Tenure through tyranny? Repression, dissent, and leader removal in Africa and Latin America, 1990–2006

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Tenure through Tyranny? Repression, Dissent, and Leader Removal in Africa and Latin America, 1990–2006

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Abstract

With few exceptions, prior research on leadership survival focuses largely on state institutional characteristics or economic context. We shift this orientation by explicitly considering the important role contentious interactions between the incumbent regime and dissident actors play in determining the duration of leader tenure as well as the manner in which a leader is removed. Specifically, we focus on the severity of the incumbent leader's response to dissident challenges. We contend that the severity of this response represents a critical signal which informs the decisions of specific audiences that ultimately determine the incumbent's survival. To evaluate our argument, we employ detailed information on dissent–repression dynamics and leader survival for a leader-month sample of 69 African and Latin American states between 1990 and 2006. Our results suggest that incumbents are vulnerable to coup d' état when government repression is perceived as weaker than would normally be expected for a given challenge. By contrast, removal via revolution becomes increasingly likely when repression dramatically exceeds the levels that would normally be warranted given the extant challenge.

Resumen

Con pocas excepciones, las investigaciones anteriores sobre la supervivencia del liderazgo se centran en gran medida en el contexto económico o en las características institucionales del Estado. Cambiamos esta orientación considerando explícitamente la función importante que cumplen las interacciones conflictivas entre el régimen de turno y los actores disidentes en la determinación de la duración del ejercicio del líder, así como de la manera en que se lo destituye. Específicamente, nos centramos en la severidad de la respuesta del líder de turno a los desafíos de los disidentes. Sostenemos que la severidad de esta respuesta representa una señal fundamental que conforma las decisiones de públicos específicos que finalmente determinan la supervivencia de quien está de turno. Para evaluar nuestro argumento, empleamos información detallada sobre la dinámica de desacuerdo-represión y la supervivencia del líder para una muestra de líderes y meses de 69 Estados africanos y latinoamericanos entre 1990 y 2006. Nuestros resultados sugieren que quienes están de turno son vulnerables a sufrir un golpe de Estado cuando la represión gubernamental se percibe como más débil de lo que se esperaría normalmente ante un desafío determinado. En cambio, la destitución mediante la rev-

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olución se torna cada vez más probable cuando la represión excede drásticamente los niveles que normalmente se justificarían dado el desafío vigente.

Résumé

quelques exceptions près, les recherches précédentes sur la survie du leadership se sont largement concentrées sur le contexte économique ou les caractéristiques institutionnelles des États. Nous changeons cette orientation en prenant explicitement en considération le rôle important que jouent les interactions conflictuelles entre régime au pouvoir et acteurs dissidents dans la détermination de la durée pendant laquelle le dirigeant reste au pouvoir ainsi que dans la manière dont un dirigeant est destitué. Plus précisément, nous nous concentrons sur la sévérité de la réponse du dirigeant en place aux contestations des dissidents. Nous soutenons que la sévérité de cette réponse représente un signal essentiel qui informe les décisions de publics spécifiques qui déterminent en définitive la survie au pouvoir du dirigeant en place. Pour évaluer notre argument, nous employons des informations détaillées sur les dynamiques de dissidence/répression et la survie au pouvoir des dirigeants pour un un échantillon de dirigeant/mois de 69 États d'Afrique et d'Amérique latine entre 1990 et 2006. Nos résultats suggèrent que les dirigeants en place sont vulnérables au coup d'état lorsque la répression du gouvernement est perçue comme plus faible qu'il serait normalement attendu pour une contestation donnée. À l'inverse, une destitution par la révolution devient de plus en plus probable lorsque la répression dépasse considérablement les niveaux qui seraient normalement garantis compte tenu de la contestation en cours.

When incumbents face organized dissent such as strikes and protests, they routinely employ coercive force in the hopes of subduing these challenges, strengthening their authority, and extending their tenure in office. Indeed, repression in the face of rising opposition threat is so common that scholars often refer the relationship as the "law of coercive responsiveness" (e.g., Davenport 2007). Despite the frequency with which incumbents utilize repression as a strategy for managing dissent, its effectiveness at deterring opposition challenges and promoting leader survival remain ambiguous. In particular, research on leadership tenure has largely focused on structural and contextual factors, including regime type, economic performance, international crises, and domestic conflicts and has rarely investigated whether the specific strategies leaders adopt promote their survival or hasten their removal. Few empirical studies have explicitly sought to investigate this relationship, and those that have drawn contrasting conclusion about the effectiveness of repression as a tool of regime survival (see Bueno de Mesquita and Smith 2010; Escribà-Folch 2013).

In this manuscript, we therefore shed light on this important but often overlooked relationship. We advance the existing literature by explicitly acknowledging that neither dissent nor repression influences regime survival in isolation; rather, it is the balance of coercive challenger–government interactions that directly influences the probability that the incumbent retains office or is focibly removed. More specifically, the publically observed outcomes of repeated interactions between dissident actors and the incumbent regime provide important signals to key audiences—namely military elites and the mass citizenry—that help them determine their utility for intervening in an ongoing political contest or remaining on the sidelines. When these players remain neutral or continue to support the incumbent, she is likely to survive; yet, when they defect in large numbers, the odds of removal sharply increase.

