | | −0.259 | 0.870 | 1.021 |
| | | | | (0.750) | (0.880) | (0.977) |
| Tropics | | | | 0.155 | −0.904 | 0.456 |
| | | | | (0.499) | (0.553) | (0.836) |
| Elevation (log) | | | | 21.784 | −14.551 | 21.350 |
| | | | | (18.269) | (13.206) | (22.887) |
| East Asia & Pacific | | | | 118.183 | −11.070 | −83.280* |
| | | | | (123.386) | (50.400) | (15.769) |
| Europe & Central Asia | | | | 174.662** | −8.208 | 38.992 |
| | | | | (128.799) | (34.903) | (68.956) |
| Latin Am. & Caribbean | | | | 233.017** | 82.311 | −55.294 |
| | | | | (180.800) | (94.191) | (35.123) |
| North America | | | | 121.336 | 80.234 | −85.264* |
| | | | | (139.126) | (87.874) | (16.749) |
| South Asia | | | | 177.445 | −53.306 | −85.850** |
| | | | | (172.648) | (34.186) | (12.922) |
| Sub-Saharan Africa | | | | 117.307 | −37.739 | −87.749** |
| | | | | (128.701) | (42.781) | (12.277) |
| Observations | 8,805 | 8,805 | 8,805 | 8,201 | 8,201 | 8,201 |
| Log Likelihood | −481.798 | −475.820 | −401.979 | −416.449 | −418.450 | −329.351 |
| Score (Logrank) Test | 178.584*** | 63.407*** | 106.162*** | 234.418*** | 100.335*** | 137.401*** |
| *Note:* | | | | | | *p<0.1; **p<0.05; ***p<0.01 |

Table 8.: Lethality: Decay; End By Going Inactive Included

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | 18.514 | 62.998*** | 32.101 | 12.215 | 69.771*** | 45.990* |
| | (16.251) | (24.835) | (23.664) | (16.674) | (27.287) | (31.838) |
| Fatalities Sq. (log) | −0.469 | −6.488*** | −3.057 | −0.085 | −5.980** | −6.242 |
| | (1.828) | (2.247) | (2.816) | (2.002) | (2.285) | (3.752) |
| Left | 639.287*** | 273.290*** | 111.988** | 347.982** | 256.841*** | 46.680 |
| | (357.697) | (129.357) | (77.642) | (262.862) | (160.455) | (70.732) |
| Right | 1,118.260*** | 462.177*** | 47.322 | 784.584*** | 297.937** | 2.823 |
| | (693.285) | (290.559) | (101.421) | (596.308) | (229.784) | (78.625) |
| Nationalist | 482.965*** | 76.182 | 79.211 | 493.783*** | 167.295** | 40.472 |
| | (289.330) | (68.584) | (68.312) | (338.170) | (120.557) | (66.651) |
| Regime | −28.851 | 123.256 | 18.861 | −44.890 | 164.396 | 24.693 |
| | (30.836) | (143.367) | (67.703) | (26.933) | (174.442) | (76.804) |
