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Power or progress: What terrorist group leaders really want

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Power or progress: What terrorist group leaders really want

by

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ABSTRACT

This paper examines how the different goals of terrorist group leaders affect their decision making calculus. This study uses a formal model and shows that terrorist group leaders who are more concerned with gaining concessions from the government are likely to use lower levels of violence. The empirical analysis echoes the results of the formal model and provides evidence for the external validity of the model. Taken together these results suggest that some of the variation in terrorist group lethality is due to variation in the terrorist group leaders' goals.

CHAPTER 1. INTRODUCTION

Many studies have explored the effects of the stated policy goals of terrorist organizations (Jones and Libicki, 2008a). Terrorist groups sometimes pursue survival goals such as recruitment and resources; however, most studies ultimately assume the actions of the group are being directed at their policy goals (Kydd and Walter, 2006; Crenshaw, 1981). This underlying assumption may be misguided in some cases. The decision making calculus of terrorist groups while pursuing policy goals is likely different than the decision making calculus of terrorist groups while pursuing survival goals. Being able to identify which of these decision structures is being used by a group and understanding how these different decision making structures affect the behavior of terrorist groups would be useful to both academics and policy makers.

Research has made the assumption that leaders of nations behave strategically to remain in power, and that the desire to remain in power often is better at explaining the actions of leaders than their policy platforms (Bueno de Mesquita and Smith, 2009). Why should we expect the leaders of terrorists groups to state their goals more sincerely? I argue that some groups have leaders that are primarily concerned with achieving their stated policy goals (policy-oriented), while some group leaders are primarily concerned with maintaining power (survival-oriented). This is not to say that survival-oriented groups do not have policy goals; however, maintaining power is the primary concern for leaders of survival-oriented groups.

The present study explores the effects of terrorist group goals on their lethality, and suggests two proxy measures, stated group goals and group hierarchy, that can be used to ascertain a group leader's true goals. As terrorist groups kill more civilians they are less likely to gain concessions (Abrahms et al., 2017), but they are better able to recruit members and acquire resources. Since survival-oriented groups are not greatly concerned with government concessions, they do not have

the same incentives as policy-oriented groups to lower their fatalities. For this reason, I expect that survival-oriented groups will be more lethal to civilians than are policy-oriented groups.

The manuscript proceeds as follows. First, I review the literature on terrorist group goals and terrorist group lethality. Next, I present a modified version of the Spence (1973) signaling game to show how a variation in how much the leader cares about concessions affects the riskiness of the attacks the group uses. I then empirically test whether survival-oriented or policy-oriented groups are more lethal towards civilians using a variety of proxy measures. Finally, I conclude and propose directions for future research.

Literature Review

Much research has been dedicated to explaining how organizational factors affect terrorist group decision-making (McCormick, 2003; Abrahms et al., 2017). The literature explores the distinction between the members of terrorist organizations and those who lead the organization. Terrorist organizations are typically formed by an elite, or a set of elites, who organize and mobilize people (Crenshaw, 1981). It is worthwhile to investigate this because leaders of an organization and the members have different demographic information as well as different levels of power and knowledge.

Arguments for why a rational actor would join a terrorist group are common and convincing (Richardson, 2006; Bueno de Mesquita, 2005a; Crenshaw, 1981). Many people join terrorist groups because they ascribe to the ideology or feel the desire for some sort of revenge (Richardson, 2006). Other research has argued that as legitimate economic opportunity decreases, the appeal of joining a terrorist group as a form of employment increases (Bueno de Mesquita, 2005b) . Abrahms (2008) argues that members of terrorist groups are not as goal-oriented as many believe; rather, people join terrorist groups for solidarity.

Another body of research has focused on the varying motivations of the leaders of terrorist groups. Studies have found that the leaders of terrorist groups are less supportive of civilian targeting than the members of the groups are, because leaders understand that civilian targeting is associated with a lower probability of success (Abrahms et al., 2017). However, this explanation

rests on the assumption that the leaders of terrorist groups are working towards concessions from the government. Many authors acknowledge that terrorist groups frequently pursue proximate goals such as advertising their cause (Kydd and Walter, 2006; Crenshaw, 1981). Richardson (2006) explicitly acknowledges that the goals of the leadership of a terrorist group may differ from those of the members of the group, but ultimately assumes that the group's leadership is primarily pursuing the group's stated goal. Chatagnier et al. (2012) find, by examining 23 decisions made by Al Queda, Hamas, and Hezbollah, that the decisions were driven by the group leader's desire to stay in power.

If we assume terrorist groups are rational actors (Crenshaw, 1981), we can also assume the leaders of the terrorist groups can decide strategically what level of violence to use. Terrorist groups do not always use the maximum amount of violence they are capable of. For example, on October 25, 1981, the Irish Republican Army(IRA) planted 3 bombs on Oxford Street in London. The IRA made telephone warnings of the bombs, which allowed authorities to evacuate thousands of civilians from the area. One bomb exploded, killing a bomb technician, the only causality of the attack (Downie, 500). Why would a terrorist group actively try to reduce the number of people killed by the attack?