We develop this argument in greater detail formally and informally. We first review the diverse strands of research concerning the relationships among regime survival, repression, and dissent—highlighting the complex interactions among these factors. We then develop a theoretical model that illuminates the precise way in which challenger–government interactions construct a given "political order" and how different patterns of these interactions influence leadership tenure. We empirically evaluate our argument using data on repression and dissent dynamics as well as leader tenure from 69 African and Latin American states from 1990 to 2006. Our

analysis suggests that the balance of behavioral challenges—expressed as the deviation in the level of repression observed from what would have been expected on the basis of the recent levels of dissent—directly influences both the time of and the manner of incumbent removal. Specifically, we find that a leader's likelihood of overthrow by *coup* increases where the incumbent employs significantly less repression than would be expected given the challenges she faces. By contrast, the likelihood of overthrow in a popular *revolution* increases when regime repression dramatically outpaces what is expected given observed dissent. Our argument and results demonstrate that political authorities effectively have to navigate between too much repression, which leads to one form of removal, and too little repression, which leads to another. We conclude with a brief discussion of the implications of the findings and directions for future research.

Understanding Leader Survival and Exit

Empirical research on the survival of political leaders has traditionally focused on two central arguments. The first maintains that leaders are sustained in office by policy concessions (i.e., general cooptation). When political actors are provided with a means to voice grievances "inside the system" and pursue their interests, they are generally less likely to challenge existing authorities and thus less likely attempt to overthrow incumbent leaders (Gandhi and Przeworski 2007; Geddes 1999). Accordingly, this research focuses on the influence of system openness and, in particular, the roles of political parties in mitigating behavioral challenges. The second argument is that leaders are sustained by patronage (i.e., specific cooptation). Here, authorities are more likely to retain power where they have the ability to "pay off" particular challengers through the manipulation of resources such as oil rents (Smith 2004; Ulfelder 2007), nontax revenue (Morrison 2009), foreign aid (Licht 2010; Wright 2008), and the promise of political rewards and various side payments (Arriola 2009).

An important limitation of this research is that it often ignores that political leaders rely on both cooptation and coercion to preserve their position (e.g., Machiavelli 1980; Wintrobe 1998). A recent study by Bueno de Mesquita and Smith (2010), however, deviates from prior scholarship by considering leaders' efforts to coopt would-be challengers from within mainstream political institutions as well as leader's efforts to thwart revolutionary challenges, typically via repression. While acknowledging the role of state coercion and violence in leader survival, their argument focuses predominantly on leaders' efforts to hinder challenger mobilization,

such as through the implementation of restrictions on speech, movement, and association. Somewhat surprisingly, political dissent—and the physical repression that it often provokes—are not central to their argument. Moreover, their argument fails to explicitly consider how the two forms of contention interact with one another to influence leader survival. Most relevant to our study, their empirical results suggest that physical repression has no significant impact on leader survival whatsoever. This finding is puzzling given that leaders are assumed to use repressive behavior explicitly and strategically because they believe it will help them retain power (Frugé 2019; Ritter 2014; Ritter and Conrad 2016). Empirical evidence that repression fails to extend leader survival represents a major challenge to much of this research and presents an important opportunity to examine other possible justifications for its use.

One other analysis (Escribà-Folch 2013) explicitly examines the impact of repression on leader exit in autocracies and finds that state coercion/force can reduce the likelihood of leader ouster in some contexts. Specifically, it concludes that physical repression promotes leader survival by reducing the odds of constitutionally sanctioned methods of removal, such as coups and revolutions. Similar to Bueno de Mesquita and Smith (2010), the author finds that restrictions on coordination goods reduce the likelihood of leader ouster across different types of removal. Curiously, however, the results of this study suggest that physical repression fails to promote leader survival under the conditions in which leaders are most likely to apply it: in the face of mass dissent. While this study finds that physical repression can reduce coup risk, the logic for this outcome remains unclear, and the author simply asserts that the effect is indeterminate.

While these studies suggest a possible role for repressive action in shaping leader survival, both treat repression and dissent as separate and distinct processes. The limited attention given to the processes inherent in contentious politics—namely the iterative and interactive processes of political dissent and state repression—and the specific actors involved in the removal of political leaders is problematic because it misrepresents or misunderstands the dynamics of leader removal and marginalizes the role that efforts at political change and maintaining the status quo play in that process. Chenoweth and Belgioioso (2019) underline the importance of studying the iteration of contentious events in the dynamics of leader removal. Borrowing the concept of momentum from physics, they argue that in addition to the size of protests, the change frequency and scale represent an important predictor of their ability to disrupt state control and thus contribute to leader removal. While identifying

an important factor associated with leader removal, their study does directly consider how the interaction of repressive actions undertaken by the incumbent shapes the behaviors of dissidents, which in turn determines regime survival. Moreover, while their analysis includes cases of incumbent removal via coup, they do not treat the military as an independent actor capable of ousting the incumbent; nor do they theorize on how patterns of dissent and repression might influence its interests or actions.

Only a handful of studies have explicitly modeled or undertaken rigorous empirical evaluation of the interdependence of dissent and repression. Those studies that have (e.g., Pierskalla 2010; Ritter 2014) underscore the strategic nature of dissent–repression and demonstrate that not only do the state and citizens consider rival actors' beliefs but also signal their preferences and resolve through the actions they adopt. For example, Pierskalla (2010) shows that governments use repression to signal strength and resolve to a threat from within the government. Although these approaches bring a new perspective to studying dissent–repression nexus, it models only a single interaction with limited discrete strategic actions for the actors and therefore overlooks the dynamic and continuous nature of the strategic choices the actors make. For example, while the incumbent might find it beneficial to fully use its coercive power to send a strong signal to within-coalition rivals, thus reducing the likelihood of a coup, this disproportionate use of violence may cause dissatisfaction among citizens, facilitating popular mobilization and hastening incumbent ouster via revolution. Existing studies have not consider this trade-off, how the incumbent manages it, or how these dynamics influence the timing and means of incumbent removal. We therefore consider these issues as we develop our argument in the subsequent section.

