

Pink Slips From the Underground: Changes in Terror Leadership

Abstract

Personnel management at the top of terrorist groups presents a puzzle. Commanders act off-message reasonably often, sometimes angering powerful backers. When this happens group leaders typically have the means, and every incentive, to kill the offending commander. Yet we often observe group leaders dismissing them instead, allowing the commanders an opportunity to work against the movement by providing aid to the government or starting a competing group. Why would rational leaders act this way? Using a formal model, we argue that this is a consequence of a problem common in organizational behavior, but underexplored in the study of terrorist organizations: having to satisfy two “masters.” Our model elucidates the substantive factors that underlie a leader’s fraught personnel decision when caught in such a bind, here conceptualized as between backers and an important constituency. We develop implications for organizational functioning and structure, government action against groups, and the effect of technological innovations on leader incentives.

In July of 2013, a document circulated through the tribal areas of Pakistan announcing that the Tehrik-e-Taliban (TTP) had dismissed their spokesman, Sajjad Momand, for “[making] comments that have raised the danger of divisions between the Pakistani Taliban and the Afghan Taliban.” (Zahra-Malik and Mehsud, 2013). This dismissal followed pressure on the TTP to take action to reduce these divisions. For example, a TTP commander described a tradeoff between loyalty to Momand and satisfying important backers, reporting, “after Ehsan’s damaging statements, the Afghan Taliban asked us not to use its stationery or its flag...This is unacceptable for us” (Zahra-Malik and Mehsud, 2013). Underscoring the impression that the TTP was pressured to remove Momand, the spokesman had reportedly been issuing statements without coordination or approval from the TTP leadership for some time (Shah, 2013). This detail suggests that the TTP’s leaders were not simply seizing a pretext to remove Momand; if so, they had ample prior opportunities.

Although there was significant speculation in local and international media that these actions heralded a rupture in the alliance between the TTP and the Afghan Taliban which might affect the TTP’s 6-year-long insurgency, less attention focused on one of the most intriguing elements of the story: that it happened at all. Rather than force him out, the TTP could have simply killed the troublesome spokesman. Notoriously brutal, the organization had a precedent of slaying former allies and compatriots.¹ Yet, despite the TTP’s record of internecine violence, Momand appears to have escaped unscathed. He remained active on social media sites through 2016, before resurfacing as a mouthpiece for a regional TTP branch, and eventually surrendering to the Pakistani government in April, 2017 (dai, 2017).

As main spokesman for the group, Momand had access to information about the TTP’s

¹Most notably, in February 2011, the TTP released a video documenting their assassination of an important former trainer of the Afghan Taliban, Sultan Amir Tarar. Alongside the video, the TTP issued a statement which simultaneously justified targeting an associate and signaled willingness to turn on current comrades. They castigated Tarar for working with Pakistani intelligence, branding him as among “the two-faced hypocrites and mischief makers” who are a “deadly poison” to the jihadi cause. Stating that such individuals “...may be disguised as a Mujahid today,” the TTP claimed that purges are “actually the responsibility of the Taliban” (Al-Qadisiyyah Media, 2011). Tarar’s execution was not an isolated occurrence of fratricidal behavior: in both 2012 and 2013, TTP-affiliated suicide bombers attacked the headquarters a former TTP commander who had splintered from the group in 2009 and was reported to have defected to the government (News, 2013).

operations and the means to reach internationally-wanted terrorists. Propaganda videos regularly featured Ehsan alongside then-leader Hakimullah Mehsud, suggesting direct contact with TTP leadership. This access had value: in 2010, the United States announced a multi-million dollar bounty for information about Mehsud’s location (Rewards For Justice Program, 2010). Firing Momand not only meant forgoing his skills; it also introduced the risk that, cut loose from the TTP, he would defect to the government or a rival organization.

The decision to sack Momand, and publicize his removal, raises an empirical puzzle for understanding organizational dynamics of militant and terror groups: why would a clandestine organization under pressure from an important backer choose to expel otherwise capable commanders or senior members? Presumably the backers would prefer things to be handled quietly, and the leader has options: he can kill or discipline the commander internally. Yet, sometimes, such as in the case sketched above, the leadership chooses to fire, a risky and public act.

To address this question we offer a game-theoretic model inspired by the TTP’s apparent dilemma, whereby a powerful backer demands the removal of an important commander. We argue that the difficulty for the group comes into play when it also has incentive *not* to satisfy its backers by killing the commander. This incentive can arise from the functional benefit of the commander or from another important constituency that explicitly does not want the commander punished. Further, it can occur regardless of whether angered parties are internal or external to the group, and for internal or external constituencies as well.² The problem we identify—that of satisfying two “masters”—is common in organizational behavior, yet remains underexplored in the study of terrorist organizations. As we show, its consequences have substantial implications for group functioning and thus for government counter-terror policy.

The challenge for group leaders is to balance the preferences of backer and constituency, taking into account the functional benefit of the commander. We conceptualize the group’s

²For clarity, we will consistently refer to the parties that desire punishment of the commander as the group’s *backer*, and the parties with the opposite preferences as the commander’s *constituency*.

response to this task as a stark choice: it can (i) fire the commander, risking his defection, disapproval from the backer, and constituency support; (ii) kill the commander, satisfying the backer but risking constituency support; or (iii) maintain the status quo by relying on private internal discipline, keeping the commander’s skills and constituency support but risking maximal backer ire.³ This backer-constituency dilemma is distinct from previous work on militant-backer relationships, which has focused on interactions between militants and the community (*e.g.*, Salehyan 2010; Salehyan et al. 2014), provision of violence (Asal and Phillips, 2015), and principal-agent conflict between backers and groups (Byman and Kreps, 2010).

Our approach provides insights into how organizational structure can create intra-group tensions that result in actions that reflect an inefficient or irrational use of resources when evaluated through the framework of conflict against the government. As such our model complements a growing consensus on the importance of organizational structure for understanding militant behavior (*e.g.*, Abrahms and Potter, 2015; Asal and Rethemeyer, 2008; Chai, 1993; Helfstein, 2009; Shapiro, 2013; Shapiro and Siegel, 2007, 2012).

In highlighting dilemmas faced by an organization squeezed between irreconcilable demands of two, or more, bases of support, we primarily, though not exclusively, draw examples from contemporary jihadi terror-insurgency organizations that maintain transnational backers, face relentless American-led and financed security operations, and are subject to international media interest. The combination of these factors magnifies the dilemma that we analyze and pushes the groups’ actions onto the international stage. However, the increasing internationalization of insurgency and terrorism suggest that the core dynamic we identify is poised to bind an ever-widening circle of militant organizations.

The paper proceeds as follows. We begin by elaborating important costs of firing a commander, then present and analyze a simple game-theoretic model of a leader’s decision

³We discuss in the model section why this choice might draw the backer’s maximal ire. In general, the consequences of angering backers should not be minimized. For example, on July 26, 2013, fighters from an Afghan Taliban-backed coalition of rival jihadi militant groups attacked TTP positions in Waziristan, taking revenge for past TTP transgressions.

when experiencing pressure from a backer to remove a commander. The model and analysis explore how contextual factors—such as the commander’s power and the influence and origin of the commander’s base—constrain disciplinary options open to leaders. Finally, we conclude with a discussion of implications of our model for the operation of militant organizations that rely on a combination of allies, international backers, and support from local community constituencies in order to act against an opponent with preponderant military capabilities.

Dangerous Choices

Firing is costly for clandestine organizations, yet, despite the risks, clandestine groups do occasionally undertake this action. We argue in this section that the magnitude of the costs of firing is such that it is surprising that terror leaders would ever publicly dismiss senior members, particularly when the firing is carried out for bureaucratic or political reasons.

First, public announcements that a senior commander has been dismissed are often interpreted as signals of weakness. For example, after Momand’s removal from the TTP, the *New York Times* wrote that the action “was widely seen as a sign of growing strains within the cross-border insurgency movement” (Walsh and Khan, 2013). Similarly, *Reuters* theorized that Momand’s dismissal reflected not only TTP weakness, but also erosion of the Afghan Taliban, adding: “any further divisions within the movement are likely to weaken the Afghan Taliban’s fight against Western forces” (Zahra-Malik and Mehsud, 2013). Signaling weakness is dangerous; it can be detrimental to relations between a terrorist group and the community and to the group’s ability to generate funds and recruits. Perception of weakness may also invite violence from other rebel movements or a renewed campaign of repression from the government (Fjelde and Nilsson, 2012).⁴

⁴Trying to dismiss a commander and then following up by killing the commander can also exacerbate perceptions of weakness if not carried out successfully. Consider the dismissal of the leader of the TTP’s Punjab wing, Asamatullah Moavia (Kharal, 2013). Reports indicated that the TTP was incensed that Moavia had unilaterally responded to overtures from the Pakistani government, suggesting that his dismissal was intended to reaffirm internal control structures. Immediately after Moavia’s dismissal, alleged members of the TTP ransacked houses, offices, and “known hangouts” of the commander, in a rumored assassination

Second, a sacked commander may introduce local competition given his often-strong base of community support. This can erode the capability of the parent organization. If he forms a competing group, splintering can lead to conflict outcomes—such as higher levels of violence—that are counterproductive for the parent group (Bloom, 2004; Findley and Young, 2012).

Third, erosion of leadership can be devastating (Crenshaw, 1991). Dismissing commanders can undermine internal discipline and cohesion by disrupting mechanisms developed to control cadres.⁵ Eroding internal discipline is not undertaken lightly: many clandestine groups invest heavily in developing and maintaining disciplinary structures that are often considerably harsher than dismissal (Shapiro, 2013). Observing the continued survival of commanders that have crossed their superiors may induce a reduction in the rank-and-file's expected costs of disobedience, producing long-term implications for group functioning.⁶

Fourth, firing releases potentially-disgruntled former members with intimate knowledge of the organization. Even if the group retains leverage to ensure that the fired commander will not openly work against it, former members can do significant covert damage to their erstwhile compatriots. Notably, disgruntled former operatives are targets for recruitment by intelligence agencies. For example, British intelligence reportedly found that high-level IRA members who left the group on poor terms were susceptible to recruitment pitches (Mobley, 2012, 49). The dismissal-to-intelligence pipeline is evident in British cultivation of Frank Hegarty, a one-time quartermaster for the IRA's Northern Command. Dismissed and then allowed back by the IRA, he was recruited as a British double agent. Hegarty would have

attempt. The attempt failed as Moavia had already moved on (Kharal, 2013). The assault may have been an effort to decapitate the TTP-Punjab wing and recapture Moavia's contacts and supporters as affiliates for the TTP central command. However, the TTP failed and the group not only lost Moavia and his resources, but also was identified as trying to eliminate him, thus incurring any penalty it may have tried to avoid by initially leaving Moavia alive.

⁵The groups cited here are overwhelmingly drawn from jihadi insurgencies; these are well-placed to implement cooperative norms of interaction (Weinstein, 2007, 158), a feature that may help them suffer less from corrosive internal effects following a weakening of disciplinary structures.

⁶Although readers may suspect that leaders choose to fire or do nothing to avoid undermining morale, neglecting internal discipline can lead to strategic catastrophe. A dramatic example of the toll that this process took on the Algerian Organisation de l'Armée Secrète (OAS) is given by Crenshaw (1995).

been an invaluable long-term asset (Moloney, 2003, 387) had his duplicity not been exposed in 1986 (Gilligan, 2011).

Technological innovations enhance these costs by undermining the ability of strong organizations to force erstwhile members into a quiet retreat. Technology that facilitates anonymous transfer of information boosts the reach and precision of security forces and opens an avenue through which former operatives can secretly defect, thereby reducing the maneuvering room enjoyed by leaders. The Shabaab al-Mujahideen articulated one perspective of the threat that such technologies can pose. In a 2014 proclamation announcing a Somalia-wide ban on mobile phone companies, the group acknowledged that “Mobile internet service poses a risk to the security of the mujahideen... and provides many opportunities for the spies to get information about the mujahideen and transfer it to the intelligence agencies that filled the country” (Shahada News Agency, 2014).