I argue that this variation in lethality can be explained by the preferences of the terrorist group's leadership. Policy-oriented groups will tend to use a lower level of lethality than survival-oriented groups, because the policy-oriented groups need to maintain some level of legitimacy for the government to be able to consider negotiating with the group. Policy-oriented groups will still target civilians, however, because they still need to inflict some amount of harm for the government to grant concessions. Conversely, survival-oriented groups need to maintain control over their resources, whether that be civilians, territory or sources of income. Since the only means of control for most terrorist groups is their ability to harm, they will need to use lethality to maintain control.

CHAPTER 2. FORMAL MODEL

In this section, I present a game to explore the effects of variation in a terrorist group leader's preferences. This two-player imperfect information game is a variation of the **?**) signaling game. The game, presented in Figure 2.1, begins with a terrorist group leader, T, observing their type, $t \in \{0, 1\}$, which describes whether the group's leader values the stated policy goals of the group more ($t = 1$) or less ($t = 0$) strongly. Groups of type $t = 0$ have leaders that are more concerned with maintaining power than gaining policy concessions from the government. The probability of $t = 1$ is denoted by $\pi \in (0, 1)$. After observing t, T chooses whether to order a high-risk (high expected civilian casualties) or a low-risk (low expected civilian casualties) attack. A low-risk attack is denoted by $e = 1$ and a high-risk attack is denoted by $e = 0$.

The government, G, observes the riskiness of the attack, e, but not the terrorist's type, t. The government then decides whether to reward the group with policy concessions, denoted by $r = 1$, or not, denoted by $r = 0$. Then the game ends. The players' payoffs are as follows:

$$u_T(e, r|t) = (\beta + tk)r - e,$$
$$u_G(e, r|t) = (t - \tau)r - e,$$

where $\beta \in (0, 1)$, $k \in (0, 1)$, and $\tau \in (0, 1)$ are common knowledge to the players. The parameter β represents the value of concessions to the terrorist group if $t = 0$; k represents the additional value that a group of type $t = 1$ gets from policy concessions. τ represents the political costs to the government for granting concessions to the terrorist group. The $-e$ term in the terrorist's payoff represents the opportunity costs of choosing a low-risk attack over a high-risk attack, which would attract more potential members. The government also has a $-e$ in their payoff. Low-risk attacks