| Policy | 80.892 | 228.763* | −23.206 | 54.060 | 176.241 | −41.320 |
| | (77.207) | (214.595) | (47.931) | (72.209) | (192.283) | (40.792) |
| Territory | −69.359** | −3.324 | −24.130 | −77.128*** | 7.341 | −10.130 |
| | (14.512) | (65.475) | (45.549) | (12.176) | (73.452) | (57.206) |
| Attack Diversity | −2.025*** | −0.152 | −3.276*** | −2.433*** | −0.569 | −2.987*** |
| | (0.731) | (0.618) | (1.070) | (0.803) | (0.653) | (1.137) |
| Share Trans. Terr. | 1.773*** | 0.448 | 2.042*** | 1.916*** | 0.318 | 1.829*** |
| | (0.251) | (0.350) | (0.273) | (0.271) | (0.368) | (0.307) |
| Multiple Bases | 46.351 | 45.291 | 28.548 | 30.768 | 36.456 | 67.752 |
| | (35.245) | (37.326) | (36.259) | (35.454) | (42.365) | (56.233) |
| Pop (log) | | | | −20.941*** | 8.398 | 3.798 |
| | | | | (6.119) | (9.780) | (10.209) |
| GDP/Pop (log) | | | | −3.258 | 12.178 | −12.483 |
| | | | | (11.210) | (16.597) | (13.755) |
| Democracy | | | | −0.404 | −0.222 | 2.350** |
| | | | | (0.593) | (0.729) | (0.944) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Ethnic Frac. | | | | −0.428 | 0.820 | 0.983 |
| | | | | (0.746) | (0.881) | (0.972) |
| Tropics | | | | 0.049 | −1.023* | 0.428 |
| | | | | (0.489) | (0.554) | (0.834) |
| Elevation (log) | | | | 21.823 | −14.186 | 21.959 |
| | | | | (18.194) | (13.322) | (22.861) |
| East Asia & Pacific | | | | 116.193 | −5.296 | −82.123* |
| | | | | (123.526) | (53.368) | (16.820) |
| Europe & Central Asia | | | | 150.904* | −15.477 | 39.677 |
| | | | | (118.467) | (32.067) | (69.291) |
| Latin Am. & Caribbean | | | | 250.957** | 85.702 | −54.945 |
| | | | | (190.694) | (95.507) | (35.357) |
| North America | | | | 100.259 | 75.670 | −85.180* |
| | | | | (124.898) | (84.880) | (16.820) |
| South Asia | | | | 158.575 | −54.148 | −85.189** |
| | | | | (160.594) | (33.586) | (13.518) |
| Sub-Saharan Africa | | | | 127.573 | −33.311 | −86.849** |
| | | | | (134.602) | (45.423) | (13.168) |
| Observations | 8,805 | 8,805 | 8,805 | 8,201 | 8,201 | 8,201 |
| Log Likelihood | −484.391 | −475.545 | −401.968 | −418.813 | −417.647 | −329.036 |
| Score (Logrank) Test | 174.151*** | 62.765*** | 106.666*** | 229.135*** | 101.143*** | 137.220*** |