Information can also lead to military strikes, such as the drone operations that have reduced the leadership of al-Qaeda affiliates in Afghanistan, Pakistan, Somalia, and Yemen. As greater amounts of information can be extracted by surveillance technologies and counter-terror operations are increasingly carried out by remotely targeting leaders, managing the flow of information becomes both more difficult and more necessary for organizational survival. The toll that information leakage has exacted on jihadi insurgencies is suggested by the release and distribution of propaganda videos that show groups punishing individuals who are accused of calling in airstrikes or planting tracking devices. These videos frequently depict horrific executions—such as by crucifixion—intended to deter potential informants.⁷ Although there is little public indication that former members have provided the key intelligence needed for such airstrikes, the ability of former members to rain down devastation increases the risk of releasing commanders with intimate knowledge of their former organi-

⁷For one instance of this, a video released by AQAP on February 13, 2012 showed the execution of an alleged informant, announcing: “The Shariah Court in Abyan province, Waqar Emirate, sentenced to death and crucifixion the one named Abu Abdul Rahman al-Maribi Salih Ahmed Salih al-Jamili, after indicting him with espionage and his placing of two chips to direct the bombing of the American planes towards the mujahideen in Zinjibar.” Madad News Agency, “Eye on the Event, 4,” translated by the SITE Intelligence Group.

zations.

While some of the costs outlined above are likewise born by groups that kill commanders, most are not. Conflict is by nature dangerous, and, if done carefully, killing need not signal weakness nor spur internal dissent.⁸ And, of course, a dead commander cannot turn or start a competing group.

Given the concerns outlined above, why do groups ever fire? High-profile, often publicly-acknowledged, dismissals of important operatives for essentially bureaucratic infractions are an undercurrent running through both news coverage and previous analysis and scholars have referenced dismissals as a valuable tool in the repertoire of a clandestine group.⁹ For instance, Horgan observed that terrorists are more commonly “removed...against their will” than voluntarily disengage (Horgan, 2009, 36).¹⁰ With these risks, one might expect that dismissals of top members should generally be shrouded by secrecy, such as the Irish Republican Army’s apparent 1996 dismissal of Dickie O’Neill, former Director of Operations (OC) of their Southern Command. O’Neill was responsible for approving the operation that killed Garda Jerry McCabe on June 7, 1996, thereby violating IRA policies and resulting in community backlash that threatened peace negotiations (Tom Brady, 2006). Although reportedly quickly removed, descriptions of O’Neill’s dismissal only emerged years later, with claims ranging from that he simply stood down from active engagement (Williams, 2011), to that he was “shot in the ankle” as punishment and then dismissed (Horgan, 2009, 37), to that he remained in his position(The Irish Times, 1999).

Yet, the TTP incident with which this article opened was remarkable but not unique;

⁸Such as if disguised as an accident.

⁹Commanders whose actions violate the norms of their parent group, such as through extremism or brutality, may also find themselves disavowed; however, our analysis is primarily concerned with situations in which a group leader removes a commander with whom they are otherwise satisfied. The case of too-brutal commanders is generally easier to analyze, as removing them placates backers and other community constituencies, reducing some of the tension. More idiosyncratic causes than excessive brutality are likely to underlie dismissal.

¹⁰Unexpected firings occur in other clandestine contexts as well; for example, Japanese organized crime leader Tadamasa Goto was expelled by the Yakuza in 2011 after reports emerged that he had provided information to the FBI in exchange for permission to obtain medical treatment in the United States.

in the course of writing this study, the authors discovered numerous examples of prominent dismissals from clandestine militant groups, almost all of which were contemporaneously reported by local and international media outlets. A number of common characteristics underlie many of the situations in which groups publicly dismiss important operatives, among them the degree to which the group's power structures are decentralized; the depth of constituency support for the commander; the skills and strength of the commander; and, often, the influence and leverage of the group's backers. These characteristics will serve as the parameters of our formal model, below. Before presenting it, though, we offer a few instructive cases in which senior commanders were fired by their organizations, with an emphasis on dismissals accompanied by a public announcement, as well as a couple of contrasting examples in which leaders made other choices.

Public Firings

Our first two examples highlight the importance of the commander's constituency in constraining personnel decisions, and how the level of decentralization in the group can condition the constituency's role. The Liberation Tigers of Tamil Elam (LTTE) is widely known for resolving internal dissent through violent purges (Staniland, 2012a). Despite the group's reputation, in July 2002, Velupillai Prabhakaran, the LTTE leader, took the unusual step of officially dismissing three members of the Eastern wing leadership from their positions. The men, Karikalan, Visu and Thurai, were ejected for failure to follow orders (Jeyaraj, 2002) and extorting the Muslim population in areas under their oversight, thereby directly contravening the terms of a landmark agreement between Prabhakaran and the Sri Lanka Muslim Congress. Notably, as with Sajjad Mohmand and the TTP, tensions between the commanders and the LTTE leadership had reportedly been building for some time, with Karikalan previously censured for abusing the Muslim population (Outlook, 2002). Karikalan's misstep in 2002 differed from previous challenges in that by disregarding Prabhakaran's assurances to the Muslim community, he undermined external perception of the LTTE leader's command of his forces and eroded Prabhakaran's credibility in negotiations with community actors (Ra-

machandran, 2002). However, because the three were supported by the LTTE's influential Eastern wing, they avoided the fate of previous former deputies: execution for insubordination (Jeyarj, 2002; Ramachandran, 2002). Note that decentralization of power bases within the organization helped to enable this outcome, in that it helped to create an environment in which the commanders could curry favor from an important constituency whose support was desired by the group's leadership.

In December 2007, the Afghan Taliban dismissed Mansour Dadullah, a senior commander in Southern Afghanistan in control of hundreds of fighters. Dadullah's removal—officially for failure to follow orders—was announced with a public statement signed by Mullah Omar. A spokesman for the group even issued a press release to international media outlets to announce Dadullah's removal. The firing was the most high-profile of a series of contemporaneous purges within the organization, believed to have been instigated by a senior leadership attempting to consolidate a diffuse command structure and re-exert control over operational decisions (Peters, 2011, 110). Notably, Mansour Dadullah was dismissed within a year after the death of his brother, a very senior military commander within the Afghan Taliban. Presumably his brother's influence acted as an important constituency that kept Dadullah in the organization; without it, the leadership's decision calculus shifted, leading to a different personnel decision.

Under the leadership of Ahmed Godane, the Shabaab al-Mujahideen parted ways with several commanders, firing some and killing others, thus providing an illustration of the pathways to dismissal. Again the role of the commander's constituency is central, but the importance of the strength of the commander also arises.

In 2011, the Shabaab dismissed five commanders from the Gedo region of Somalia, including a "senior army commander" accused of aiding fighter defections to the government (Ahmed, 2011). The context in which these commanders were dismissed is particularly notable, as the transgression—facilitating defections and, presumably, maintaining illicit ties to Somali security and government agencies—is the type of organization-undermining activity that has triggered assassination attempts in other contexts. Yet, *Somalia Report* iden-

tified the unnamed commander as having survived the altercation due to his links within the country's powerful clan structures (Ahmed, 2011). The outcome reflects the Shabaab's political situation: although the group has been largely able to co-opt or eliminate domestic rivals and transcend clan politics to a degree unusual among Somali groups (Hansen, 2014), they are nevertheless constrained by the status of clans as one of the central pillars of Somali society (Schaefer and Black, 2011).

Months later, in early 2012, the Shabaab fired Moallim Jinaw, military commander for the Bay, Bakool, and Gedo regions, reportedly due to political infighting as well as Godane's attempt to centralize power and streamline political and military "divisions" within the group (Somalia Report, 2012). Jinaw's dismissal highlights the degree to which politics constrain leadership decisions: after he was removed at the behest of factions loyal to Godane, Jinaw was able to redeploy his troops as an independent militia (Somalia Report, 2012). It also underscores a second danger of dismissing top commanders, relating to their strength: the action was reportedly deeply controversial among the Shabaab's Security Committee, as Jinaw was a skilled and effective commander and trainer whose departure undermined the Shabaab's military capacity (Somalia Report, 2012). This suggests personnel decisions take into account commander ability as well.

Another way of seeing the importance of factors such as constituency support, commander strength, and organizational decentralization is to explore what happens when the conditions for firing fail to be present. For example, the changing fortunes of Noe Suarez Rojas, a senior commander of the Revolutionary Armed Forces of Colombia (FARC), illustrate how a personal constituency can be a critical factor in whether and for how long a group will tolerate troublesome commanders. Rojas' lavish lifestyle was at odds with the FARC's revolutionary leftist self-presentation, and he was notorious for repeatedly refusing to take orders from central command. Yet, he was protected as long as his brother, Víctor Rojas, remained the FARC second-in-command and internal rebukes were sufficient to mollify any demands for discipline (Alsema, 2012). However, two critical factors appear to have changed the FARC's calculations. First, following the 2010 death of Víctor, Rojas lost a powerful internal

constituency. Secondly, by 2012, FARC was on the threshold of peace negotiations with the Colombian government and may have worried that Rojas' public involvement with drug trafficking would undermine attempts to bolster popular support and domestic legitimacy as a revolutionary movement (Ramsey, 2012). These changes, which reduced (internal) constituency support for the commander while also enhancing (internal) backer pressure for the commander's removal, altered the leader's decision calculus. Consequently, Noe was reportedly executed for insubordination in January 2012 (Alsema, 2012).

A second example can be found in leaders' efforts to reduce constituency-generated constraints on their personnel decisions. The leadership of the Shabaab al-Mujahideen appear to have developed a strategy to combat their commanders' ability to derive protection from a critical local demographic. Using the visibility granted by their ties to al-Qaeda, the Shabaab aggressively recruited fighters from the West, including radicalized converts and members of the international Somali diaspora. These could be prevented from generating close links with the local community, thereby undercutting their ability to develop constituencies. Describing an apparent policy of isolating commanders, one grievance aired by the dissident American Shabaab commander Omar Hammami and his sympathizers was that the Shabaab isolated foreign fighters from the community (Hammami, 2013). With little interaction outside of the group, foreign fighters would be unable to develop local relationships or patronage ties which could be leveraged for safety.¹¹ Indeed, Hammami was eventually killed after falling out with Godane. Note that a consequence of this strategy is reduced decentralization of the organization as well. We return to this idea below.

The contrasting outcomes for Hammami, the slain foreign fighter, and the dismissed Somali commanders starkly illustrate how being tied to an important local constituency can protect individuals from their own comrades, and how, for this reason, leaders have incentive and sometimes the ability to limit constituency ties. Commanders also have incentive to do

¹¹Similarly, among domestic commanders, the Shabaab has had sub-commanders operate in territories controlled by other clans (Hansen, 2014). This strategy may likewise limit the extent to which the organization becomes internally beholden to clan interests.

the opposite. Moktar Belmoktar, an Algerian-born AQIM commander dismissed in 2012 for insubordination, demonstrates an outcome in which a commander was able to enhance his position by drawing on his strong community ties, the group's decentralization, and his high personal ability. On the frontier of AQIM expansion, Belmoktar could ensure that AQIM's connections to the Malian community were channeled through himself. He developed community ties while spearheading the expansion of AQIM into Mali by marrying into a prominent local family and praying at a local mosque (Hammer, 2013). He also engaged in civic projects, building wells (Hammer, 2013) and distributing proceeds from his operations through the community (Erlanger and Nossiter, 2013). His example additionally illustrates the degree to which different organizational factors can mutually reinforce each other, such as decentralization strengthening a skilled commander's ability to deploy resources to generate the community ties that can be used for his protection.