(Dis)Order, Response, and Survival

In this section we present an argument that advances the current literature by expressly focusing on the manner in which patterns of dissident–state interactions shape both the timing and method of incumbent removal (i.e., coup vs. revolution). As we explain in this section, the actions of dissidents (e.g., level of protest actions) and the responses chosen by incumbent political authorities (e.g., severity of repression) influence the strategies adopted by other influential actors within the nation-state. These actors include uncommitted citizens who might, under the right circumstance, join with the dissidents to challenge the regime, and the military, who possess the coercive power to defend the leadership or defect and hasten its removal from power. These actors frequently have the most significant influence on subsequent regime survival

by deciding whether (and when) to support or oppose the incumbent. Here we discuss these two broad categories of actors as well as how the observed outcomes of dissident–state interactions influence the strategic decisions of these key audiences and, in turn, influence the incumbent's fate.

Actors and Actions

In line with previous analyses of regime stability and leader survival, we assume that incumbents require the allegiance of some key coalition of actors within the state to retain their positions (e.g., Bueno de Mesquita et al. 2005). The composition and size of the coalition necessary to maintain control vary according to the institutional arrangements of the state. However, even autocratic regimes must satisfy the demands of key constituencies in order to retain their positions (Bueno de Mesquita et al. 2005; Ulfelder 2005; Weeks 2012). Despite the numerous constituencies that might influence leaders, the existing literature generally acknowledges that two particular groups within all polities ultimately determine regime survival: the *military* and the *mass citizenry*. We maintain that any incumbent generally retains power because of the (in)action of these two key groups. Understanding regime survival therefore requires identifying the conditions under which these groups forego passivity (the status quo) and instead intervene to challenge and potentially topple the incumbent. With this in mind, we argue that each of these actors observes the patterns of interactions between existing dissidents (those who have decided to explicitly challenge existing authorities) and government agents (those who have decided to protect the status quo). These actors then use the information gleaned from the outcome of these interactions to determine whether or not they will continue to support the incumbent or withdraw that support and actively oppose her.

The military, as an organization, is central to incumbent survival because it possesses the power to remove the incumbent with violent force via a coup d' état. It maintains this ability because it controls the most devastating coercive power within the territorial domain of the modern nation-state. Political leaders are commonly assumed to hold a monopoly on violence, but this perspective ignores the reality that presidents and cabinet members generally do not exert direct control over the military in most cases. Instead, leaders rely upon generals and other military authorities to execute their coercive policies. Moreover, they typically expect that the individuals with the most direct access to lethal technologies will render themselves accountable/subservient to the incumbent leader.

While an efficient chain of command is frequently assumed (both in practice and theory), principal-agent problems often produce unexpected and, at times, detrimental outcomes such as excessive or indiscriminate violence (e.g., DeMeritt 2015; Mitchell 2004). However, the military is not simply a tool of the incumbent regime. Rather, it routinely functions as an independent actor that possesses the ability to either defend or threaten the incumbent during moments of crisis. Often, the survival of the incumbent hinges on just this decision: where the military backs the regime it is more likely to survive, and where it turns against the regime incumbent survival is threatened (e.g., Nepstad 2011). Notably, the manner in which the incumbent employs repression influences the loyalty of the military and its willingness carry out the incumbent's repressive policies (Frugé 2019). As we explain below, the decision to oust the regime versus remain neutral or back the incumbent partly depends on the military's perception of an unambiguous signal regarding the incumbent's resolve and her ability to defend the status quo by meeting the challenge posed by dissidents with sufficient coercive force.

The mass citizenry represents the second pivotal actor in our argument, and popular revolution is the relevant action associated with this group. We conceive of citizens as independent, agentic actors with the ability either to remain quiet and support the existing political authority or to voice their disagreement with the status quo and directly oppose the incumbent by joining political challengers. We assume that in (virtually) all societies, a critical mass of citizens maintains the potential to remove those in power from office. Individuals actively choose whether to remain neutral or to join the body of previously mobilized challengers. Although we consider the masses citizenry as an actor, we do not assume the citizens are homogeneous. Indeed, our theory is consistent with studies that find repression backfires (e.g., Sullivan, Loyle, and Davenport 2012) as it implies that excessive violence by state security forces can adversely affect citizens' attitude toward the incumbent. However, as we contend, citizens vary in terms of the level of repression necessary to push them to engage in public dissent. In the next section, we discuss how overrepression can promote popular revolution against the incumbent by the citizens.

(Re)Actions and Removal

Consistent with previous studies, we assume that both the military (e.g., Harkness 2014; O'Kane 1987) and the masses (e.g., Lichbach 1987; Moore 1998) make independent, strategic decisions about supporting or challenging the regime based on their assessment of the state

of political order within the country at a given time point.[1] In line with common expected utility approaches, we likewise assume the military and citizens choose the strategy that provides them with the greatest expected benefit. In choosing their strategies, the relevant actors receive and interpret signals generated from the interactions between dissidents and state forces (e.g., the police in our case) and use this information to determine whether the direction of this contest is moving closer to or farther away from their preferred outcome. If the (perceived) trajectory of the contest converges with the actors' preferences, they feel little pressure to intervene. However, if they perceive that the likely outcome of the contest will adversely impact their interests, they become increasingly likely to adopt strategies intended to alter that outcome.

We assume that the military values the reputation of their institution, any direct benefits supplied by the incumbent, and national stability, which allows them to avoid risks to their institution and to continue to reap benefits from the regime.[2] In this situation, they desire the incumbent to effectively and, because of their training and guiding military orientation, forcefully respond to dissident challenges with repressive action.[3] In this context, the manner in which the contentious events unfold provides relevant information for the military regarding how it should respond. For example, dissent coupled with the absence of a sufficiently coercive response (i.e., underrepressing) signals the weakness of the incumbent and the potential destabilization of the state. Because the military values order and desires a forceful response to dissident threats, underrepression is contrary to its interests.