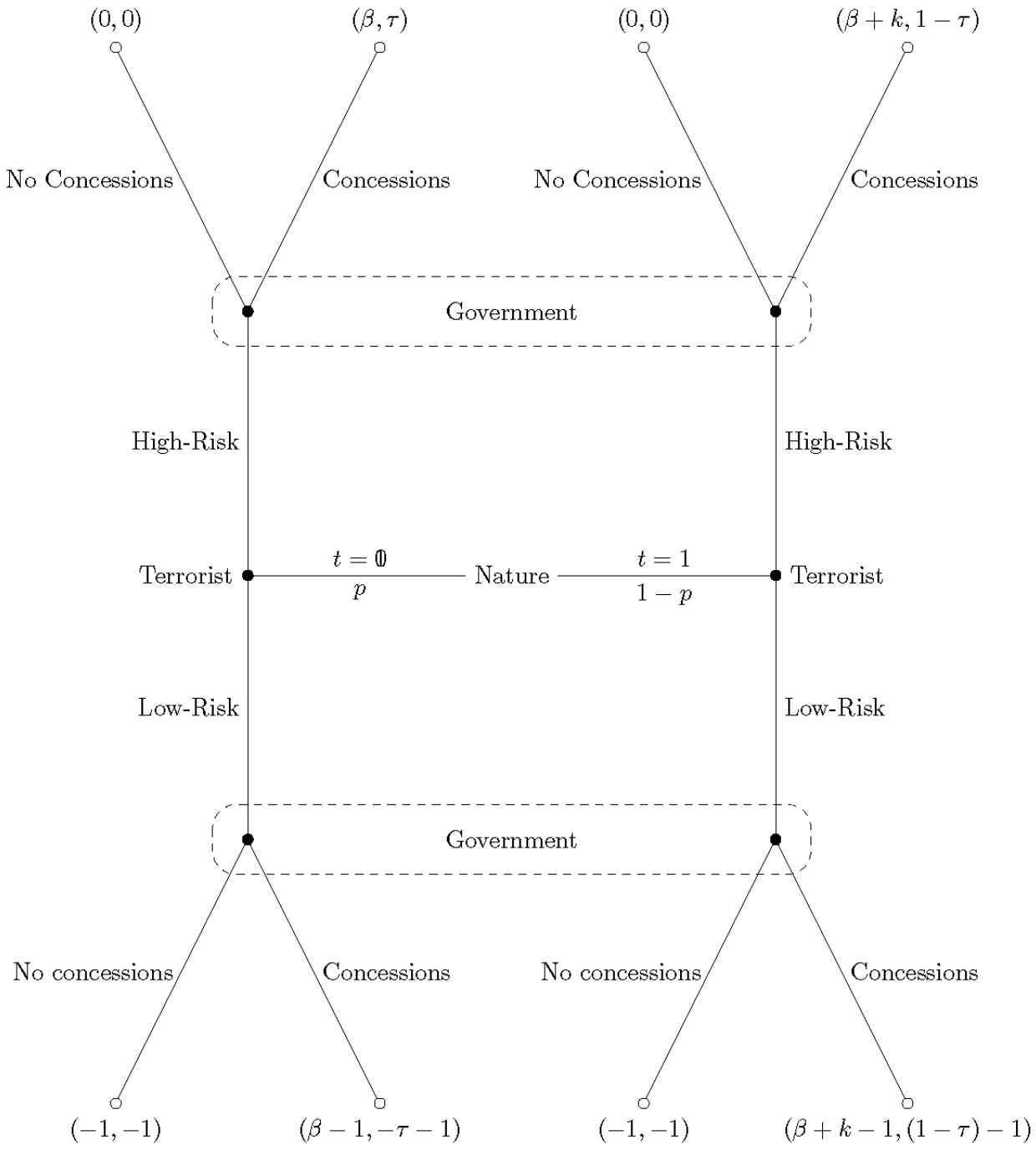

Figure 2.1 Extended form game

Table 2.1 Summary of model parameters

Parameter	Constraints	Description
p	$p \in (0,1)$	Probability of terrorist group being policy-oriented
t	$t \in \{0,1\}$	Terrorist group type: $t = 1$ = policy-oriented or $t = 0$ = survival-oriented
β	$\beta \in (0,1)$	Value of concessions
k	$k \in (0,1)$	Extra value policy-oriented groups get from concessions
τ	$\tau \in (0,1)$	Political cost of granting concessions

disrupt the public but do not grant the government the same military or surveillance increase that a riskier attack would allow for. The game's parameters are described in Table 2.1.

Separating Equilibria

There are two possible separating equilibria, one in which the survival-oriented group ($t = 0$) choose high-risk attacks ($e = 0$) and the policy-oriented group ($t = 1$) choose low-risk attacks ($e = 1$), and one where survival-oriented groups ($t = 0$) choose low-risk attacks ($e = 1$) and the policy-oriented groups ($t = 1$) choose high-risk attacks ($e = 0$).

Equilibrium 1:Separation with Policy-Oriented Groups Choosing Low-Risk Attacks

In an equilibrium of this form, policy-oriented groups signal their desire to negotiate with the government for concessions, by choosing low-risk attacks intentionally to reduce the number of civilians killed in attacks. The survival-oriented groups do not have this same incentive, and use high-risk attacks to maximize the reach of their message. Because of this separation, the government is able to deduce which group type they are facing.

More formally:

$$s_T^*(t) = t$$

$$b(e) = e$$

$$s_G^*(e) = e$$

This is an equilibrium only if the survival-oriented group finds it more beneficial to continue using high-risk attacks than to mimic the policy-oriented group and use low-risk attacks. This condition holds when:

$$u_T(0, s_G^*(0)|t = 0) \geq u_T(1, s_G^*(1)|t = 0),$$
$$\beta 0 - 0(1 - 0k) \geq \beta 1 - 1(1 - 0k),$$
$$0 \geq \beta - 1,$$
$$\beta \leq 1,$$

Since β is bounded between 0 and 1 this condition will hold in all cases.

For this equilibrium to hold, the policy-oriented groups must value concessions more than they value the benefits of using a high-risk attack.

$$u_T(0, s_G^*(0)|t = 1) \geq u_T(1, s_G^*(1)|t = 1),$$
$$\beta 0 - 0(1 - k) \geq \beta 1 - 1(1 - k),$$
$$0 \geq \beta - 1 + k,$$
$$1 - \beta \leq k.$$
$$1 \leq k + \beta$$

Thus, this is an equilibrium if and only if the total value that the policy-oriented group places on concessions is greater than 1. This suggests that separation of group type is possible only if the policy concession is valuable enough to entice the policy-oriented groups.

Separation with Policy-Oriented Groups Choosing High-Risk Attacks

This kind of strategy profile is never an equilibrium because, as demonstrated above, the survival-oriented groups would require the value of concessions, β, to be greater than 1 for this equilibrium to hold. Furthermore, in this equilibrium, the government would not grant concessions to the survival-oriented group, so the survival-oriented group could increase their utility by choosing a high-risk attack.

Pooling Equilibria

There are two potential pooling equilibria, one where both types use high-risk attacks and one where both types use low-risk attacks.