The previous vignettes have highlighted a number of prominent examples of clandestine militant organizations dismissing senior leaders, often under circumstances in which the group has killed less fortunate commanders. However, as clandestine militant groups are by definition opaque organizations, it is impossible to develop a complete census of cases of firing from clandestine groups, nor is it always possible to gather a full picture of the dynamics at play in individual cases. Although the examples above might give the impression that firing is primarily a tool used by established and powerful organizations, this conclusion is almost certainly biased towards the activities of such groups, as they are most likely to be reported and analyzed. In order to generate a clearer idea about the factors in play in the decision to fire, we turn to game theory to analyze the situations in which a leader might choose to dismiss an errant commander.

Choosing to Fire, Kill, or Maintain the Status Quo

We present a model motivated by the core conflict present in the TTP example with which we opened: the *leader* of an anti-state group must decide the fate of a senior member of that group, whom we'll refer to as a *commander*. On the one hand, the commander has

antagonized some who contribute to the group’s success and who desire that he be punished for his infraction. Such groups or individuals could comprise, for example, an external financial or logistical backer or an aggrieved group faction. For simplicity, we collectively refer to all who desire the commander’s punishment as *backers*.

On the other hand, other groups or individuals who contribute to the group’s success value the commander and would prefer that any punishment be minimized. This could comprise a local constituency to which the offending member is tied by history or blood, a supportive group faction, or alternative funders. We collectively refer to all who desire the commander not be punished as the commander’s *constituency*.¹² We assume that the constituency’s support for the group is run through the commander to a greater or lesser degree, and that this affects the constituency’s preferences.¹³

In this light, the trade-off we identified in the empirical record is straightforward: the leader must respond to his commander’s infraction by navigating through the Scylla and Charybdis of backer and constituency. Our model makes two contributions. One, it highlights the substantive factors underlying the “odd” choice to fire, which comes out of these dual pressures. Two, it fits into the larger research agenda on the dynamics of violent organizations by yielding insight into group functioning and mechanisms that exacerbate structural tensions within the organization.

We note that we assume that both the event that antagonized the backers and the development of attachment by the constituency to the commander occurred before the onset of the model, and are taken as given by our actors. One could imagine a larger model, beyond the scope of this one, that made endogenous the choice to antagonize the backers, and perhaps also efforts by the leader to limit such behavior. While solving our model would

¹²The leader and commander can also comprise multiple individuals despite being treated as unitary actors in the model so long as they have common preferences with respect to the decisions embodied on our game: *i.e.*, all members of the leadership desire to minimize costs to the group, and each commander seeks to maximize benefits upon being fired due to his infraction.

¹³This does not mean that the constituency can’t also “back” the leader, just that the constituency is defined as a group that also values and at least partially channels support through the commander, as opposed to the backers who actively prefer the commander be eliminated.

still be a necessary precursor to analyzing this larger model, earlier stages in the larger model could lead to an endogenous fixing of some of our substantive parameters that could constrain the set of observed outcomes in our model. Conversely, our model implies incentives that the leader and commander might experience in this larger model, driving actions in earlier stages in the larger model. We return to this idea in the next section, in which we consider some upstream implications of our model for the organization and operation of the group.

Actors and Actions

To capture our strategic story, we offer two complementary formal models. In the supplemental appendix we model the linked strategic behavior of all four actors we have mentioned: a group's *leader* (L), its offending *commander* (C), its *backers* (B), and the commander's *constituency* (O). In line with our earlier discussion, interactions between these actors are influenced by parameters corresponding to the strength of each of backers and constituency, the group's degree of centralization, and the commander's ability. We also consider parameters corresponding to the seriousness of the commander's infraction and the strength of external rivals to the group, such as the government or other groups.

While this model does provide useful microfoundations for our core strategic story, it is in a sense unnecessarily complex, relative to the goal of capturing the central interaction between leader and commander. Thus, in the text we present a stripped-down version of this model that treats only the leader and commander as strategic actors. In this model, backers and constituency move into the background, and we abstract away from other rivals and the nature of the infraction.

In both models, the leader acts first and has three classes of punishment at his disposal: kill the commander (K), fire him (F), or discipline him internally (N). These punishments differ in both their visibility to backers and constituency and the degree to which they allow the future employment of the commander. Killing is a visible act; after all, the entire intent of killing in this context is to satisfy backers' grievances. Killing also eliminates any future use of the commander by the group, costing it the commander's skills and abilities. We

assume killing happens with certainty.¹⁴

Firing is also a visible act for the same reasons, though it is a weaker signal of punishment to backers and constituency as it keeps the commander alive. This is important—and distinct from killing in the model—for two reasons. First, it angers an important constituency less than would killing the commander, but placates the backers less as well. Second, it allows the commander to take further actions, some of which may be harmful to the group.

Internal discipline, in contrast, is not public, as it is difficult to verify in a clandestine organization—sometimes even by other members (Shapiro and Siegel, 2012). Backers and constituency can observe that the commander remains within the group, and respond accordingly. The commander’s skills and abilities remain within the group as well.

In both models, the commander acts second, when possible. Under each of killing and internal discipline there is no further action for the commander to take. This is obviously true in the case of killing. In the case of internal discipline, we assume that this discipline is insufficient to drive the commander away from the group, given the commander’s earlier revealed preference to be in the group in the first place.¹⁵

After being fired, however, the commander has additional options. We model two categories of these. The first involves actions the commander takes that could harm the group. For example, the commander could start a splinter group that competes with the leader’s group, or he could inform on the group to the government. In the supplemental appendix we model each of these two example actions separately, with the strength of the group’s rivals being a primary determinant of which gets chosen. Here we lump them both together under the action of splintering (S), as our focus is not on the group’s rivals.

The second category is the result of a negotiation between leader and commander and so is less risky for both actors. We denote this option withdrawal (W) and it has two

¹⁴Weakening this assumption would have unclear consequences for the model, as it would depend on a series of assumptions on how backers, constituency, and the commander himself viewed a failed assassination. We choose not to add this complexity to the model.

¹⁵Firing in this context could also be the result of an attempt to apply too-strong but non-lethal internal discipline to the commander, causing him to exit the group.

characteristics. One, it enables the possibility of a return of the commander to the group, should circumstances change in the future. We discuss this possibility further below. Two, it involves a known cost to the leader and a benefit to the commander. This benefit could be a positive payoff, negotiated prior to the commander’s decision, or it could be the “benefit” of avoiding a known negative payoff or punishment.¹⁶

As noted above, we assume that firing is a visible act, regardless of the category of action chosen by the commander. Simple observation by a close observer, after all, would indicate that the commander is no longer within the group. While there might be incentives for the leader to lie and say he killed rather than fired the commander, we view this lie as not credible to the backers, given the leader’s incentives not to kill if the backers could be assuaged through deceit.¹⁷

Our stripped-down game ends here. In the model in the supplemental appendix, there are two more decisions: the constituency acts next, then the backers. Each chooses an optimal level of support offered to the group as a function of the parameters of the model and the decision of the leader, in a manner described more fully in the appendix. Here we simply take these optimal levels of support as given. We denote these s_O^* , for the constituency, and s_B^* , for the backers.

¹⁶In the latter case, the cost to the leader could stem from a loss of face arising from not exacting the established or threatened punishment.

¹⁷In a variant model in which the commander takes the payoff and then acts against the group anyway, withdrawal is never a viable option and we can safely ignore it. This would lead to weakly less firing in equilibrium.

We might consider a more complex information setting, in which the leader attempts to signal killing despite the actual choice of firing with withdrawal. As noted, we believe that most such signals will not be credible, given known leader preferences. However, putting this point aside, we can quickly draw a couple of conclusions from letting the leader attempt to deceive the backers after withdrawal. To do so we assume that after the leader attempts deception the commander cannot return to the group without the backers exacting a more severe cost as a consequence of the leader’s openly lying to them.

If the constituency also believes the commander is killed, then the costs to the leader of lying are no different from those accrued by killing the commander. Since killing is less risky, we assume the leader will do that and the game does not change. Thus, lying only has an effect on the outcome when the leader can signal differently to the backers and constituency. If the leader can do so, then firing with withdrawal becomes a better option than killing if the lie is sufficiently unlikely to be detected and the payoff to the commander is sufficiently small. Consequently, in equilibrium, one observes weakly less killing and weakly more firing. Of course, keeping this lie undetected when the constituency knows the truth seems difficult, which surely accounts for some of the empirical record of killing.

The actions of each player, along with the payoffs of the model, are given in Figure 1.¹⁸ We next discuss these payoffs, but first introduce the four parameters on which these payoffs depend. These parameters capture the substantively important factors that formed the core of our previous discussions, and underlie the decision-making of both leader and commander in our model.

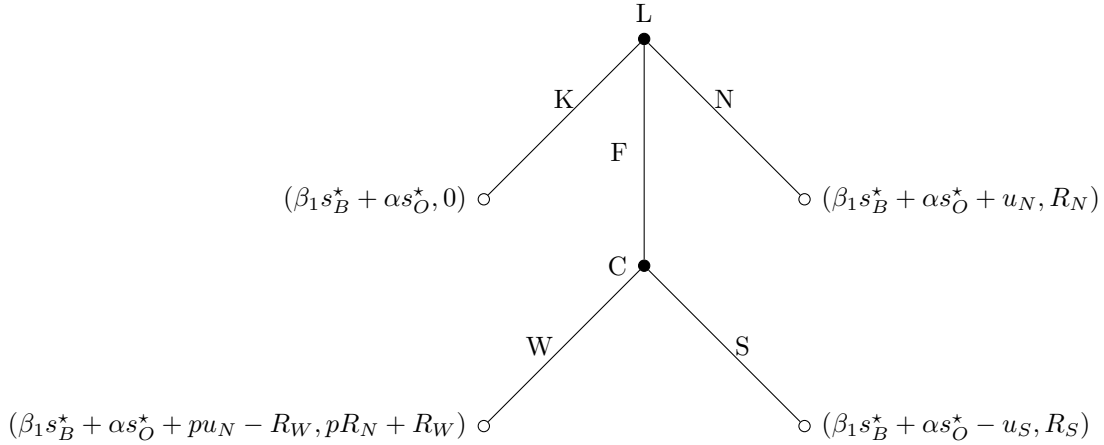


Figure 1: Stripped-Down Game Tree

Payoffs

At its core, our story is about the importance of support from both backers and constituency, and the difficulty of balancing the desires of backers and constituency when they want different things. When the backers are stronger and the group more dependent on their largesse, we might expect the group to value their support more. To capture this, we assign the parameter β_1 to the group's valuation of backers' support. The same is true for the support of the constituency, and we assign parameter α to the group's valuation of that. Backers (Constituencies) that are stronger and on which the group is more dependent betray larger values of β_1 (α).¹⁹

¹⁸To accommodate limited space in the figure we have left off the functional dependencies we next describe. These are: $s_B^*(\phi)$, $s_O^*(\phi(1 + \delta), \sigma\delta)$, $p(\beta_1)$, $u_N(\sigma(1 + \delta))$, $u_S(\sigma, \delta)$, $R_N(\sigma, \delta)$, and $R_S(\sigma, \delta)$. This game was produced from the more complex one in the supplemental appendix by eliminating the I option for C and eliminating γ and β_2 .

¹⁹The loss of support from *external* backers or constituency might entail increased financial or logistical costs for the group. The loss of support from *internal* backers or constituency might entail increased indirect

The commander’s skills and ability dictate the degree to which the leader values his presence in the group. This affects not only the leader’s initial choice, but also the withdrawal payoff he is willing to provide. We denote the commander’s ability σ . Related to this ability is the group’s degree of *decentralization*, δ . More decentralized groups require closer and more frequent interaction between constituency and commander, which influences the worth of the commander to the leader. This closeness also leads to commanders more valued by their constituencies; thus, δ captures as well the strength of the connection between constituency and commander.

Table 1 lists all four of our parameters, along with their substantive meanings, for easy reference.