*Note:* *p<0.1; **p<0.05; ***p<0.01

Table 9.: Lethality: Yearly; End By Going Inactive Included

| | *Dependent variable:* | | | | | |
|---|---|---|---|---|---|---|
| | Victory/Pol. | Force | Splinter | Victory/Pol. | Force | Splinter |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Fatalities (log) | −0.914 | 40.558 | 119.927*** | −2.633 | 54.079* | 189.908*** |
| | (18.675) | (33.032) | (57.135) | (19.613) | (36.800) | (104.210) |
| Fatalities Sq. (log) | 1.012 | −6.856* | −12.943** | 1.344 | −6.981* | −23.488** |
| | (2.743) | (3.942) | (5.359) | (2.961) | (3.950) | (8.823) |
| Left | 526.348*** | 239.233*** | 128.549** | 298.950** | 195.768** | 52.372 |
| | (303.996) | (117.096) | (83.638) | (236.412) | (133.049) | (73.308) |
| Right | 1,039.587*** | 418.544*** | 52.479 | 790.852*** | 243.486** | 0.192 |
| | (645.576) | (264.920) | (105.616) | (604.293) | (197.797) | (77.705) |
| Nationalist | 468.007*** | 79.873 | 72.868 | 476.839*** | 166.901** | 36.064 |
| | (281.804) | (69.927) | (66.569) | (329.907) | (120.138) | (64.752) |
| Regime | −29.627 | 109.980 | 17.450 | −46.490 | 152.125 | 20.695 |
| | (30.384) | (133.864) | (67.470) | (26.097) | (165.947) | (75.146) |
| Policy | 63.664 | 180.404 | −28.631 | 37.496 | 135.198 | −39.708 |
| | (69.854) | (182.547) | (45.414) | (64.614) | (163.666) | (42.029) |
| Territory | −70.749*** | −12.746 | −22.908 | −77.971*** | −7.018 | −9.728 |
| | (13.801) | (58.783) | (46.572) | (11.678) | (63.209) | (57.935) |
| Attack Diversity | −1.447* | 0.131 | −3.621*** | −2.017** | −0.356 | −3.331*** |
| | (0.787) | (0.713) | (1.087) | (0.889) | (0.744) | (1.162) |
| Share Trans. Terr. | 1.835*** | 0.599* | 1.953*** | 1.933*** | 0.433 | 1.784*** |
| | (0.258) | (0.351) | (0.280) | (0.278) | (0.371) | (0.309) |
| Multiple Bases | 46.441 | 47.491 | 29.487 | 29.163 | 49.346 | 66.010 |
| | (35.684) | (37.703) | (36.570) | (35.334) | (45.866) | (55.459) |
| Pop (log) | | | | −20.177*** | 9.798 | 3.821 |
| | | | | (6.344) | (10.004) | (10.185) |
| GDP/Pop (log) | | | | −2.754 | 12.645 | −12.421 |
| | | | | (11.453) | (16.628) | (13.842) |
| Democracy | | | | −0.465 | −0.299 | 2.443*** |
| | | | | (0.602) | (0.732) | (0.950) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Ethnic Frac. | | | | −0.504 | 0.774 | 0.893 |
| | | | | (0.756) | (0.902) | (0.971) |
| Tropics | | | | 0.254 | −1.015* | 0.478 |
| | | | | (0.504) | (0.555) | (0.833) |
| Elevation (log) | | | | 24.506 | −14.096 | 23.030 |
| | | | | (19.092) | (13.485) | (22.775) |
| East Asia & Pacific | | | | 60.042 | −7.553 | −83.022* |
| | | | | (98.110) | (52.489) | (16.155) |
| Europe & Central Asia | | | | 138.643* | −15.174 | 27.810 |
| | | | | (114.017) | (32.656) | (63.943) |
| Latin Am. & Caribbean | | | | 202.832** | 118.109 | −57.445 |
| | | | | (170.856) | (112.205) | (33.004) |
| North America | | | | 91.386 | 48.388 | −87.030* |
| | | | | (119.736) | (72.568) | (14.788) |
| South Asia | | | | 132.682 | −53.922 | −85.809** |
| | | | | (147.732) | (33.633) | (13.049) |
| Sub-Saharan Africa | | | | 95.004 | −31.067 | −87.268** |
| | | | | (119.354) | (47.068) | (12.675) |
| Observations | 8,766 | 8,766 | 8,766 | 8,167 | 8,167 | 8,167 |
| Log Likelihood | −471.944 | −473.106 | −391.588 | −406.488 | −416.758 | −324.530 |
| Score (Logrank) Test | 154.966*** | 55.418*** | 112.333*** | 210.045*** | 89.029*** | 142.666*** |
| *Note:* | | | | | | *p<0.1; **p<0.05; ***p<0.01 |