Recent analyses suggest that the use of repression tends to increase following the ouster of the incumbent via coup (Lachapelle 2020), implying that the military as an organization often views coercive violence as a preferred strategy for the maintenance of authority. Moreover, anecdotal evidence suggests that military leaders are often willing to challenge the incumbent government when they perceived an insufficient coercive response to dissident treats. For instance, the Burma Socialist

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1. We assume neutrality is effectively a form of tacit support for the status quo.
2. Though see Stanley (1996), who argues that in El Salvador the military engineered crisis in order to sustain the flow of benefits.
3. The assumption that military decision makers are often more acceptant of violence and repression compared to civilian leaders is not particularly controversial, and it is largely supported by previous research (e.g., Horowitz and Stam 2014; Svolik 2013).

Programme Party (BSPP), which was led by General Ne Win, started a series of socialist economic reforms in 1988. In March 1988, dissatisfied university students protested against these policies. Soon, these protests spread thorough the country and other prodemocracy groups joined the students. These antigovernment demonstrations and violent clashes between the protestors and military led to the resignation Ne Win. While the demonstrations reached their peak in August, prodemocracy party delegates voted in favor of a multiparty government. In the meantime, security forces allowed daily protests, developed sympathy with the protestors, and even some of them joined them. On September 18, 1988, General Saw Maung led a military coup and severely repressed the dissidents.[4] The Iranian military likewise intervened in politics when it perceived an insufficient incumbent response to dissident mobilization. In July 1999, Basij[5] forces attacked student dormitories on the campus of University of Tehran following a series of previous clashes between student dissidents and the paramilitaries. This provoked further protests in Tehran and other major cities as students from other universities and reformist groups joined the protests.[6] Police forces also seemingly showed more tolerance with protestors. As the protests gained a momentum, the Islamic Revolutionary Guard Corps (IRGC) generals and commanders wrote a letter to Iran's president, Seyed Mohammad Khatami, and criticized his security forces' reluctance to suppress protests. The letter stated that if the government cannot show the resolve to quash protests, the generals and commanders will take the control.[7] These examples, as well as research on the "endgame coups" show that the military leaderships launch a coup in response to popular mass uprisings (Koehler & Albrecht 2021), especially when they perceive that the incumbent government fails to suppress the dissidents.

During periods of political unrest, the incumbent signals her resolve to maintain the status quo and resist challengers through the actions she undertakes and the orders she issues to her repressive agents (e.g., the military and police). When the incumbent escalates repression against challengers rather than offering concessions, the military is likely to perceive her as a stalwart actor who shares its preferences for maintaining the status

quo. It would therefore see little benefit to ousting the incumbent through a coup. Moreover, because repression serves as signal of incumbent strength and resolve (e.g., Frugé 2019; Pierskalla 2010), military leaders are likely to comply with incumbent orders and meet rising dissident challenges with increasingly coercive responses. By contrast, tensions between the military and incumbent are likely to increase where the actors' preferences diverge and where the military doubts the incumbents willingness to resist challenges to the status quo. For example, the military would likely view a sudden decline in the incumbent's willingness to repress dissent as a signal of weakness and flagging resolve. This signal, particularly if it occurs during periods of rising dissident threat, may persuade the military to oust the incumbent and replace her with a leader (possibly from its own ranks) who it believes is willing and capable of forcibly suppressing dissident challenges.[8]

We can formalize these interactions in the following way: If we show the level of state repression as $R \in [0, 1]$, then the level of military dissatisfaction is decreasing in R. Without loss of generality (and for the sake of simplicity), we assume that the military's dissatisfaction function is $U_c = \ln(\frac{\alpha}{R})$; where R is the level of state repression, and $\alpha > 0$ is a parameter showing how structural factors affect military leaders' tendency toward repression. Following statistical survival models, Equation 1 shows the survival hazard function that the incumbent is facing from the military. This coup hazard is positively associated with military dissatisfaction, and thus negatively associated with repression. Furthermore, h_0 shows the incumbent's baseline survival hazard, which is dependent on structural factors of the country.

$$H_c = h_0 \, \mathrm{e}^{U_c} = h_0 \, \mathrm{e}^{\ln\left(\frac{\alpha}{R}\right)} \qquad (1)$$

Figure 1 shows a schematic view of how military leaders respond to state repression, and how their reaction affects the survival of incumbent leaders. If the military is the only actor keeping the incumbent in power, then the optimal policy for the incumbent is maximizing the level of repression to minimize the risk of a military coup. Yet, there is another actor whose actions influence incumbent survival and produce a trade-off in repression policy: the

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4   See Guyot (1989) for a detailed discussion of Burma's 1988 Uprising.
5   A volunteer paramilitary force associated with the Islamic Revolutionary Guard Corp.
6   https://www.meforum.org/1979/the-revolutionary-guards-role-in-iranian-politics?gclid=CPDS8amUjpsCFSRPagodggNUpQ#_ftn40
7   See Kurzman (2001) for more information on this event.