Param	Substantive Meaning
β_1	Group’s Dependence on Backers / Strength of Backers
α	Group’s Dependence on Constituency / Strength of Constituency
δ	Group’s Degree of Decentralization / Connection between Constituency and Commander
σ	Commander’s Ability

Table 1: Exogenous Model Parameters

We move now to the leader’s payoffs, assigning them to be minimally complex while still capturing the core dynamics of the substantive setting. We represent the leader’s utility from support from both backers and constituency simply as $\beta_1 s_B^*(\phi)$ and $\alpha s_O^*(\phi(1 + \delta), \alpha\delta)$, where s_B^* is the equilibrium value of the backers’ support, and s_O^* is the equilibrium value of the constituency’s support. The dependence of each on its parameters relates to what is valued by the backers and constituency, respectively, as justified in more depth in the supplemental appendix. Both backers and constituency derive utility from the level of punishment the commander suffers, which we denote $\phi \in \{\phi_N, \phi_F, \phi_K\}$, with this list ordered. A higher (lower) level of punishment signals greater alignment of the group’s interests with those of the backers (constituency), leading to more support offered to the group. Thus s_B^* is increasing

costs arising from decreased group discipline and cohesion as strong internal group factions, either tied or not to the commander, experience displeasure with the leader’s decision.

in ϕ ,²⁰ while s_O^* is decreasing in ϕ . In the latter case, we further assume that this decrease is conditioned by the degree to which the constituency values the commander. Constituencies of commanders don't want commanders punished in general, but want punishment even less when the commanders are particularly close to them. We also assume that constituency support depends on the strength of the commander, conditioned on group structure: more able commanders lead to more support, but only in decentralized groups. Thus, s_O^* is increasing in both σ and δ .²¹

In addition to being dependent on the support of backers and constituency, the leader's payoffs contain additional components relating to the action of the commander; these vary by outcome. If killed the commander cannot take any action, and so the additional payoff to the leader is 0. In all outcomes in which the commander might be (re)employed, N and W, we assume that greater values of σ increase the group's benefit. These benefits are greater the greater is decentralization, though decentralization on its own does not provide a benefit to a leader from a commander if the commander is not capable. We thus define $u_N(\sigma(1+\delta))$ as the utility component garnered by the leader whenever the commander remains engaged, and it comprises the utility to the leader of anything from the commander's management of his constituency to his role in group operations.

In the case of N, employment is continuous, and this definition is sufficient. In the case of W, the commander is only employed by the leader should circumstances change and allow him to return to the group, which he would prefer given that he initially chose to be in the group. For the leader to prefer to reinstate the commander, we assume that the backers

²⁰This assumes that the backers find internal discipline insufficient, perhaps due to incentives the leader will have over time to relax said discipline. Of course, when internal discipline is verifiable and preferred by all parties, this model would be a poor fit as we would not expect to see commanders fired. It also assumes that the backers are only partially appeased by firing. To refer back to the running illustration, although there are no direct indications that the Afghan Taliban conveyed willingness to accept Momand's dismissal as a salve, the timing and stated reason for Momand's firing suggests that the TTP expected them to accept the gesture. Not only did the announcement identify Momand's antagonizing the Afghan Taliban as precipitating his departure, but the replacement spokesman, Maqbool Orakzai, was regarded as being close to the Afghan Taliban (Europe, 2013). Moreover, TTP commentary emphasized that they prioritized relations with the Afghan Taliban over Momand's employment.

²¹We also assume that constituency support exhibits substitutability in its first and second arguments, which comes from assuming that punishment is viewed more negatively the more capable is the commander.

must be willing not to withdraw support anew.²² In the context of our model, the likelihood that circumstances change enough to allow the commander to return without triggering additional penalties from the backers is effectively exogenous. We represent this likelihood by p . Recalling that β_1 captures the strength and stability of backers, we assume that p is a decreasing function of it. The expected payoff to the leader from the commander's potential presence in outcome W is thus $pu_N(\sigma(1 + \delta))$.²³ As noted above, the leader must also pay a cost for withdrawal, which must be included in the leader's payoff under outcome W. We assume for simplicity that this cost is equal to the benefit received by the commander for withdrawing, and denote each R_W .²⁴ We assume that the value of R_W is endogenous to the model. Specifically, it will be chosen by the leader in equilibrium so as to make the commander indifferent between choosing W and S, as long as withdrawal is preferred by the leader. Because R_W is known to all actors before the choice to withdraw is made, it must be set before the commander acts. We assume the leader does so at the decision to fire.

The leader also receives a payoff due to the commander under outcome S, though it enters purely as a cost, which we define as $u_S(\sigma, \delta)$. Greater values of σ and δ increase the cost to the leader of splintering in a complementary manner. This is true regardless of the underlying splintering behavior. For example, in the case of forming a splinter group, this dependence arises because more able leaders form more successful groups, and splinters from decentralized groups have more experience providing necessary club goods and managing group members without oversight. In the case of informing to rivals, more able leaders and those with more responsibility have, on average, more useful information on the group.

²²Technically, all that we need for the model is for the backers not to additionally penalize the leader too much upon reinstatement, as too much punishment would remove the incentive of the leader to offer a W option. However, adding a non-zero additional punishment adds complexity without further insight, so we choose not to do so.

²³We assume that neither backers nor constituency alter support despite changing circumstances; after all, the leader has already signaled what each actor can expect going forward with his previous choice to fire, and that has not changed. We could mitigate this assumption by increasing the support of one or both actors at this point, which would lead to weakly more equilibrium firing.

²⁴A more complex cost to the leader of $f(R_W) > R_W$, representing the possibility of additional liabilities stemming from withdrawal such as later betrayal by the commander or later punishment by the backers, would lead to weakly less firing in equilibrium.

Finally, we consider the commander’s payoffs. We assume the commander cares only about what happens to him, and so receives an outcome-dependent payoff. We normalize the worst outcome for the commander, being killed, to 0, and assume all other payoffs to the commander are positive. The commander’s highest payoff is $R_N(\sigma, \delta)$, the payoff for internal discipline. This payoff must be the largest because being a member of the group was his choice at the outset and we have assumed internal discipline is not too costly to the commander. We assume R_N is increasing in both the commander’s ability and in the degree of decentralization, and thus responsibility, the commander has. The commander’s payoff under withdrawal is p times this, given the chance that changed circumstances allow his return, plus the one-time payout to the commander under W, or: $p(\beta_1)R_N(\sigma, \delta) + R_W$. The payoff under S has a similar structure: $R_S(\sigma, \delta)$, under the same logic given for u_S .

Equilibrium Behavior and Comparative Statics

This is a two stage, sequential, complete information game. We solve for the subgame perfect equilibria via backward induction. The four terminal nodes of the reduced-form game represented by Figure 1 are potential equilibrium outcomes. We provide a full equilibrium characterization in the supplemental Appendix, along with a formal derivation of the model’s comparative statics.²⁵ Here we focus more tightly on our primary question of interest: the leader’s choice, and particularly when to fire. For each of the leader’s three possible choices, we provide intuition underlying the conditions under which the outcome is chosen and how varying the parameters listed in Table 1 influence this choice.

We begin with the most extreme response: killing the commander. As one might expect, the leader chooses to kill when the expected support from the backers substantially outweighs the expected loss of constituency support. Strong backers on whom the group depends make killing more common. Weaker constituencies and those on whom the group is less dependent act similarly.

²⁵Strictly speaking, we present these for the more complex model offered there. However, results for the stripped-down model in the text follow directly from the proofs in the appendix by removing the commander’s option to inform (I) and all dependence on parameters β_2 and γ . We explain further in the appendix.

Factors relating to the commander and group structure play more nuanced roles. In general, strong commanders are more tempting for the leader to keep, as are commanders that are more essential due to group decentralization. The greater this temptation, the greater the benefits of the backers must be to justify killing. This would seem to suggest less killing with stronger commanders and more decentralized groups, and this is generally true in equilibrium. However, the existence of an option to fire complicates this logic. When firing would be preferable to internal discipline, the leader must additionally consider the cost of firing. This cost may be direct, via the cost of withdrawal to the leader, or indirect, arising from information passed to rivals or the existence of a new splinter group. Regardless, if these costs increase sufficiently quickly in commander ability or group decentralization, the leader may prefer to kill more often as ability or decentralization increases in order to avoid paying them.²⁶ Taken together, these results imply that killing becomes particularly likely in circumstances in which a group is dependent on a state sponsor or operating in a region with weak state control or porous borders, such as in Kashmir or the Levant.

Next we consider the least extreme response to the backers: internal discipline. This response largely occurs under the opposite circumstances as killing. The leader chooses to discipline internally when the benefit for doing so, in expected support from the commander's constituency, substantially outweighs the expected loss of backer support. A strong constituency on which the group is more dependent makes internal discipline preferable. So, in general, does a commander with greater ability and a more decentralized group.²⁷

Decreasing the strength of, and the group's dependence on, the backers generally increases the likelihood of internal discipline. With less necessity to placate backers, the pressure

²⁶Of course, at some point N may become a better option than F, and this incentive goes away.

²⁷There is one exception to this. If the leader would prefer firing to killing and the commander would accept a non-zero payout to withdraw, more able commanders and more decentralized groups lead to less internal discipline whenever: (i) the commander is likely to be rehired and (ii) the benefits to the commander of being rehired increase rapidly with ability or decentralization. The reason is that increasing commander ability and group decentralization make internal discipline and the withdrawal option more attractive to the leader. This usually results in the leader being more likely to choose internal discipline. However, it could result in more firing if the commander becomes much cheaper to buy off as ability or decentralization increase, as would happen when the commander is sufficiently rewarded for returning to the group.

against internal discipline is diminished. However, again the existence of an option to fire complicates this logic, for the same reason: the cost of firing must be taken into account. Here it is the cost of withdrawal that matters. When the leader would prefer firing to killing and the commander would withdraw upon being fired, internal discipline can become less common as dependence on backers decreases. This can happen when the chance of the commander's rejoining the group after a brokered withdrawal increases very quickly as dependence on backers decreases, making withdrawal relatively cheaper, which leads the leader to fire more often and so trigger withdrawal rather than use internal discipline.²⁸

Finally, we consider firing. We have seen that killing occurs under backer dominance, and internal discipline occurs under constituency dominance. Internal discipline can also occur when neither backer nor constituency is important: with little incentive to accommodate others, the leader defaults to the status quo to continue employing the commander. Firing comes into play when both backer and constituency offer substantial and valued support. It is more likely when the loss of support from both backer and constituency after firing are relatively low and costs arising from internal discipline and killing are relatively high. Firing is also more likely when the commander is likely to return to the group after withdrawal, when options open to the commander that hurt the group such as splinter groups or informing are less viable, and when the commander receives substantial benefits for being part of the group. In other words, firing occurs when the leader faces conflicting preferences of two important sources of support, but is able to take advantage of one or more of: (i) a commander whose information or splinter risk is insufficiently threatening to the leader; (ii) a commander who benefits strongly from group membership and is likely to return should he be removed; or (iii) backers and constituencies who find firing to be a reasonable compromise.

Unlike for internal discipline and killing, firing betrays complex relationships with most parameters, and we detail these in the supplemental appendix.²⁹ That said, situations

²⁸This can occur despite internal discipline becoming more attractive relative to firing as the importance of the backers to the leader declines. Of course, at some point K may become a better option than F, and this incentive goes away.

²⁹For example, as we have seen, more able commanders generally make firing more likely than killing,

that can generally be expected to generate firing are ones in which there are relatively few connections between the group and the constituency and the commander is able to monopolize the connections that do occur, such as may happen as groups expand into new territories. In other words, situations in which group decentralization is high (but so is backer strength).

Implications for Group Organization and Operation

To this point, we have focused on producing insights into how internal and external pressures can be expressed through group personnel decisions, leading militant leaders to costly public actions. In order to focus tightly on the consequences of these pressures, we chose to formalize neither the earlier action of the commander to anger the backers, nor any prior actions by the group leader to mitigate later pressures. However, even without formalizing these actions, our model suggests consequences for group organization and operation.