Equilibria 2: Pooling on High-Risk Attacks

Suppose $s_T^*(0) = s_T^*(1) = 0$: both group types use high-risk attacks. In any equilibrium of this type, the government's beliefs about group type must be that $b(0) = \pi$. The government's response to observing a low-risk attack depends on π and τ. Then there are two relevant cases.

The first relevant case for pooling on high-risk attacks is when $\pi > \tau$. If $\pi > \tau$ then $s_G^*(0) = 1$ in equilibrium. That is, the government's best response to a high-risk attack is to grant policy concessions. This implies that neither type of terrorist would prefer to deviate from the high-risk strategy, because this will reduce their payoff by at least $1 - k$ (for the policy-oriented groups) or by 1 (for the survival-oriented groups). The terrorist's payoff may be reduced further depending on the government's beliefs off-the-equilibrium-path (i.e., seeing a low-risk attack in a world where both group types use high-risk attacks). These equilibria can be defined for all $x \in [0, 1]$, where x is the government's off-the-equilibrium-path beliefs.

$$s_T^*(t) = 0 \text{ for all } t,$$

$$b(e) = \begin{cases} \pi & \text{if } e = 0, \\ x & \text{if e} = 1, \end{cases}$$

$$s_G^*(e) = \begin{cases} 1 & \text{if } e = 0, \\ 1 & \text{if } e = 1 \text{ and } x \geq \tau, \\ 0 & \text{if } e = 1 \text{ and } x > \tau \end{cases}$$

The government's best response to high-risk attacks in this equilibrium is to grant policy concessions. If the government sees a low-risk attack in a world where all terrorist groups are using high-risk attacks, then the government's best response depends on how likely they believe it is that a group is policy-oriented. If the government's belief that the terrorist group is policy-oriented is greater than the relative cost of granting concessions to a survival-oriented group then the government's best response to a low-risk attack is policy concessions. If the government is not confident that the group is policy-oriented or if the cost of rewarding a survival-oriented group is too high, then their best response is not to grant concessions.

The second relevant case for pooling on high-risk attacks is when $\pi < \tau$. If $\pi < \tau$, then $s *_G (0) = 0$ in equilibrium. In this case, the government's off-the-equilibrium-path beliefs are very important. In particular, all equilibria of this form must be consistent with the following for $x \in [0, \tau]$:

$$s *_T (t) = 0 \text{ for all } t,$$

$$b(e) = \begin{cases} \pi & \text{if } e = 0, \\ \text{x} \leq \tau & \text{if } e = 1, \end{cases}$$

$$s *_G (e) = 0 \text{ for all } e.$$

When $\pi < \tau$ the cost of rewarding a survival-oriented group is greater than the probability that the group is policy-oriented. The government's best response is then not to grant policy concessions.

Pooling on Low-Risk Attacks

Suppose now that both types of terrorist groups use low-risk attacks ($s *_T (0) = s *_T (1) = 1$). In any equilibrium of this form, the government's beliefs must satisfy $b(1) = \pi$ and there is no restriction on $b(0)$.

If $\pi > \tau$ then $s *_G (1) = 1$ in equilibrium. This will be an equilibrium only if the government does not reward high-risk attacks with certainty, because if it did both group types would benefit from changing to a high-risk attack. The set of equilibria that satisfy these conditions can be defined as follows for all $x \in [0, \tau]$:

$$
\begin{aligned}
s *_T (t) = &\ \text{for all } t, \\
b(e) = &\begin{cases} \mathrm{x} \leq \tau & \text{if } e = 0, \\ \pi & \text{if } e = 1, \end{cases} \\
s *_G (e) = &\begin{cases} 0 & \text{if } e = 0, \\ 1 & \text{if } e = 1, \end{cases}
\end{aligned}
$$

If $\pi < \tau$ then $s *_G (1) = 0$ in equilibrium. This will never be in equilibrium, because both types can increase their payoff by choosing a high-risk attack.

Semi-separating Equilibrium

There are three types of equilibria involving randomization by one or more of the terrorist group types, depending on which of the types (or both) are using mixed strategies.

The Survival-Oriented Group using a Mixed Strategy

This type of equilibrium must involve the policy-oriented type ($t = 1$) always using low-risk attacks ($e = 1$) and the survival-oriented group ($t = 0$) mixing between both types of attacks with some probability $p \in (0, 1)$. Furthermore, the government must not reward high-risk attacks and reward low-risk attacks with some positive probability less than 1.