8   An alternative possibility exists where the military prefers repression only up to a certain threshold, past which they view the government as incompetent or simply too brutal and thus retracts support. We discuss this nonlinear attitude toward repression in online Appendix B and show how it does not change the core theoretical implications. Moreover, we find no empirical support for this proposition.
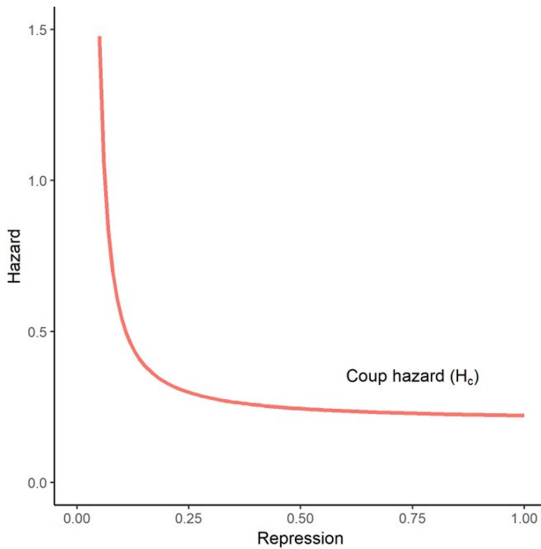
Figure 1. Coup hazard is decreasing in repression.

mass citizenry. We assume that the masses wish to avoid punishment by state security forces. Despite their general concern for physical security, many citizens also maintain strong—and sometimes superior—interest in righting perceived wrongs.

This observation alters the typical emphasis given in the political science literature away from the point that citizens are typically reluctant to engage in contentious political action for fear of reprisal or because they are often simply apolitical (see Olson 1965). Rather, our view draws upon insights from sociological and ethnographic studies (e.g., Hess and Martin 2006; Wood 2003), which demonstrate that while fear of sanctions does influence citizen behavior, "moral outrage" and a desire for agency are frequently key factors in individuals' decisions about whether or not to undertake costly collective action. Consequently, in contrast to the "political opportunity structure" literature (Brockett 1991; McAdam 1996), which argues that challenges against leaders increase when repression unexpectedly declines, we maintain that high levels of violence and repression may lead to backlash and serve as a catalyst for popular mobilization against the regime (Francisco 1995; Mason and Krane 1989; Wood 2003).

While we borrow insights from prior studies that highlight the counterproductive nature of indiscriminate violence, our argument differs in that we focus on the perceived (dis)proportionality of state repression rather than its absolute intensity or scope. More specifically, we contend that wide-spread revolutionary mobilization capable of removing the incumbent becomes increasingly likely when she employs repression that citizens perceive as substantially exceeding the level warranted by the scale of the threat.

Citizens have different tipping points at which they react to unfair use of violence by security forces against their peers (i.e., citizens). That said, it is reasonable to assume that as repression becomes increasingly disproportionate, the masses develop an increasingly negative attitude toward the incumbent. At some point, the disproportionality encourages citizens to reveal their discontent by actively supporting the already mobilized dissidents. Rasler (1996) discusses this mechanism in the 1979 Islamic Revolution in Iran. On 19 August 1978, the Cinema Rex of Abadan, Iran, was set ablaze and led to the death of about 420 people. The revolutionaries accused The National Organization for Security and Intelligence (SAVAK) intelligence agents and organized several large protests, including the Eid-Fitr prayer on 4 September 1978, in response to it. While Jafar Sharif-Emami's government mostly tolerated these protests initially, the rising momentum of protests led to martial law declaration. However, a large group of people in Tehran ignored the martial law on 8 September 1978 and gathered in Jaleh Square. The security forces shout the protestors indiscriminately, leading to the death of numerous people. Abrahamian (1982) argues that the Jale square events, known as the Black Friday, was the tipping point that faded the hope for a compromise between Shah and dissidents, as it increased the size of protests and triggered more strikes and protests among Iranians who were mourning for their fellow citizens.

Considering that repression increases citizens' dissatisfaction with incumbent leaders, we, without loss of generality, formalize this positive association: $U_r = \ln(\beta R^2)$. The dissatisfaction caused by state repression among civilians increases the number of civilians who join political dissent against incumbents, and thus increases the hazard of a revolutionary overthrow of the incumbents. Equation 2 shows how the risk of revolution is linked to state repression.

$$H_r = h_0\, e^{U_r} = h_0\, e^{\ln(\beta R^2)} \qquad (2)$$

H_r indicates the level of revolution hazard, which is positively associated state repression. Also, h_0 is the incumbent's baseline survival hazard, and $\beta > 0$ shows the sensitivity of the masses to repression. Figure 2 presents a schematic view of the relationship between state repression and revolution hazard. If the survival hazard of the incumbents was only dependent on the masses' satisfaction, the best repression policy could be minimizing its level to contain popular revolution. However,
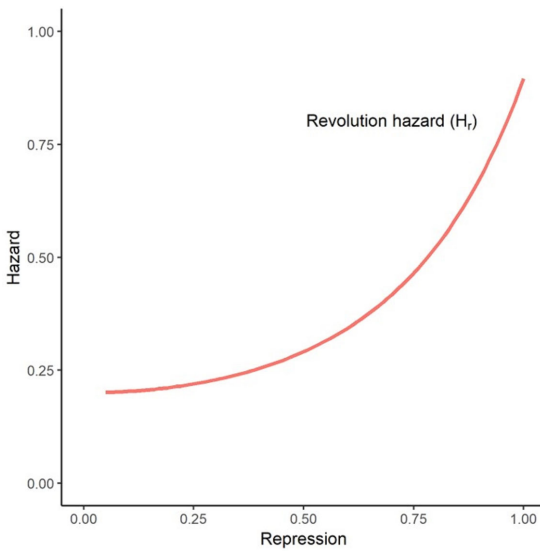
Figure 2. Revolution hazard is increasing in repression.

incumbents should minimize survival hazard posed by the masses and the military.