For example, our model implies that, in general, a commander who represents an essential link to a crucial base of support is more likely to survive personnel changes. This creates a strong incentive for commanders near the apex of an organization to tie themselves to a critical community, even at the expense of advancing the group. This is the example of Moktar Belmoktar given above. Pushing for decentralization, particularly in distribution of goods and services, is one effective avenue to generate such ties. Further, commanders successful in this push may feel more free to anger the group's backers, relatively safe in the knowledge that they are comparatively important to the group's functioning.

That commanders can personally protect themselves by devolving power from the organization's nominal leadership was attested to in an audio message allegedly capturing chatter between commanders of the Syrian Hayat Tahrir al-Sham (HTS) militant group.³⁰ In the

but they also generally make internal discipline more attractive than firing. Commander ability only has a uniform effect on the likelihood of firing when one instance of "generally" fails to hold. The one parameter that does relate cleanly to the chance of firing is rivals' strength, a parameter that appears only in the more complex model we discuss in the supplemental appendix. We discuss this further there.

³⁰The exchange was posted to a social networking site on September 7, 2017 by an alleged dissident.

audio a speaker described as the “Emir of the Idlib Sector” advised a companion to cultivate a defensive cadre that would be “blindly faithful [to the commander]....and to be with whoever is with him and fight whoever defies him” (alShimali, 2017). The recording features the alleged commander in Idlib reflecting on a factional struggle between newly appointed Sharia legislators and the existing command structure. He assured his listener that he personally felt safe, as “the youth in Idlib....told me if any of those sheikhs [rival officials] laid a hand on you, we shall cut it off. Make yourself a similar gang (A mafia gang)” (alShimali, 2017).

Conversely, leaders have the opposite incentive: centralized control of operations and resources helps to tie local loyalties to the group and leader. This gives the leader a freer hand in personnel decisions. Thus, managerial contingencies shape decisions made by both commanders and leaders, as the former seeks to secure his position and the latter strives for future flexibility. These decisions can culminate in pressure to change the organization’s structure, with commanders preferring “parochial” type organizations and leaders preferring “vanguard” type organizations (Staniland, 2014).

We focus on the effect of these diverging incentives for group centralization in two contexts: (i) how response to counter-insurgency can change the backer-constituency calculus and (ii) when a leader can use foreign fighters to press his advantage relative to commanders. Insights we derive complement those from the existing literature that address, for example, how external influences such as geography (Johnston, 2008) and backers (Tamm, 2016) affect internal structure, how internal cohesion and organization influence provision of violence (Heger et al., 2012) and military effectiveness (Staniland, 2014), and how power distribution influences infighting and subsequent fragmentation (Bakke et al., 2012).

Consequences of Counterinsurgency

We have seen that the level of organizational centralization in which group leaders choose to engage induces a trade-off. Decentralization implies a tighter community-group connection, increasing local constituency support. Our model leaves the benefit of such support abstract, but one real-world benefit of such support is reduction in the group’s exposure to

counterinsurgency tactics (Flanigan, 2008; Lyall et al., 2013; Paul, 2010). Decentralization can also reduce the space for leaders' most preferred option of dealing with problematic commanders, though, because it inevitably entails more community attachment to commanders. Conversely, centralization keeps commanders from playing an outsized role in distributing goods to constituency supporters. This reduces their strength and makes them easier to remove, but also renders them less able to cultivate a beneficial community constituency, which may increase their exposure to counterinsurgency.

As our model identifies, how this tension is resolved will depend in part on the relative importance of backers and constituency support, as well as characteristics of the commander.³¹ A strong counterinsurgency increases the group's need for constituency support, pushing the resolution of this tension toward milder responses to commander infractions. Strong counterinsurgency, then, acts as a contextual factor that strengthens the hand of commanders, at the expense of their leaders.

Going slightly beyond the model, we might imagine that commanders would anticipate this, and so become more willing to engage in infractions against the backers for their own benefit. Should backers anticipate this behavior, they might be less willing to offer their support in the first place. Finally, leaders, foreseeing this outcome, might attempt to preclude it by altering the context in which their groups operate. So, for example, a leader in the presence of a strong counterinsurgency might make his group more dependent on external backers (increasing β_1 relative to α). This would be done not to improve his position relative to the government or out of operational necessity, but instead in order to reduce his reliance on commanders and their community constituencies. This would imply not only a stronger hand for the leader relative to the commander in terms of personnel decisions, but also disincentives for commanders to antagonize the group's backers in the first place. This, of course, would be the best outcome from the leader's perspective. Counterinsurgency strategy can thus affect not only group centralization, but also the group's relative reliance on backers

³¹In the appendix, we should how it depends on the strength of the government and other group rivals as well.

and constituency.

As a concrete example of the ramifications of this at the intersection of technology, globalization, and insurgent tactics, consider drone strikes. One way to deter drone strikes is to embed oneself in the community, thereby surrounding oneself with civilians. This increases the importance of community ties, as the community must be willing to harbor the group. The possibility of being confronted with aerial bombardment thus encourages commanders to build strong connections to a local constituency, which they can do by adding to their value to the community. Our model identifies the difficulty of this policy for the leader: stronger community ties produce commanders whose loss will be more strongly felt by the leader. This generates less maneuvering room to punish wayward commanders, and potentially more firings. Commanders, aware of their increased leeway in action, might be more likely to behave in ways contrary to backers' preferences, compounding the problem. In this way groups suffer from counterinsurgency not directly, but indirectly via the organizational problems the counterinsurgency generates. With limited ability to impose discipline on commanders, groups successful in resisting counterinsurgent tactics may have reduced ability to secure backers, suffer more informants, and experience more splinter groups, particularly if they are unable to enhance their reliance on backers to ameliorate this problem.

Foreign Fighters and the Constituency's Outside Options

The strength of government counterinsurgency is but one factor that has consequences both for the tension we have identified within the group and for the desired level of group centralization. We close this section with a second: the set of outside options available to the constituency.³² For example, a strong government or set of viable competing groups could provide the constituency with options for public or club goods that might compete with those offered by the group. With attractive alternatives present, any punishment of the commander might cause the constituency to withdraw support more severely. Conversely,

³²In the supplemental appendix we formally model the effect of a closely related contextual factor: the effect on the group of stronger rivals. In that light, the discussion here could amount to the effect on the constituency of stronger rivals, in that stronger rivals could provide the constituency more outside options.

in the context of a lack of alternatives, the constituency may need to continue to provide support to the group regardless of its punishment of the commander.

This difference in outside options is captured already by our model: it amounts to considering different slopes of the support function s_O^* with respect to the punishment ϕ . Further, our model specifies that this effect should be similar to that arising from varying decentralization, δ . Greater values of δ , corresponding to more decentralized groups, imply more steeply-sloped support functions; lesser values imply flatter support functions. Thus, increasing the set of outside options available to the constituency has the same sort of effect as does increasing decentralization.

In addition to all the consequences offered above, we can again go slightly beyond our model to consider the implications of this for the personnel management of the group. One preemptive option leaders might take in groups in which the constituency has more viable outside options is to enhance the group's dependence on other backers, for the same reasons as under a strong counterinsurgency. Groups that fail in this will face commanders free to alienate backers, as above.

In contrast, groups with constituencies that possess relatively few outside options may have additional choices open to them. Less worry about a loss of constituency support may also free the group to centralize and rely less on the connection between commander and constituency, unless this connection is functionally necessary for the delivery of support.³³ This not only would keep open the option to kill commanders, but also would allow the leader to draw from a wider range of potential commanders. Specifically, he could afford to invest in fighters that don't necessarily have a relationship with the constituency, such as foreign fighters. This is an ideal case for the leader: he gets to recruit fighters that are tied to, and motivated by, his group alone. By keeping these fighters exclusively linked to the group as they rise through the organization, the leader can ensure that the "kill" option is always

³³In other words, unless the commander-constituency connection does more than just satisfy constituency preferences in order to garner its support, and instead functionally is required to facilitate the transfer of resources to the group from the constituency.

open. As the fighters gain experience, they become commanders who can be disciplined with minimal consequences. In essence, then, making abundant use of foreign fighters is akin to the leader’s setting a low value of decentralization, δ , before the onset of our game.

The foreign fighter strategy, however, would break down in a region with multiple strong competing groups. A wealth of outside options for the constituency would allow it to more easily defect to other groups should it become dissatisfied, inducing a competition for local support that would increase the need for “constituency service.” This suggests that the structural problems we have identified for group leaders will bind more tightly in the presence of inter-group competition.

We can put this together with our discussion regarding counterinsurgency as well. A strong counterinsurgency suggests a stronger attachment of commander to constituency and so less benefit from foreign fighters, which reduces the gain to a group from having little competition for constituency support. By the same token, constituencies with many outside options can prevent a group from taking advantage of a weak counterinsurgency in order to centralize. Weak counterinsurgencies and little competition for constituency support suggest a centralized group, though, while the reverse suggests a decentralized one.

Conclusion

We have identified an avenue through which two sources of militant strength—community linkages and external backers—become liabilities. Community linkages aid organizations in conducting operations and resisting repression, but generate competing centers of power within the organization. External backers provide resources, but frequently want a measure of control in return (Byman and Kreps, 2010). Together, the two can pull group leaders in opposite directions, tightly constraining their personnel choices in a manner highlighted by our model. We also identify a new consequence of patronage and factional power dynamics, adding to a literature that highlights the importance of patronage networks for factional side-switching Seymour (2014) and alliances between militant groups and factions Bencherif and Campana (2017).

Numerous substantive consequences arise from this constraint. In the previous section, we identified its effect on groups' use of non-local fighters and responses to state crackdowns. We have also noted the importance of the seemingly irrational public signal that often accompanies the public firing of a commander, despite compelling reasons to avoid broadcasting information about internal group structure and stresses. Our model identifies the manner in which the degree of group cohesion and structural control, commanders' external and internal constituencies, and the demands of managing external and internal group backers can lead to this public event. This analysis can help policymakers predict how groups will respond to pressure, potentially assisting counter-terrorism and counter-insurgency efforts by providing a key to convert organizational actions that are visible to outside observers into conclusions about internal power centers, external pressures, and fracture lines. This is particularly important given the general lack of observability of group actions relating to personnel management, such as internal discipline and prior decisions on optimal organizational structure. These actions and constraints influence the hidden strategic behavior underlying a group's visible personnel decisions; however, the partial observability of outcomes suggests the possibility for bias in empirical assessment of connections between structure and intra-group tensions, as well as its converse. Formally modeling the effect of organizational structure, among other factors, on personnel decisions and group efficacy helps to clarify expectations and so reduce the likelihood of bias.

Our model also speaks to the types of commanders likely to be fired and the logic underlying the firing of each type. In many observed cases, the commander is a senior military operative who maintains and directs a wing of the organization, as is the case of Mokhtar Belmokhtar and AQIM, Asmatullah Moavia and the TTP, and Moallim Jinaw and the Shabaab al-Mujahideen. Military commanders may have an easier time generating the contacts and support that help keep them alive because, to be effective, they need manpower and funds to be available to them for operations; these resources can be distributed through the community to develop a strong constituency. Further, their need to operate within a community suggests that they must create local ties during their tenure within the group.

Finally, operationally strong commanders conduct off the books actions, such as banditry, theft, and black market activities, that supplement the resources that improve their standing with their community constituency.

Fired commanders need not be military leaders though. Notably, Sajjad Momand of the TTP appears to have primarily served a media and propaganda function. Because media officers likely do not have the same level of resources, firings are not likely to result in a competing group. Dismissing them and risking their turning to the government helps ensure continued community support for the leader, may satisfy important internal constituencies, and partially mollifies external backers. As our model makes clear, however, for this to be a viable option for the leader, it must be the case that the cost of information is not too high and some constituency must value the commander enough to withdraw support should he be killed. Because technological change implies that commanders' information and contacts can be increasingly exploited by counter-terror organizations, dismissals of media officials may become more fraught.