In this type of equilibrium we have:

$$s_T^*(t) = \begin{cases} 1 & \text{if } t = 1, \\ \text{p} & \text{if } t = 0, \end{cases}$$

$$b(e) = \begin{cases} 0 & \text{if } e = 0, \\ \tau & \text{if } e = 1, \end{cases}$$

$$s_G^*(e) = \begin{cases} 0 & \text{if } e = 0, \\ \text{q} & \text{if } e = 1, \end{cases}$$

The values for p and q are derived from the following conditions:

$$\begin{aligned} EU_T(0, s_G(0)|0) &= EU_T(1, s_G(1)|0), \\ 0 &= q\beta - 1, \\ q &= \frac{1}{\beta}, \end{aligned}$$

and

$$\begin{aligned} \frac{\pi}{\pi + (1-\pi)p} &= \tau, \\ \pi &= \tau(\pi + (1-\pi)p), \\ p &= \frac{(1-\tau)\pi}{\tau(1-\pi)} \end{aligned}$$

Notice that this equilibrium can exist only if

$$\beta > 1,$$
$$\frac{(1-\tau)\pi}{\tau(1-\pi)} < 1,$$

and this second inequality is equivalent to $\pi < \tau$. The first inequality is the same as saying that the rewards of concessions are sufficiently high possibly to motivate the survival-oriented group to lose the benefits of high-risk attacks. The second inequality implies that the policy-oriented types are sufficiently rare that in absence of a signal provided by the type of attack the government would not offer any concessions to the group.

The Policy-Oriented Type Using a Mixed Strategy

This can never be an equilibrium, because either (1) the government must award all low-risk attacks with certainty (if $s_T(0) = 0$), implying that the policy-oriented group would strictly benefit from always choosing low-risk attacks or (2) the survival-oriented type can benefit from choosing high-risk attacks.

Both Types Using Mixed Strategies

This can never be an equilibrium.

Implications

Figure 2 Shows the values of k under which the two pure-strategy equilibria hold. When k is less than $1-\beta$, both survival-oriented and policy-oriented groups chose high-risk attacks. However, when k is greater than $1-\beta$, policy-oriented groups choose low-risk attacks and survival-oriented groups choose high-risk attacks.

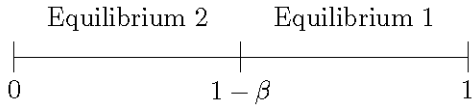

Figure 2.2 Equilibria Conditions for the value of k

The key implication of the above game is that groups that are less committed to their stated policy goals are going to launch riskier attacks than groups that are more committed to their stated goals. As the riskiness of attacks increases, the number of civilian casualties will also increase. This leads to the hypothesis to be tested in the next section:

Research Hypothesis: As groups value concessions more, they will kill and injure fewer civilians

CHAPTER 3. RESEARCH DESIGN

To test the insights gained from the above game, I use yearly data on terrorist groups from 1970–2016. Data on terrorist groups comes from the Extended Data on Terrorist Groups (EDTG) (Hou et al., 2019). This data set combines information drawn from the Global Terrorism Database (GTD); Asal et al. (2018); and Jones and Libicki (2008a). The terrorist groups included in EDTG were decided by GTD staff and uses data from Jones and Libicki (2008a) and Blomberg et al. (2011) to determine when the start and end dates of the groups (Hou et al., 2019).

Dependent Variable

The dependent variable, *non-terrorist casualties*, is a count of deaths and injuries resulting from a terrorist group, excluding the perpetrator, in a given year. Since the game focuses on the riskiness of the attack, using a measure that includes both civilian injuries and deaths is appropriate.

Independent Variables

Since the intentions of group leaders are not directly observable, I use two proxy measures. The first measure used is the group's *stated goals*. EDTG gives 4 possible stated group goals; policy-change, territory-change, system-wide change, and status quo goals. While the data set includes 4 different group types, groups with status quo goals are excluded from this study because they are primarily para-military groups which are theoretically distinct from terrorist groups. The remaining group types are dummy variables coded 1 if the goal type best describes the group's stated goals and 0 if it does not.

These goals vary in their aim and breadth, particularly from the state's perspective. *Policy-change goals* are the narrowest of the goals. Groups with policy-change goals have specific, clearly defined goals. *Territorial change goals* are broader than policy-change goals. Groups with territorial

change goals are concerned with getting the government to give up power over a certain territory. *System-change goals* are the broadest set of goals. Groups with system-change policy goals want sweeping change over the nation-state system as a whole. This can include regime change, the creation of a caliphate, or the global implementation of sharia law. ISIL and the Taliban are two notable examples of this group type.

Previous literature has explored the effect of a group's stated goals and the duration of the group. Hou et al. (2019) and Jones and Libicki (2008b) argue that broad policy goals make it less likely that the government will be willing to grant concessions, and therefore the groups continue without a foreseeable end. If the government's unwillingness to grant concessions is the only effect of the group's stated policy goals, there would be no reason to expect an increase in group lethality with broader policy goals. I argue, however, that leaders of groups understand that as their goals broaden they are less likely to achieve their stated goals. If leaders of a group know that their goal is not achievable, then they also understand that their attacks are a means to recruitment of new members and maintain the group rather than a concerted effort to change the status quo.