Dissident–state interactions produce information that is crucial to the decision calculus of both the military[9] and the masses. The reasons for this are straightforward. On the one hand, dissidents (i.e., those engaged in protest, demonstrations, strikes, sit-ins, boycotts, and the like) are the most visible and most active manifestation of political disorder. Their appearance, especially in large numbers, signals that some aspect of political authority is threatened. Dissidents issue demands via collective action and mobilization against the incumbent authorities. Furthermore, the accommodation of these demands by the incumbent regime threatens to fundamentally alter the existing political, economic and/or social system. On the other hand, the police or other domestic security forces represent the most visible manifestation of state coercive/forceful power and political order. These actors frequently respond to dissident challenges with relevant counteractivities such as increased monitoring, arrests, beatings, curfews, and possibly killings. Moreover, other relevant actors—namely the military and (as yet) uncommitted citizens—observe these contentious engagements.

9   We assume that the police represent the first line of coercive response to dissent. However, the argument would not change significantly if we assumed military units engaged in repression. The central question is whether military elites decide that they are satisfied with how security forces are utilized in the face of dissent.

Indeed, this is part of their purpose, as the interactions are intended to communicate resolve, credibility, strength, and intent to the relevant audience. Every interaction thus becomes a "performance" that influences the future actions of the audiences that observe them (Tilly 2008).

Following previous findings regarding the nonlinearity of repressive regime responses to dissent (and vice versa) (e.g., Lichbach 1987; Rasler 1996)—and in particularly Moore's (1998, 2000) insights about the importance of sequence, pattern, and actor expectations to the question of leader survival—we argue that the incumbent leaders' decisions regarding the severity of repression represent a critical factor in understanding the responses of the masses and the military, whose support (or defiance) ultimately determines her survival. When faced with dissident challenges, leaders can select from a broad range of coercive stragies. Incumbents could meet dissident challenges with a proportional response, representing a form of tit-for-tat relationship. In contrast, incumbents could dramatically escalate repressive behavior in response to behavioral challenges in the hopes of smashing opponents with overwhelming, often indiscriminate force. Finally, incumbents could dramatically curtail repression in the face of dissent, perhaps making accommodations when repression is seen as unsuccessful. The first strategy, meeting dissent with proportional coercion, is expected to produce a relatively stable pattern of interactions in which the incumbent's security forces and dissidents clash, sometimes violently, but the overall stability of the regime persists. The last two strategy options, however, effectively fall off this equilibrium path and are instead likely to produce rapid changes in the political order, including the ouster of the incumbent via irregular means (e.g., revolution, rebellion, or coup). An implication of this argument is that the incumbent needs to identify the optimal level of repression that minimizes the risk of revolution and coup simultaneously, thus increasing her likelihood of survival.

Equation 3 shows the aggregate level of incumbent removal hazard when accounting for these factors. As discussed above, incumbent survival hinges on the military and the masses' support. Substituting Equations 1 and 2 in Equation 3, we find the incumbent's removal hazard function. In the online appendix, we solve the incumbents' hazard minimization problem. Given the parameters of the model (i.e., α and β) the removal risk (survival) of incumbents is minimized (maximized) at $R^* = \left(\frac{\alpha}{2\beta}\right)^{\frac{1}{3}}$. This optimal level of repression confirms our claim that the incumbents' best response is where the survival threats of militaries and masses are balanced. Furthermore, R^* is dependent on the sensitivity of the military and the masses to state repression. If the military,
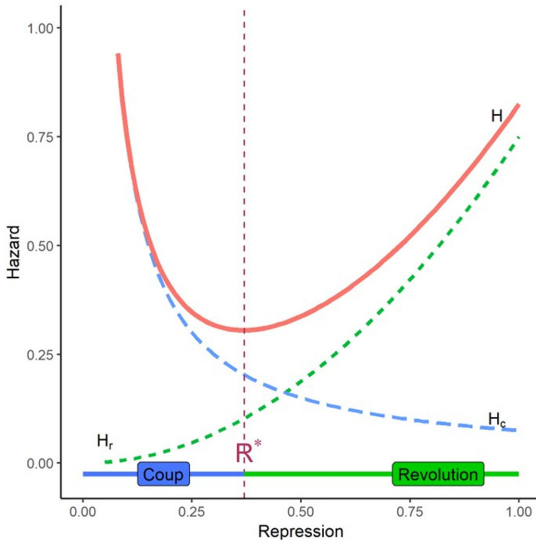
Figure 3. Optimal level of repression for incumbents considering the aggregate level of hazard, $H = H_c + H_r$.

as an institution, become structurally more supportive of repression (α increases) then R^* shifts to the right, showing a higher level of optimal repression for the incumbents. Similarly, if the masses become accustomed to a higher level of repression (β decreases), R^* shifts to the right, meaning that it is easier for the incumbents to use a higher level of repression.

$$H = H_c + H_r \quad (3)$$

$$H = h_0\, e^{\ln\left(\frac{\alpha}{R}\right)} + h_0\, e^{\ln\left(\beta R^2\right)} \quad (4)$$

$$H = h_0\left[\frac{\alpha}{R} + \beta R^2\right] \quad (5)$$

This theoretical framework allows us to examine how the two broad classes of actors identified above respond to the level of repression adopted by the regime *relative* to levels that would normally be anticipated given recent patterns of dissident–state interaction. In this sense, we seek to identify how unanticipated spikes or rapid dips in repression relative to dissent—that is, deviation from R^*—influence the actions of the military and the masses to oust the incumbent via coup or revolution, respectively. As the main implication of this model, R^* divides the repression response space into two areas. If the level of repression deviates from its optimal level, R^*, the likelihood of survival decreases. However, the types of threats and thus the outcomes of state–dissident interactions differ. As Figure 3 shows, the underproduction of repression

(when $R < R^*$) increases the risk of a military coup, and this risk is defined by the size of the repression–deficit. On the other hand, overproducing repression (when $R > R^*$) decreases state survival by increasing the risk of revolution, a threat that increases as the level of repression overproduction increases.