Finally, our model extends existing work on the internal dynamics of terrorist and insurgent groups and their mechanisms of control, advancing the question of why only some militants create "enduring war machines" (Staniland, 2012b). Specifically, it illustrates how arrangements of power centers and sources of support may translate into differing outcomes in how leaders allocate resources and discretion. Delegation can aid operational flexibility. However, as we have shown, such decentralization can impose a hidden cost as it diminishes the leader's control over the commander, which in turn can diminish the leader's ability to call upon external backers for aid.

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Supplemental Appendix

We do three things in this supplemental appendix. First, we present a more complex version of the model in the text that incorporates: (i) the decisions of constituency and backers; (ii) different choices of the commander to start a splinter group or to inform on the group; and (iii) parameters for the strength of group rivals and the severity of the commander's infraction that produced the backers' ire. To avoid too much repetition, only new model components are justified here.

Second, we solve for the equilibrium and comparative statics of this more complex model. This serves additionally as a solution to the stripped-down version of the model in the text, since that model is a strict simplification of this one. Third, we briefly discuss results that go beyond those presented in the text.

Full Model

Actors and Actions

We have four actors: a group's *leader* (L), offending *commander* (C), *backers* (B), and the commander's *constituency* (O). The group's *rivals* are a combination of state entities and other anti-state groups that collectively compete against the group and/or desire the group's end. As they are not our focus we do not model them as strategic actors, but they do affect the payoffs of the actors.

The leader acts first and has three classes of punishment at his disposal: kill the commander (K), fire him (F), or discipline him internally (N). We described these in the text.

The commander acts second. Under each of K and N there is no further action for the commander to take. Under F, however, the now-fired commander has three options. One is as described in the text: withdrawal (W). The other two stem from disaggregating the splintering option (S in the text) into starting a splinter group (S here) and informing on the group (I). The splinter group will compete with the original group for constituency support. Given the visibility of this action, we assume that it is common knowledge to all actors.

Informing amounts to providing useful intelligence to the group’s rivals. For backers and constituency this is indistinguishable from withdrawal: the commander leaves the group and does not continue in the conflict. Thus costs induced by backers and constituency cannot be conditioned on withdrawal versus informing. The leader learns of this action by process of elimination.³⁴

The constituency acts third. It observes the behavior of the leader and commander as described above and chooses its optimal level of continued support, s_O , for the group going forward. The backers act last. They observe the level of punishment the leader doles out and choose their optimal level of support, s_B , for the group.

Figure 2 illustrates the reduced form game tree for this model; we have left out the last two stages for readability, instead using standard backward induction to replace s_O and s_B with their equilibrium values. As in the text, we introduce the model’s new parameters—two, in this case—before This covers all payoffs.³⁵

discussing the model’s new and/or altered payoffs.

Payoffs

Beyond the four parameters in the text— β_1 , α , σ , and δ —this model introduces two additional ones. The first is the seriousness of the commander’s infraction, β_2 . More serious infractions are those that backers view as more necessary to punish harshly. This parameter will feed into decisions made by the backers. The second is γ , which is an index representing the strength of the group’s rivals, relative to that of the group itself. Stronger rivals have multiple effects in the model, including increasing the group’s need for support from

³⁴We might consider a variant in which the leader could kill an informing commander as revenge. If this could be done secretly the option to do so would eliminate any equilibrium in which I is chosen, leading to weakly less firing in equilibrium. However, our model assumes that the constituency learns when the commander is killed, implying that killing the commander after he informs is strictly worse for the leader than simply killing the commander in the first place and so sparing him rival-induced costs. Thus, in equilibrium, the leader would only kill the commander after he informed if the leader could surreptitiously do so. Post-hoc punishments, though, do not always succeed and failed assassination adds an aura of ineffectiveness.

³⁵To accommodate limited space in the figure we have left out functional dependencies. These are: $s_B^*(\phi, \beta_2)$, $s_O^*(\phi(1 + \delta), \sigma\delta)$, $p(\beta_1, \beta_2)$, $u_N(\sigma(1 + \delta))$, $u_S(\sigma, \delta)$, $u_I(\sigma, \delta)$, $R_N(\sigma, \delta)$, $R_S(\sigma, \delta)$, and $R_I(\sigma, \delta)$.

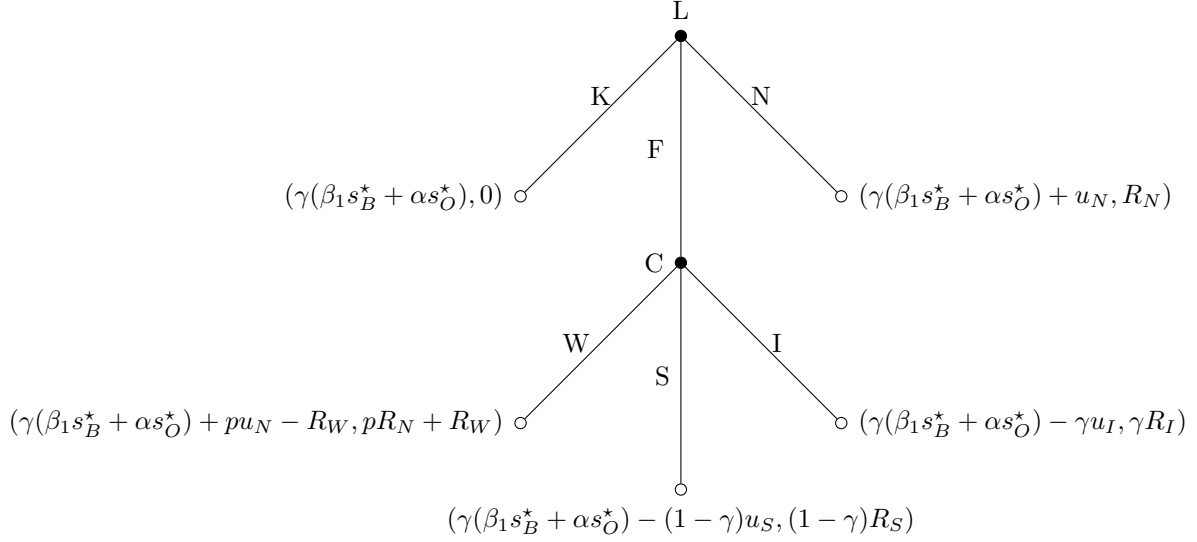


Figure 2: Reduced-Form Game Tree

all sources and altering the relative advantages to the leader and commander of the S and I options. Note that we do not incorporate rivals' strength in the decision-making of the constituency in the model, though we do discuss what the effect of doing so would entail in the text. Table 2 lists all six parameters, along with their substantive meanings, for easy reference.

Param	Substantive Meaning
β_1	Group's Dependence on Backers / Strength of Backers
β_2	Seriousness of Commander's Infraction
α	Group's Dependence on Constituency / Strength of Constituency
δ	Group's Degree of Decentralization / Connection between Constituency and Commander
σ	Commander's Ability
γ	Rivals' Strength

Table 2: Exogenous Model Parameters

We begin with the backers' payoffs. We assume that the backers' utility, $U_B(s_B; \phi, \beta_2)$, depends on three things: the backers' support, s_B , the level of punishment the commander suffers, $\phi \in \{\phi_N, \phi_F, \phi_K\}$ with this list ordered, and the seriousness of the commander's infraction, β_2 . We also assume it is globally concave in s_B . Increasing support increases the backers' utility, conditional on the extent to which their interests align with those of the

group; greater punishments and less serious infractions signal more alignment. Under these assumptions, U_B has a unique interior maximum of U_B , denoted $s_B^*(\phi, \beta_2) = \operatorname{argmax}_{s_B} U_B$. Because the leader-commander interaction, rather than backer or constituency choice, is our focus, we save some time by directly making assumptions on this maximum. These are: $\frac{\partial s_B^*}{\partial \phi} \geq 0$, $\frac{\partial s_B^*}{\partial \beta_2} \leq 0$, and $\frac{\partial^2 s_B^*}{\partial \phi \partial \beta_2} \geq 0$.³⁶ In words, the equilibrium level of support the backers grants to the group is increasing in the level of punishment and decreasing in the severity of the offense, and the marginal benefit to increasing punishment is itself increasing in the severity of the offense. The first two assumptions follow directly from our discussion, the third from assuming that punishment is more necessary the worse the offense.

We similarly assume that the constituency's utility is $U_O(s_O; \nu, \sigma, \delta)$ and depends on four things: the constituency's support for the group, s_O ; the level of punishment the commander suffers, $\phi \in \{\phi_N, \phi_F, \phi_K\}$; the commander's ability, σ ; and the group's degree of decentralization, δ . We assume that U_O is globally concave in support and we define its unique, interior maximum as $s_O^*(\phi, \sigma, \delta) = \operatorname{argmax}_{s_O} U_O$, and again choose to make assumptions directly on this. Support is decreasing in the level of punishment, and more so the more the constituency values the commander. To represent this, we assume that punishment enters the optimal support function as $\phi(1 + \delta)$. More able commanders lead to more support, but only in decentralized groups. To capture this, we assume that the commander's ability enters the optimal support function as $\sigma\delta$. Together, these assumptions imply that we can write constituency support as $s_O^*(\phi(1 + \delta), \sigma\delta)$, where $\frac{\partial s_O^*(a,b)}{\partial a} \leq 0$, $\frac{\partial s_O^*(a,b)}{\partial b} \geq 0$ and $\frac{\partial^2 s_O^*(a,b)}{\partial a \partial b} \leq 0$. The first two assumptions follow directly from our discussion, the third from assuming that punishment is viewed more negatively the more capable is the commander.

The leader's payoffs are largely described in the text; here we discuss only new aspects of them. In the stripped-down model, the utility the leader obtains from both backers and

³⁶These assumptions follow from some not terribly illuminating, but viable, assumptions on mixed-third-derivatives of U_B . More to the point, they match the substance of the interaction. Group strength and the benefits it provides to backers, including but not limited to pressure on the state to change policy or surrender territory, public or club goods, or status within the group, affects the slope of U_B (and also U_O , below), which we largely elide, and so we do not consider it as a separate parameter.

constituency depends on the group's attachment to each. In this model, greater dependency on both actors, and so greater utility from their support, also follows from stronger rivals. To accommodate this we assume that γ multiplies both s_B^* and s_O^* in the leader's utility function.

The leader's additional payoff, beyond support, arising from the continued employ of the commander (choice N) remains $u_N(\sigma(1 + \delta))$. Recall that $\frac{\partial u_N}{\partial \sigma} \geq 0$ and $\frac{\partial^2 u_N}{\partial \sigma \partial \delta} \geq 0$. The payoff under W to the leader remains almost the same as well, and is $p(\beta_1, \beta_2)u_N(\sigma(1 + \delta)) - R_W$. The sole difference is that now the probability of circumstances changing sufficiently to allow the commander to return to the group depends not only on the strength of the backers, but also on the seriousness of the infractions. We assume that $\frac{\partial p}{\partial \beta_1} \leq 0$, $\frac{\partial p}{\partial \beta_2} \leq 0$, and $\frac{\partial^2 p}{\partial \beta_1 \partial \beta_2} \geq 0$, where the last assumption suggests that more serious infractions and greater backer stability are substitutes in their role in reducing the chance of a commander returning. Recall that R_W is chosen by the leader at the time of the decision to fire.

The leader's payoffs under outcomes S and I vary slightly from that from S in our stripped-down model, in that they depend on rivals' strength as well. As in the text, greater values of σ and δ increase the cost to the leader in a complementary manner. We thus define $u_S(\sigma, \delta)$ and $u_I(\sigma, \delta)$ with all first and mixed-partial derivatives of each weakly positive. The degree to which these costs affect the leader, however, depends on the strength of the rivals, γ . Stronger rivals mean less effective splinter groups that are less risky for the leader, since the new splinter group is likely ill prepared to deal with rivals at inception. In contrast, stronger rivals mean any information passed along will have greater consequences, increasing the cost of outcome I to the leader. To capture each, u_I enters the leader's utility multiplied by γ , and u_S enters multiplied by $(1 - \gamma)$.