The second proxy for group intentions is whether the group has a *hierarchical structure*. A hierarchical structure refers to groups that have a clear leader with control over the entire group in a top-down approach. Some groups do not have a hierarchical structure, but rather have several cells that are relatively autonomous or may not have a clearly defined leader. A hierarchical structure makes it easier for leaders to use the group to funnel resources to themselves. Furthermore, groups with a hierarchical structure have leaders that are able to control the level of lethality used by the group (Abrahms, 2018). This means that the group leader has more control over whether the group prioritizes organizational maintenance over group effectiveness. This variable is coded 1 if the group has a hierarchical structure and 0 if it does not.

Controls

I control for several confounding variables. First, I control for the *number of attacks* in a given year. Groups that attack more frequently have more opportunities to kill civilians. Since I am

concerned with the riskiness of the attacks and not the activity level of the group it is important to control for the number of attacks.

Next I control for *diversity of attacks*. Attack diversity has been found to be associated with an increase in the longevity of a terrorist group (Gaibulloev and Sandler, 2013).

Next, I control for the *age* of the group. The age of the group is a count of years that the group has been active since their inception. Previous literature has shown that older groups kill fewer civilians than younger groups. However, very young groups may not have the resources or skills they need in order to commit their desired number of attacks.

Next, I control for *democracy*. Previous literature has found competing results regarding the effects of democracy on terrorism (Gaibulloev and Sandler, 2013; Chenoweth, 2013; Li, 2005), but it is consistent in predicting that democracies are more likely to report terrorism when it does occur (Drakos and Gofas, 2006). I account for the level of democracy in a country using the *v2x_polyarchy* score from the V-Dem data set (Teorell et al., 2016). I also control for GDP of the primary base country of a group. This is meant to represent the capabilities of the government to prevent attacks.

Next I control for government capabilities. I use the country's *CINC* score to measure this. Government capability may have competing effects on terrorist group lethality. On the one hand, terrorist groups are less likely to form in countries with higher capabilities (Sandler and Lapan, 1988). However, groups that do form under these conditions may feel the need to attack with greater lethality in order to compete with a stronger government.

Methodology

To test the theory, I use zero-inflated negative binomial models. Since the data on the number of attacks and the number of causalities are based primarily on news sources, there are an inflated number of zeros in the data, which can occur from two different processes. In some group-years there are zero attacks, and the data should show that no attacks occurred. However, some group-years report having zero attacks even when attacks do occur because of reporting bias. The non-reporting of attacks is not random; democracies and countries with a free press are more likely to

report terrorist attacks when they do occur (Cook et al., 2017; Bell et al., 2014; Drakos and Gofas, 2006).

The zero-inflated binomial equation is split into two parts: a logit portion that predicts the probability of attacks being reported, and a negative binomial portion that predicts the number of casualties given that any are reported.

CHAPTER 4. RESULTS

Table 4.1 shows the results of the zero-inflated negative binomial models with non-terrorist casualties as the dependent variable. In Model 1, the groups with policy-change and territorial-change goals are compared to a reference category of groups with system-change goals. Policy-change goals are narrower than territorial-change goals which are narrower than system-change goals, and I expect that groups with narrower goals will kill fewer civilians. In this model, coefficients are negative and statistically significant for policy-change and territorial-change goals. This means that groups with policy-change goals or territorial-change goals kill and injure fewer civilians than groups with system-change goals. These findings provide support for Hypothesis 1, and suggest that groups with narrower policy goals kill and injure fewer civilians.

In all models, the primary control variables behave as expected. The positive coefficient on number of attacks suggests that an increase in the number of attacks in a given year leads to an increase in the number of non-terrorist casualties. Groups with higher attack diversity have a higher number of non-civilian casualties. The negative coefficient on age of group shows that as groups get older they kill fewer civilians.

Model 2 is similar to Model 1 except that the groups that had a year where they have non-terrorist casualties 3 standard deviations above the mean were excluded from the analysis. We see that most of the results from Model 1 hold except that now the coefficient on territory-change goals is now positive and statistically significant.

To help with interpretation of the model coefficients, Figure 4.1 shows the predicted number of non-terrorist casualties for the different group types. The predicted number of non-terrorist casualties for the three group goals is predicted using Model 1 using the mean values of the model predictors. The predicted number of civilian casualties is highest for system-change groups, then territory-change groups, and lowest for policy-change groups. The size of the standard errors follows

Table 4.1 Zero-Inflated Negative Binomial Models of Number of Non-Terrorist Casualties