We formalize the theoretical implications of our model as following hypotheses:

H1: *Where incumbents significantly underproduce repression relative to recent dissent, the likelihood of incumbent removal by coup increases.*

H2: *Where incumbents significantly overproduce repression relative to recent dissent, the likelihood of incumbent removal by revolution increases.*

Data

Evaluating the above hypotheses requires several pieces of information. First, we require information on the duration of a leader's tenure and the manner in which the leader departed office. This information is provided within the *Archigos* dataset version 2.9 (Goemans et al. 2009). Previous studies have generally used the *Archigos* dataset to evaluate leader removal by either "regular" or "irregular" means, the latter reflecting cases in which an incumbent is forced from office by extraconstitutional means such as coup, revolution, etc. Our argument focuses exclusively on irregular removal. However, we disaggregate irregular outcomes to assess the extent to which the over- or underproduction of repression relative to dissent influences the likelihood of *coups* and *revolutions*. We also require information on dissent and repression (our principal independent variables). As our argument is specifically concerned with the dynamic interactions between the two variables, this suggests the need for time-series data that covers both activities at a fairly fine level of temporal aggregation. We therefore rely on information on both state repression and dissident challenges contained in the recently released Social Conflict in Analysis Dataset (SCAD) (Salehyan et al. 2012). Combining these datasets produces as sample representing about 69 states in Africa and Latin American encompassing 246 distinct leadership spells for which we have data for the years 1990 to 2006. We choose the month as the temporal unit because it should reflect sufficient time for the outcomes of the interactions of interest (dissent and repressive response) to resonate with the appropriate audiences that essentially determine the fate of the incumbent. Comparatively, longer windows risk losing the dynamic nature of the processes upon which we focus while much shorter windows (e.g.,

the week) may not provide sufficient time to capture the expected response. Our analysis is limited to Africa and Latin America regions because SCAD currently only provides information for events taking place therein. Nonetheless, the large sample of diverse countries should allow us to generalize from the results. Aggregating the data in this way produces a sample of more than 11,000 leader-month observations.

Our argument focuses on the simultaneous levels of dissent and repression at a given moment and how this situation influences the willingness of other actors to intervene and oust the incumbent. The balance of dissent and repression results from the observed patterns of behavioral interaction between the challengers and incumbent. We are guided by the belief that sociopolitical actors tend to evaluate deviations from expectations as opposed to detailed evaluations of all information emerging from an environment. Information on specific events and interactions is usually only known after the fact; by contrast, citizens as well as political elites are often acutely cognizant of instances in which events dramatically diverge from expectations. We are therefore particularly interested in how unexpected deviations from observed patterns of behavior affect the calculus of these observing audiences.

To account for this theoretical mechanism, we utilize a method that captures the complexity of dissent–repression interactions and accounts for the under- or overuse of repression by the state. The indicator we construct for our analysis, *Unexpected Repression*, explicitly measures the extent to which the level of repression an incumbent employs deviates from the levels that audiences would anticipate given recent patterns of violent and nonviolent challenges to the status quo.[10] To create this measure, we first model the dissent–repression process using information available in SCAD. Specifically, we regress the monthly count of instances of government repression (lethal and nonlethal) observed within a given country on a series of variables that previous studies have routinely identified as important predictors of repression (e.g., Davenport 1995). These include the monthly counts of dissident actions (i.e., strikes, riots, and antigovernment protests) and antigovernment violence (terrorism, assassination, etc.), the month-on-month changes in these counts, a number of structural and economic factors (e.g., wealth, domestic political institutions, population size), and economic resources (oil and foreign aid as a propor-

tion of GDP).[11] Because current repression is highly influenced by previous patterns of repression, our models account for autoregressive disturbances (AR1 errors). Furthermore, we employ a fixed-effects estimator to account for the unit-level heterogeneity we would likely overlook using standard control variables alone.[12]

The information relevant for our analysis is captured in the residuals extract from this model. More specifically, because the residuals in this case reflect the deviation of a given observation (e.g., count of repression) from the values predicted by the model, they should serve as a rough proxy for the difference between observers' informed expectations about the level of repression an incumbent would employ and the level her agents actually mete out. Put differently, the residuals represent *Unexpected Repression*. Positive values of these variables (overrepression) reflect cases in which the observed number of repression events exceeded the number expected given recent protest activities plus relevant controls, whereas negative values (underrepression) reflect cases in which the observed value was less than what would have been expected after accounting for those factors.

Notably, our measure of *unexpected repression* is adjusted over time in response to changes in the significance of threats posed by dissidents. Given that dissent is strongly and positively correlated with repression, an increase (decrease) in dissent predicts greater (smaller) repression in the first-stage model (Table A1 in the online appendix). Therefore, for any observed level of repression, an increase in dissent increases the expected level of repression, and thus reduces the level of *unexpected repression*. Conversely, if dissent decreases for a given level of observed repression, the predicted level of repression decreases (Table A1 in the online appendix), and thus the *unexpected repression* increases. We contend that changes in the level of *unexpected repression* ultimately influence the chance of leader removal by coup and revolution. The advantage of this approach is that it

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10   The approach we describe here is similar to the technique employed by Palmer and Whitten (1999) to investigate voters' responses to *unanticipated* economic changes.

11    $Repression_{i,t} = \alpha_0 + \alpha_1 Repression_{i,t-1}$
$+ \alpha_2 \Delta Dissent_{i,t} + \alpha_3 Dissent_{i,t-1}$
$+ \alpha_4 \Delta Violence_{i,t} + \alpha_5 Violence_{i,t-1}$
$+ \alpha_6 Election_{i,t} + \alpha_7 Population_{i,t-1}$
$+ \alpha_8 GDPpc_{i,t-1} + \alpha_9 Aid_{i,t} + \alpha_{10} Oil_{i,t} + \alpha_{11} W_{i,t}$
$+ \alpha_{12} S_{i,t} + \mu_i + \epsilon_{i,t}$. A full list and description of these indicators as well as the results from these models are available in the online appendix.