The commander's payoffs under K, N, and W are identical to those in the model in the text, with the exception that now p depends on both β_1 and β_2 , as detailed above. Recall that the payoff for employment by the group is $R_N(\sigma, \delta)$, with both first derivatives as well as the mixed-partial positive. The new payoffs for S and I are similar to that given in the model in the text for its S option: $R_S(\sigma, \delta)$ and $R_I(\sigma, \delta)$, with the same dependencies as with

u_S and u_I . As with the leader, the actual benefits to the commander of S and I are also a function of rivals' strengths. Thus, payoffs to the commander under S and I are, respectively, $(1 - \gamma)R_S(\sigma, \delta)$ and $\gamma R_I(\sigma, \delta)$.

Equilibrium Behavior and Comparative Statics

We now offer our solution for the full model presented above, but note after presenting each of its equilibrium and comparative statics what changes there are in the stripped-down version in the text.

Equilibrium

This is a four stage, sequential, complete information game. We solve for the subgame perfect equilibria via backward induction. The five terminal nodes of the reduced-form game represented by Figure 2 are potential equilibrium outcomes.

Though the game we presented has four stages, we already determined the constituency's and the backers' equilibrium levels of support, $s_O^*(\phi(1 + \delta), \sigma\delta)$ and $s_B^*(\phi, \beta_2)$, in the course of detailing our model. Thus we begin our equilibrium analysis in stage 2.

In stage 2, the commander (C) only has a decision to make in the history in which the leader (L) has chosen to fire (F) him. C's decision in this case is straightforward: Choose W whenever $R_W \geq \max\{(1 - \gamma)R_S - pR_N, \gamma R_I - pR_N\}$, I whenever $R_W < \gamma R_I - pR_N$ and $\gamma R_I \geq (1 - \gamma)R_S$, and S whenever $R_W < (1 - \gamma)R_S - pR_N$ and $\gamma R_I < (1 - \gamma)R_S$. Note that we've chosen to eliminate indifference by breaking utility ties in favor of comparatively less "risky" options: W over I over S, under the presumption that the first involves an immediate payoff, the second a delayed payoff potentially affected by the internal politics of the rivals, and the third a payoff dependent on the eventual success of the splinter group.

These conditions depend on the endogenous choice of R_W . In equilibrium, L will choose R_W to be the minimum to make C accept, conditional on L's preferring W to other outcomes. This implies that $R_W^* = \hat{R}_W \equiv \max\{0, (1 - \gamma)R_S - pR_N, \gamma R_I - pR_N\}$ whenever L would want C to accept this, which happens whenever $pu_N - \hat{R}_W \geq -\gamma u_I$ if $\gamma R_I \geq (1 - \gamma)R_S$ or

$pu_N - \hat{R}_W \geq -(1 - \gamma)u_S$ if $\gamma R_I < (1 - \gamma)R_S$, and $R_W^* = 0$ otherwise.

We can split these conditions into five cases to determine what happens upon a firing.

0. $\hat{R}_W = 0$, which implies $(1 - \gamma)R_S - pR_N \leq 0, \gamma R_I - pR_N \leq 0$. In this case W is always chosen by C.
1. $\gamma R_I \geq (1 - \gamma)R_S, \gamma R_I - pR_N > 0$, so that $\hat{R}_W = \gamma R_I - pR_N$, and $R_W^* = \hat{R}_W$, so that $pu_N - (\gamma R_I - pR_N) \geq -\gamma u_I$. In this case W is always chosen by C.
2. $\gamma R_I < (1 - \gamma)R_S, (1 - \gamma)R_S - pR_N > 0$, so that $\hat{R}_W = (1 - \gamma)R_S - pR_N$, and $R_W^* = \hat{R}_W$, so that $pu_N - ((1 - \gamma)R_S - pR_N) \geq -(1 - \gamma)u_S$. In this case W is always chosen by C.
3. $\gamma R_I \geq (1 - \gamma)R_S, \gamma R_I - pR_N > 0$, so that $\hat{R}_W = \gamma R_I - pR_N$, and $R_W^* = 0$, so that $pu_N - (\gamma R_I - pR_N) < -\gamma u_I$. In this case I is always chosen by C.
4. $\gamma R_I < (1 - \gamma)R_S, (1 - \gamma)R_S - pR_N > 0$, so that $\hat{R}_W = (1 - \gamma)R_S - pR_N$, and $R_W^* = 0$, so that $pu_N - ((1 - \gamma)R_S - pR_N) < -(1 - \gamma)u_S$. In this case S is always chosen by C.

In stage 1, the leader's choice is dependent on what will happen in stage 2; thus we need to determine L's action in each of the five cases above. This leads to three sets of conditions that determine when K, N, and F are played, where we've again assumed less risky actions are taken in the case of indifference, with K less risky than N, which is less risky than F. In each case the conditions from the previous list are additionally assumed. To make our notation clearer we define four important utility differences: $b^1(\beta_2) = s_B^*(\phi_K, \beta_2) - s_B^*(\phi_F, \beta_2)$, $b^2(\beta_2) = s_B^*(\phi_F, \beta_2) - s_B^*(\phi_N, \beta_2)$, $o^1(\sigma, \delta) = s_O^*(\phi_N(1 + \delta), \sigma\delta) - s_O^*(\phi_F(1 + \delta), \sigma\delta)$, and $o^2(\sigma, \delta) = s_O^*(\phi_F(1 + \delta), \sigma\delta) - s_O^*(\phi_K(1 + \delta), \sigma\delta)$. In other words, b^1 and o^1 represent the decline in support from, respectively, the backers' and constituency's best outcomes to their second best outcomes, and b^2 and o^2 represent the decline in support from second to third best outcomes. Prior assumptions on support imply that $\frac{\partial b^i}{\partial \beta_2} \geq 0$, $\frac{\partial o^i}{\partial \nu} \geq 0$, and $\frac{\partial^2 o^i}{\partial \sigma \partial \delta} \geq 0$ for $i \in \{1, 2\}$, $\nu \in \{\sigma, \delta\}$.

First set: L chooses K. This requires $\gamma(\beta_1(b^1 + b^2) - \alpha(o^1 + o^2)) - u_N \geq 0$ and:

0. $\gamma(\beta_1 b^1 - \alpha o^2) - pu_N \geq 0$.
1. $\gamma(\beta_1 b^1 - \alpha o^2) - pu_N + \gamma R_I - pR_N \geq 0$.

$$2. \gamma(\beta_1 b^1 - \alpha o^2) - pu_N + (1 - \gamma)R_S - pR_N \geq 0.$$

$$3. \gamma(\beta_1 b^1 - \alpha o^2) + \gamma u_I \geq 0.$$

$$4. \gamma(\beta_1 b^1 - \alpha o^2) + (1 - \gamma)u_S \geq 0.$$

Second set: L chooses N. This requires $\gamma(\beta_1(b^1 + b^2) - \alpha(o^1 + o^2)) - u_N < 0$ and:

$$0. \gamma(\alpha o^1 - \beta_1 b^2) + (1 - p)u_N \geq 0.$$

$$1. \gamma(\alpha o^1 - \beta_1 b^2) + (1 - p)u_N + \gamma R_I - pR_N \geq 0.$$

$$2. \gamma(\alpha o^1 - \beta_1 b^2) + (1 - p)u_N + (1 - \gamma)R_S - pR_N \geq 0.$$

$$3. \gamma(\alpha o^1 - \beta_1 b^2) + u_N + \gamma u_I \geq 0.$$

$$4. \gamma(\alpha o^1 - \beta_1 b^2) + u_N + (1 - \gamma)u_S \geq 0.$$

Third set: L chooses F. This requires:

$$0. \gamma(\beta_1 b^1 - \alpha o^2) - pu_N < 0 \text{ and } \gamma(\alpha o^1 - \beta_1 b^2) + (1 - p)u_N < 0.$$

$$1. \gamma(\beta_1 b^1 - \alpha o^2) - pu_N + \gamma R_I - pR_N < 0 \text{ and } \gamma(\alpha o^1 - \beta_1 b^2) + (1 - p)u_N + \gamma R_I - pR_N < 0.$$

$$2. \gamma(\beta_1 b^1 - \alpha o^2) - pu_N + (1 - \gamma)R_S - pR_N < 0 \text{ and } \gamma(\alpha o^1 - \beta_1 b^2) + (1 - p)u_N + (1 - \gamma)R_S - pR_N < 0.$$

$$3. \gamma(\beta_1 b^1 - \alpha o^2) + \gamma u_I < 0 \text{ and } \gamma(\alpha o^1 - \beta_1 b^2) + u_N + \gamma u_I < 0.$$

$$4. \gamma(\beta_1 b^1 - \alpha o^2) + (1 - \gamma)u_S < 0 \text{ and } \gamma(\alpha o^1 - \beta_1 b^2) + u_N + (1 - \gamma)u_S < 0.$$

These conditions specify the unique equilibrium of the game for any set of parameter values. Each of the five possible outcomes of the game, (i) K; (ii) N; (iii) F, W; (iv) F, I; and (v) F, S, occurs in equilibrium in a subspace of the overall parameter space.

In the stripped-down version of the model we present in the text, there are two relevant differences. The first is that we need to eliminate γ , $(1 - \gamma)$, and β_2 from all terms in our derivation. The second is that the I option is no longer present, which eliminates all terms with an I subscript. This has a few consequences. First, we instead have that $R_W^* = \hat{R}_W \equiv \max\{0, R_S - pR_N\}$ whenever L would want C to accept this, which happens whenever $pu_N - \hat{R}_W \geq -u_S$, and $R_W^* = 0$ otherwise. Second, the first and the third of the five post-firing cases no longer are relevant. This also eliminates the first and third sets of conditions in each of the three sets of conditions corresponding to L's choices. Third, for the remaining three cases, all conditions involving R_I are eliminated.

Comparative Statics

We now compute comparative statics for each of the six parameters in the model: $\beta_1, \beta_2, \alpha, \delta, \sigma$, and γ . We briefly discuss the effect of these parameters on the commander's decisions before turning to our true interest: the leader's choice of K, F, or N.

Commander's Choice

The commander effectively has a nested decision to make. If a non-zero payout R_W is offered or if both other options are worse than the chance of returning to the group despite no payout (i.e., $\hat{R}_W = 0$), then he chooses W. Otherwise, he chooses I if $\gamma R_I \geq (1 - \gamma)R_S$ and S if not. There are three parameters that affect the latter decision: γ, σ , and δ . As γ increases, C is (weakly) more likely to choose I than S in equilibrium.³⁷ As $\nu \in \{\sigma, \delta\}$ increases, I becomes more likely whenever $\frac{\partial}{\partial \nu}(\gamma R_I - (1 - \gamma)R_S) \geq 0$. In other words, if commander ability or group decentralization increases payouts to I faster than to S.

It is not necessary to offer any payout when $\hat{R}_W \equiv \max\{0, (1 - \gamma)R_S - pR_N, \gamma R_I - pR_N\} = 0$. This is more likely to occur for large p , and so for small β_1 and β_2 . It is also more likely to occur when R_N is large compared to R_S and R_I , so when the group offers the best source of employment. This happens when $\nu \in \{\sigma, \delta\}$ increases if $\frac{\partial}{\partial \nu}(\max\{\gamma R_I, (1 - \gamma)R_S\} - pR_N) \leq 0$.