### *7.3. Main Model Diagnostics*

Table 10.: P-values for proportional hazards assumption test

| | (1) Cumulat. Vic/Pol | (2) Cumulat. Force | (3) Cumulat. Splinter | (4) Decay Vic/Pol | (5) Decay Force | (6) Decay Splinter | (7) Year Vic/Pol | (8) Year Force | (9) Year Splinter |
|---|---|---|---|---|---|---|---|---|---|
| Fatalities (log) | 0.400 | 0.831 | 0.963 | 0.168 | 0.924 | 0.903 | 0.038 | 0.747 | 0.386 |
| Fatalities Sq. (log) | 0.185 | 0.125 | 0.455 | 0.403 | 0.290 | 0.219 | 0.060 | 0.812 | 0.197 |
| Left | 0.831 | 0.438 | 0.054 | 0.719 | 0.414 | 0.059 | 0.901 | 0.455 | 0.067 |
| Right | 0.422 | 0.695 | 0.569 | 0.322 | 0.926 | 0.543 | 0.393 | 0.854 | 0.495 |
| Nationalist | 0.991 | 0.545 | 0.061 | 0.845 | 0.446 | 0.061 | 0.943 | 0.544 | 0.056 |
| Regime | 0.047 | 0.262 | 0.723 | 0.048 | 0.176 | 0.689 | 0.049 | 0.165 | 0.820 |
| Policy | 0.038 | 0.401 | 0.223 | 0.029 | 0.332 | 0.213 | 0.029 | 0.289 | 0.236 |
| Territory | 0.784 | 0.875 | 0.323 | 0.740 | 0.807 | 0.376 | 0.728 | 0.775 | 0.281 |
| Attack Diversity | 0.316 | 0.352 | 0.487 | 0.159 | 0.528 | 0.599 | 0.170 | 0.707 | 0.698 |
| Share Trans. Terr | 0.010 | 0.431 | 0.888 | 0.011 | 0.373 | 0.890 | 0.027 | 0.429 | 0.883 |
| Multiple Bases | 0.001 | 0.081 | 0.917 | 0.001 | 0.074 | 0.946 | 0.000 | 0.080 | 0.907 |
| Pop (log) | 0.007 | 0.446 | 0.954 | 0.005 | 0.497 | 0.921 | 0.005 | 0.450 | 0.902 |
| GDP/Pop (log) | 0.019 | 0.500 | 0.181 | 0.024 | 0.603 | 0.205 | 0.017 | 0.561 | 0.227 |
| Democracy | 0.003 | 0.914 | 0.154 | 0.002 | 0.916 | 0.159 | 0.002 | 0.856 | 0.135 |
| Ethnic Frac. | 0.319 | 0.562 | 0.379 | 0.527 | 0.479 | 0.450 | 0.446 | 0.476 | 0.392 |
| Tropics | 0.013 | 0.072 | 0.499 | 0.023 | 0.161 | 0.634 | 0.010 | 0.153 | 0.683 |
| Elevation (log) | 0.367 | 0.026 | 0.939 | 0.383 | 0.056 | 0.938 | 0.406 | 0.043 | 0.962 |
| East Asia & Pacific | 0.602 | 0.788 | 0.858 | 0.608 | 0.671 | 0.886 | 0.331 | 0.786 | 0.734 |
| Europe & Central Asia | 0.033 | 0.523 | 0.334 | 0.033 | 0.355 | 0.378 | 0.029 | 0.441 | 0.422 |
| Latin Am. & Caribbean | 0.469 | 0.569 | 0.866 | 0.460 | 0.600 | 0.980 | 0.344 | 0.598 | 0.880 |
| North America | 0.069 | 0.601 | 0.128 | 0.045 | 0.685 | 0.105 | 0.034 | 0.608 | 0.095 |
| South Asia | 0.690 | 0.638 | 0.402 | 0.593 | 0.616 | 0.383 | 0.482 | 0.603 | 0.433 |
| Sub-Saharan Africa | 0.003 | 0.779 | 0.907 | 0.003 | 0.762 | 0.881 | 0.002 | 0.803 | 0.852 |
| GLOBAL | 0.000 | 0.169 | 0.227 | 0.000 | 0.221 | 0.085 | 0.000 | 0.561 | 0.279 |

Figure 6.: Schoenfeld Residuals For Ending by Victory: Yearly Fatalities Covariates