	(1)	(2)	(3)	(4)
Policy Change	-3.233^{***}	-1.342^{***}	-6.325^{***}	-4.298^{***}
	(0.384)	(0.370)	(0.724)	(0.726)
Territory Change	-0.868^{***}	0.436^{**}	-0.789^{**}	0.988^{***}
	(0.232)	(0.219)	(0.329)	(0.321)
Hierarchy	0.254	-0.291		
	(0.236)	(0.219)		
Policy*Hierarchy			-1.824^{***}	0.097
			(0.708)	(0.647)
Territory*Hierarchy			-1.254^{***}	0.248
			(0.247)	(0.238)
System Change			-0.608	0.470
			(0.427)	(0.395)
Number of Attacks	0.044^{***}	0.125^{***}	0.047^{***}	0.122^{***}
	(0.011)	(0.023)	(0.011)	(0.022)
Diversity	2.704^{***}	2.960^{***}	2.463^{***}	2.698^{***}
	(0.519)	(0.509)	(0.517)	(0.497)
Age of Group	-0.040^{***}	-0.039^{***}	-0.024^{**}	-0.030^{***}
	(0.011)	(0.009)	(0.010)	(0.009)
Constant	3.644^{***}	2.014^{***}	3.747^{***}	1.667^{***}
	(0.295)	(0.290)	(0.218)	(0.246)
Observations	952	844	952	844
Log Likelihood	$-2{,}730.043$	$-2{,}032.866$	$-2{,}715.799$	$-2{,}015.500$

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

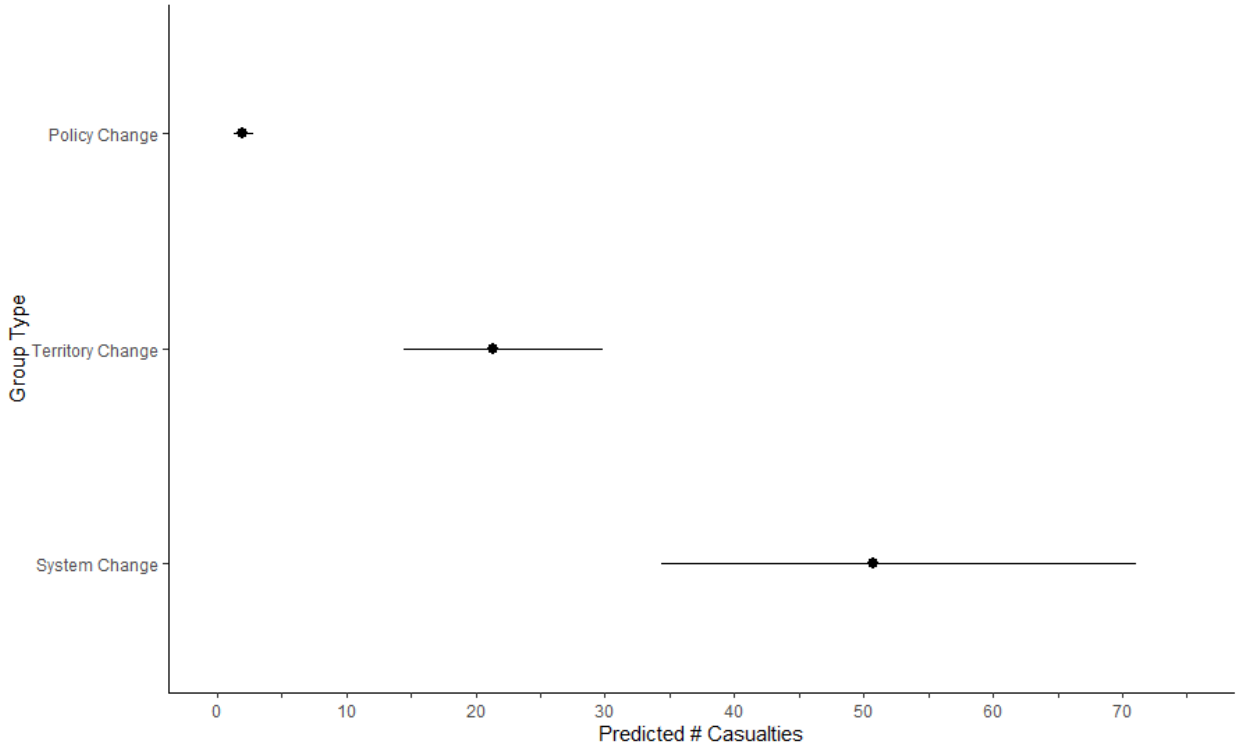

Figure 4.1 Model 1 predicted non-terrorist casualties by group goal

the same pattern as the predicted non-terrorist casualties. This suggests that the system-change groups have the highest variation in the level of violence used, while policy-change groups have the least variation.

Figure 4.2 shows the substantive effects of a group's stated policy goals and hierarchy, in a method similar to Figure 4.1. As in the previous figure, policy change goals are associated with the fewest number of casualties, followed by territory change goals and then system change goals. For policy change and system change groups, a hierarchical structure increases the predicted number of casualties. For territory change groups, hierarchy reduces the number of predicted casualties.