When $\hat{R}_W > 0$, $R_W^* > 0$ if $\hat{R}_W \leq pu_N + \gamma u_I$ or if $\hat{R}_W \leq pu_N + (1 - \gamma)u_S$, depending on what C would choose if no payoff were offered. If I would be chosen, this becomes $\gamma R_I - pR_N \leq pu_N + \gamma u_I$, or $\gamma(R_I - u_I) \leq p(u_N + R_N)$. Similarly, if S would be chosen, we have: $(1 - \gamma)(R_S - u_S) \leq p(u_N + R_N)$. Both are more likely the higher is p , and so the lower are β_1 and β_2 . Both are also more likely the larger is the worth to L of C's being in the group, as well as the larger is the cost to L of I or S, but less likely the larger is the value C gets for being in the group. This happens when $\nu \in \{\sigma, \delta\}$ increases if $\frac{\partial}{\partial \nu}(\gamma(R_I - u_I) - p(u_N + R_N)) \leq 0$ and $\frac{\partial}{\partial \nu}((1 - \gamma)(R_S - u_S) - p(u_N + R_N)) \leq 0$.

³⁷To simplify discussion we often leave off the "(weakly)" in what follows. Including weakly is necessitated by the discrete nature of the first and second stage choices in our game. There are more complex solutions to this problem, including quantal response equilibrium, noise in the utility functions, or distributions over parameters, but as all yield the same insights we stick with the easier one.

Leader's Choice

The first set of conditions above specify when the leader chooses K. By inspection, all six conditions are more easily satisfied as β_1 and β_2 increase, and as α decreases. K is (weakly) more likely to be chosen by L as $\nu \in \{\sigma, \delta\}$ decreases if: (i) L would chose N over F; (ii) L would choose F over N and $\hat{R}_W = 0$; or (iii) L would choose F over N and $\hat{R}_W > 0$ and $-\gamma\alpha\frac{\partial o^2}{\partial \nu} + Z \leq 0$, where $Z = -p\frac{\partial(u_N+R_N)}{\partial \nu} + \gamma\frac{\partial R_I}{\partial \nu}$ if W would be chosen over I and I over S, $Z = -p\frac{\partial(u_N+R_N)}{\partial \nu} + (1-\gamma)\frac{\partial R_S}{\partial \nu}$ if W would be chosen over S and S over I, $Z = \gamma\frac{\partial u_I}{\partial \nu}$ if I would be chosen over W and S, and $Z = (1-\gamma)\frac{\partial u_S}{\partial \nu}$ if S would be chosen over W and I. K is (weakly) more likely to be chosen by L as $\nu \in \{\sigma, \delta\}$ increases if (iii) holds save that its inequality is reversed.

K is (weakly) more likely to be chosen by L as γ increases if $\beta_1(b^1 + b^2) - \alpha(o^1 + o^2) \geq 0$ and $\beta_1 b^1 - \alpha o^2 + Z \geq 0$ where $Z = 0$ if $\hat{R}_W = 0$ and if $\hat{R}_W > 0$, $Z = R_I$ if W would be chosen over I and I over S, $Z = -R_s$ if W would be chosen over S and S over I, $Z = u_I$ if I would be chosen over W and S, and $Z = -u_S$ if S would be chosen over W and I. K is (weakly) more likely to be chosen by L as γ decreases if all inequalities are reversed. γ has an indeterminate effect on the choice of K otherwise.

The second set of conditions above specify when the leader chooses N. By inspection, all six conditions are more easily satisfied as α increases. N is (weakly) more likely to be chosen by L as β_1 decreases if: (i) L would choose K over F; (ii) L would choose F over K and I would be chosen over W and S or S over W and I; or (iii) L would choose F over K and W would be chosen over I or S and $\gamma b^2 + \frac{\partial p}{\partial \beta_1} Z \geq 0$ where $Z = u_N$ if $\hat{R}_W = 0$ and $Z = u_N + R_N$ if $\hat{R}_W > 0$. N is (weakly) more likely to be chosen by L as β_1 increases if (iii) holds save that its inequality is reversed. Similarly, N is (weakly) more likely to be chosen by L as β_2 decreases if: (i) L would choose K over F; (ii) L would choose F over K and I would be chosen over W and S or S over W and I; or (iii) L would choose F over K and W would be chosen over I or S and $\gamma\beta_1\frac{\partial b^2}{\partial \beta_2} + \frac{\partial p}{\partial \beta_2} Z \geq 0$ where $Z = u_N$ if $\hat{R}_W = 0$ and $Z = u_N + R_N$ if $\hat{R}_W > 0$. N is (weakly) more likely to be chosen by L as β_2 increases if (iii) holds save that its inequality is reversed.

L is (weakly) more likely to choose N as $\nu \in \{\sigma, \delta\}$ increases if (i) L would choose K over F; (ii) L would choose F over K and I would be chosen over W and S or S over W and I or $\hat{R}_W = 0$; or (iii) L would choose F over K and W would be chosen with $\hat{R}_W > 0$ and $\gamma\alpha\frac{\partial o^1}{\partial \nu} + (1-p)\frac{\partial u_N}{\partial \nu} - p\frac{\partial R_N}{\partial \nu} + Z \geq 0$, where $Z = \gamma\frac{\partial R_I}{\partial \nu}$ if I would be chosen over W and S, and $Z = (1-\gamma)\frac{\partial R_S}{\partial \nu}$ if S would be chosen over W and I. L is (weakly) more likely to choose N as $\nu \in \{\sigma, \delta\}$ decreases if (iii) holds save that its inequality is reversed.

L is (weakly) more likely to choose N as γ increases if $-\beta_1(b^1 + b^2) + \alpha(o^1 + o^2) \geq 0$ and $-\beta_1 b^2 + \alpha o^1 + Z \geq 0$ where $Z = 0$ if $\hat{R}_W = 0$ and if $\hat{R}_W > 0$, $Z = R_I$ if W would be chosen over I and I over S, $Z = -R_s$ if W would be chosen over S and S over I, $Z = u_I$ if I would be chosen over W and S, and $Z = -u_S$ if S would be chosen over W and I. N is (weakly) more likely to be chosen by L as γ decreases if the inequalities are reversed. γ has an indeterminate effect on the choice of N otherwise.

The third set of inequalities above specify when the leader chooses F. As F, unlike K and N, is the choice taken when L must balance multiple costs and benefits, it is generally not the case that F will become uniformly more likely as one parameter increases or decreases. But it can happen over restricted parameter ranges. We consider each parameter in turn. As increasing α always makes the first of each pair of inequalities easier to satisfy but the second more difficult, it is not the case that increasing α has a uniform effect. Rather, increasing α will weakly increase the likelihood of F if doing so does not alter the fact that the second inequality holds. Similarly, decreasing α will weakly increase the likelihood of F if this does not alter the fact that the first inequality holds. As this behavior is solely an artifact of assumed discontinuities in choice behavior, we do not focus on it further and simply state that the comparative statics on α are not determined.

Next consider β_1 . Decreasing it weakly increases the likelihood that the first inequality holds in all cases. However, it weakly decreases the likelihood that the second inequality holds in cases 3 and 4, and so no uniform effect exists there. In cases 0-2, decreasing β_1 increases the likelihood that the second inequality holds whenever $-\frac{\partial p}{\partial \beta_1}Z \geq \gamma b^2$, where $Z = u_N$ if $\hat{R}_W = 0$ and $Z = u_N + R_N$ if $\hat{R}_W > 0$ and W would be chosen over S or I. Thus,

in this region of the parameter space, F is more likely as β_1 decreases. The same logic holds for β_2 , replacing the condition with $-\frac{\partial p}{\partial \beta_2} Z \geq \gamma \beta_1 \frac{\partial b^2}{\partial \beta_2}$.

Now consider $\nu \in \{\sigma, \delta\}$. Increases in ν have opposite effects on the two inequalities when $\hat{R}_W = 0$ (case 0) and so no uniform effect exists there. When I or S would be chosen over W (cases 3 and 4), the second inequality is always more difficult to satisfy as ν increases. For these cases decreases in ν lead to more F if the first inequality is also more difficult to satisfy as ν increases, which leads to the condition: $Z \geq \gamma \alpha \frac{\partial \sigma^2}{\partial \nu}$ where $Z = \gamma \frac{\partial u_I}{\partial \nu}$ if I would be chosen over W and S and $Z = (1 - \gamma) \frac{\partial u_S}{\partial \nu}$ if S would be chosen over W and I. When W would be chosen over S or I and $\hat{R}_W > 0$ (cases 1 and 2), there are two possible conditions under which ν has a uniform effect. If increasing ν makes the first inequality easier to satisfy, which happens when $\gamma \alpha \frac{\partial \sigma^2}{\partial \nu} + p \frac{\partial (u_N + R_N)}{\partial \nu} \geq Z$, then increasing ν leads weakly to more firing whenever $\gamma \alpha \frac{\partial \sigma^1}{\partial \nu} + (1 - p) \frac{\partial u_N}{\partial \nu} + Z \leq p \frac{\partial R_N}{\partial \nu}$, where for both conditions $Z = \gamma \frac{\partial R_I}{\partial \nu}$ if I would be chosen over S and $Z = (1 - \gamma) \frac{\partial R_S}{\partial \nu}$ if S would be chosen over I. If the first condition fails to hold, so increasing ν makes the first condition harder to satisfy, then decreasing ν leads to weakly more firing whenever the second condition also fails to hold. Otherwise there is no uniform effect of varying ν on firing.

Finally, consider γ and let $Z = 0$ if $\hat{R}_W = 0$ and if $\hat{R}_W > 0$, $Z = R_I$ if W would be chosen over I and I over S, $Z = -R_s$ if W would be chosen over S and S over I, $Z = u_I$ if I would be chosen over W and S, and $Z = -u_S$ if S would be chosen over W and I. L becomes weakly more likely to fire as γ increases whenever $\beta_1 b^1 - \alpha \sigma^2 + Z \leq 0$ and $\alpha \sigma^1 - \beta_1 b^2 + Z \leq 0$ and weakly more likely to fire as γ decreases when both inequalities are reversed. γ has an indeterminate effect on the choice of F otherwise.

In the stripped-down version of the model we present in the text, there are three relevant differences in the comparative statics. One, the definition of \hat{R}_W is now as given above at the end of the equilibrium analysis section, without any R_I or $(1 - \gamma)$ terms. Two, all comparative statics relating to the choice of I are not relevant and may be ignored. Thus the only relevant comparison is between the W and S choices, and many conditions are simplified, as discussed above. Three, all comparative statics involving γ and β_2 are not

relevant and may be ignored.

Additional Results

To conclude this appendix, we mirror the text's discussion of determinants of the leader's choice, focusing on the effects of the two parameters left out of the stripped-down model: β_2 and γ .

We begin again with the choice of killing the commander. More serious infractions, as one would expect, make this more likely. The strength of rivals acts to enhance the influence of the more important source of group support. If the benefit of backer support outweighs the loss of constituency support, then stronger rivals generally enhance the effect, making killing more likely.³⁸

Next we consider internal discipline. Rivals have a similar effect on internal discipline as on killing. If the benefits of constituency support outweigh the cost of the loss of backer support, then stronger rivals make internal discipline more likely.³⁹ Decreasing the seriousness of the infraction has exactly the same effect on the likelihood of internal discipline as does decreasing the strength of, and the group's dependence on, the backers. As we described it in the text, we do not repeat it here.

Finally, we consider firing. As noted in the text, and as seen above, firing betrays complex relationships with most parameters. However, it does relate cleanly to one parameter: rivals' strength. Increasing rivals' strength makes firing more likely whenever the costs in loss of backer and constituency support upon firing are smaller than the respective costs upon internal discipline and killing, and either (i) the commander would choose to form a splinter group rather than inform, or (ii) the reverse is true but the cost to the leader of being informed on is relatively low. If the opposite of these conditions holds, decreasing rivals'

³⁸The only exception to this occurs when the commander would choose to start a splinter group rather than inform and the leader has chosen to kill in order to avoid the high cost of a splinter group or the high withdrawal payout to prevent a splinter group.

³⁹The only exception to this occurs when the commander would choose to start a splinter group rather than inform and the leader has chosen to employ internal discipline in order to avoid the high cost of a splinter group or the high withdrawal payout to prevent a splinter group.

strength leads to more firing. Thus, as long as firing is not too costly, strong rivals can enhance the need to keep both backers and constituency in the fold after the commander's infraction.