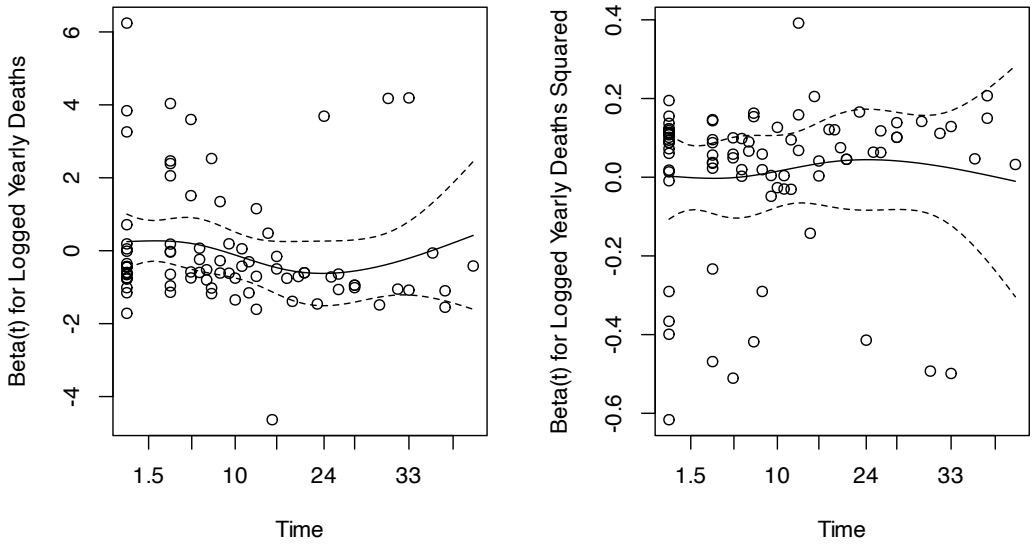


Table 11.: Models for Victory/Politics with Stratification and Time Interactions

| | *Dependent variable:* | | |
|---|---|---|---|
| | Cumulative | Decay | Yearly |
| | (1) | (2) | (3) |
| Fatalities (log) | 44.510*** | 36.349* | 23.271 |
| | (19.639) | (23.315) | (28.981) |
| Fatalities Sq. (log) | −2.922** | −3.054 | −1.428 |
| | (1.464) | (2.325) | (3.621) |
| Left | 253.481** | 236.898* | 264.562** |
| | (223.882) | (212.404) | (225.402) |
| Right | 375.444** | 375.953** | 450.855** |
| | (357.603) | (355.955) | (392.149) |
| Nationalist | 355.808** | 336.133** | 339.980** |
| | (274.531) | (263.970) | (261.889) |
| Territory | −70.276* | −68.394* | −66.816* |
| | (19.049) | (20.086) | (20.303) |
| Attack Diversity | −1.628** | −1.493* | −1.496 |
| | (0.812) | (0.823) | (0.968) |

| | | | |
|---|---|---|---|
| **Share Trans. Terr.** | $-3.977^{***}$ | $-3.823^{***}$ | $-2.726^{***}$ |
| | (0.752) | (0.749) | (0.715) |
| Pop (log) | $-21.426^{***}$ | | |
| | (6.571) | | |
| **Pop (log)** | | $-18.962^{*}$ | $-16.447^{*}$ |
| | | (10.022) | (8.937) |
| **GDP/Pop (log)** | −2.850 | −6.209 | −10.673 |
| | (12.177) | (13.400) | (8.972) |
| Democracy | −0.505 | −0.758 | −0.731 |
| | (0.626) | (0.608) | (0.592) |
| Ethnic Frac. | −0.043 | 0.103 | −0.095 |
| | (0.814) | (0.885) | (0.883) |
| Tropics | 0.153 | 0.214 | 0.311 |
| | (0.491) | (0.489) | (0.502) |
| Elevation (log) | 13.403 | 9.522 | 12.611 |
| | (18.355) | (19.422) | (19.567) |
| East Asia & Pacific | 163.264 | 120.259 | 53.388 |
| | (165.577) | (139.558) | (100.602) |
| Europe & Central Asia | | | $306.853^{**}$ |
| | | | (227.342) |
| Latin Am. & Caribbean | $541.554^{***}$ | $696.380^{***}$ | $514.006^{***}$ |
| | (458.861) | (589.262) | (406.459) |
| South Asia | $353.224^{**}$ | 126.015 | 64.835 |
| | (292.126) | (136.598) | (89.584) |
| Observations | 7,954 | 7,954 | 7,920 |
| Log Likelihood | −200.528 | −205.476 | −245.666 |
| Score (Logrank) Test | $96.121^{***}$ | $89.142^{***}$ | $73.946^{***}$ |

*Note:* $^{*}$p<0.1; $^{**}$p<0.05; $^{***}$p<0.01

*Bolded variables indicate time interactions.*

*Stratified variables are modeled but not estimated.*