These results together show strong support for the proposition that some groups are more concerned with achieving their stated policy goals than others. Groups with broad policy goals and a hierarchical structure are more likely to be run by leaders who are more concerned with maintaining power than achieving policy goals. Conversely, groups with narrow policy goals and

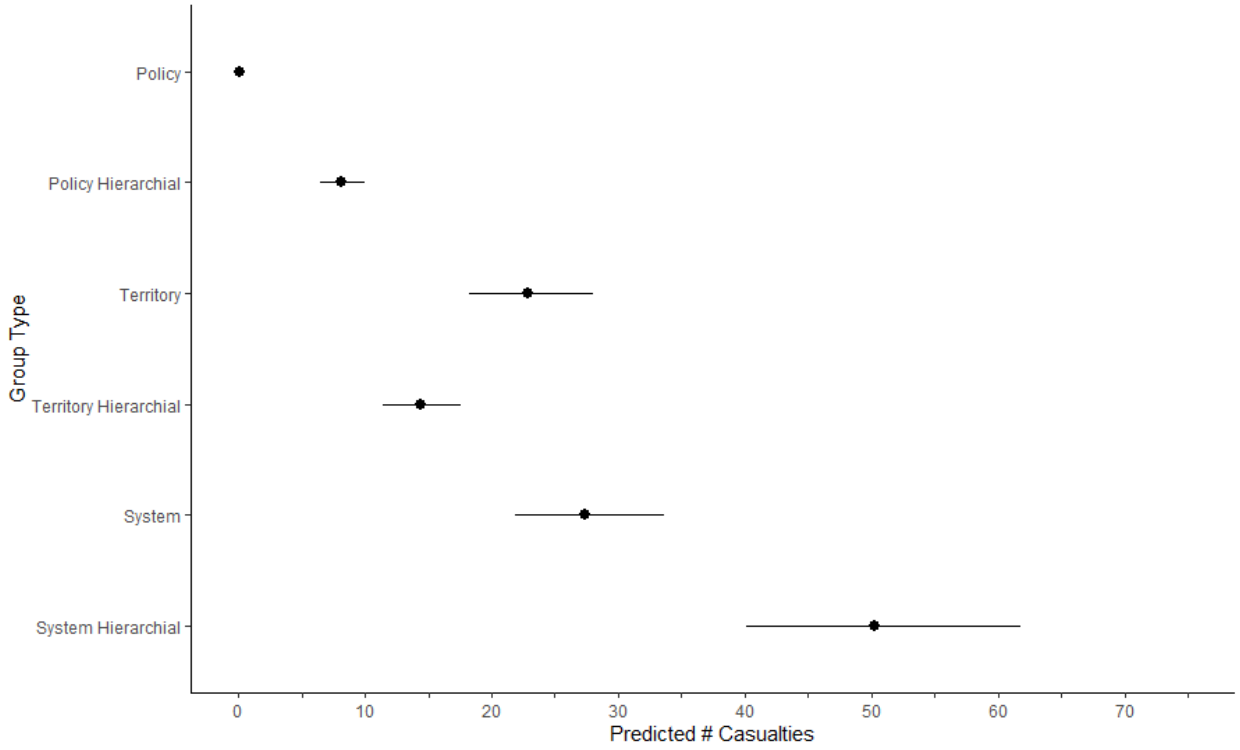

Figure 4.2 Interaction Model predicted non-terrorist casualties by group goal

a less hierarchical structure are more likely to be run by a leader who is more concerned with achieving policy goals.

CHAPTER 5. SUMMARY AND DISCUSSION

This study has shown that groups with survival-oriented leaders are more lethal than groups with policy-oriented leaders. I define a survival-oriented leader as one who is concerned primarily with maintaining power and a policy-oriented leader as one who is concerned primarily with gaining concessions from a government. In this thesis, I use a formal model to show how variation in how much value a terrorist group leader places on concessions can affect the group's lethality. I then tested the results of the formal model empirically using the group's stated goals and group structure as proxy measures for how much the group cares about concessions.

This exploration is a novel addition to the body of research on terrorist group lethality, because previous literature had assumed that terrorist groups were pursuing their stated goals. One direct application of this approach is to the terrorist group duration literature. Up to this point, the literature has ignored the possibility that some leaders have no desire to let the group end. If a terrorist group is lead by people whose primary concern is remaining in power, then the group may last longer than a group led by someone who is concerned with gaining policy concessions.

Despite the contributions this study makes to the literature, a possible limitation of this study is that it uses a series of proxy measures for the value that group leaders place on concessions. In future work I hope to work towards a more direct measure of goal-oriented and survival-oriented groups.

This research also has policy implications. Knowing that there are some groups that can be negotiated with is a valuable insight for effective counter-terrorism policy. policy makers can use the policy-oriented and survival-oriented distinction to make more informed decisions about which groups can be negotiated with, and allows them to allocate counter-terrorism resources more efficiently. Furthermore, this study provides some general measures to help policy makers better predict which groups can be negotiated with.

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