12   In alternative specifications we employed Poisson models with a fixed-effects estimator and approximated the residuals by subtracting the observed values from the predicted values. The results were similar.

Table 1. Summary Statistics for Repression Variables

Variables	Mean	St. Dev.	Min, Max
Observed repression	0.19	0.67	0, 14
Expected repression	0.15	0.65	−1.52, 10.14
Unexpected repression	0.00	0.39	−5.87, 5.57

allows us to evaluate both our argument as well as existing arguments regarding the impact of political opportunity structures. If our argument is correct, ouster via revolution is more likely when repression significantly exceeds expectations (positive coefficient). Alternatively, if a revolution occurs when observed repression drops far below expected levels (a negative coefficient), this would provide support for existing political opportunity structure arguments. This construction also allows us to evaluate our argument regarding the expectations and actions of military elites, whom we argue intervene against the incumbent when they fear repression is not sufficiently forceful.

Table 1 presents the summary statistics for our measure of *Unexpected Repression* as well as the original count data on repressive actions from SCAD and the value of *Expected Repression*, which represent the fitted values from the model. This is also not surprising given that previous research has presented us with a robust set of covariates with which to predict repression, and we applied a model specification that accounts for omitted variable bias as well as autoregressive error structures. It is somewhat interesting however that our model generally underpredicts repression: the mean as well as the maximum for the predicted values are slightly lower than for the observed values. By contrast, the residuals are fairly different. The mean is approximately zero, but the minimum and maximum values suggest that in at least some cases, governments significantly under- or overresponded to the challenges they faced. For example, a value of "5" implies that repression exceeded expected levels by 5 events, representing a substantial overproduction in repression relative to the observed level of dissent.

We also employ several relevant control variables drawn from previous literature on leader tenure. First, we control for the occurrence of an active insurgency within the state. We strongly expect domestic-armed conflict to positively influence the likelihood that a leader is removed from office by armed domestic challengers, though this outcome is certainly not assured. This variable is particularly important to our analysis since insurgency and protest dynamics are often related. As we note above, where regime repression dramatically out-

paces the levels deemed acceptable by the masses given dissent, they are increasingly likely to join more radical movements. Moreover, as previous literature has shown, once regime violence becomes particularly brutal, civilians (e.g., the masses) are more likely to support the rebels (Goldstone 2001; Mason and Krane 1989). Overall, we expect that active civil conflict increases the likelihood of leader removal via revolution. The effects of civil conflict on coup are more ambiguous. However, such instability may prompt the military to reassert control on its own if it deems the existing incumbent is not capable of ensuring order.

Previous research has also found that involvement in international conflicts and crises impacts regime survival (e.g., Debs and Goemans 2010; Goemans 2000). To address this factor, we include a variable indicating whether the state was involved in an international conflict during the year. Both variables (civil conflict and international conflict) are taken from the Uppsala Conflict Data Program's Dyadic dataset (Harbom, Melander, and Wallensteen 2008), which codes armed political conflicts between the state and an opposition group that produces at least 25 combatant deaths in a given year, and adapted to our leader-month unit of analysis.

We account for regime type because previous studies have indicated that political institutions influence regime responses to threats and the timing and method of their removal from office (e.g., Bueno de Mesquita and Smith 2010). Given that our argument follows closely in the vein of recent work on revolutionary threats and incumbent survival, we rely on their measures of the size of an incumbent's *winning coalition* and *selectorate* to control for relevant regime effects. Specifically, we include measures of the size of the incumbent's *winning coalition* ("W") and the size of the *selectorate* ("S") from which he or she can draw supporters. Prior studies suggest that increases in both of these elements should reduce the risk of leader removal via extraconstitutional means such as coup and revolutions.[13]

Because recent studies suggest incumbent access to nontaxable revenues such as petroleum or foreign aid rents shapes the timing and method of removal (Bueno de Mesquita and Smith 2010; Wright 2008), we include controls representing the annual value of foreign aid flows into the country as a percentage of GDP and value of oil and gas exports similarly scaled to the size of the state's economy. Aid data are taken from Morrison (2009). We compute values for oil and gas revenues using data from

13   Full explanations of these variables are available in Bueno de Mesquita et al. (2005).

Ross (2013). Finally, we include controls for a number of state-level characteristics that previous studies suggest may influence regime survival and leader tenure. We control for GDP per capita and population using data from Penn World Table 9.0. We log-transformed these values and lag them by one year. To address heteroskedasticity and serial correlations, we estimate robust standard errors, which are clustered by countries.

Empirical Approach and Results

In order to test our argument, we adopt a competing risks approach that explicitly accounts for the competing ways that a leader might be removed. Our data contain mutually independent potential outcomes: coup and revolution as well as others as a separate category (e.g., assassination, death, retirement, election loss). Importantly, leader removal in one manner during a tenure spell necessarily precludes termination of the same leader by another manner. Cox proportional hazard (CPH) models are commonly used to estimate the failure rate of incumbents or similar events of interest. However, a central limitation of these models is that they censor competing failure events rather than evaluating their influence on the probability of observing the outcome of interest. This is problematic given that the likelihood of a specific failure event depends on the probability of observing alternative failure events. While CPH models estimate the cause-specific hazard, they produce biased and largely uninterruptable estimates in the presence of mutually exclusive alternative failure events (Fine and Gray 1999; Gooley et al. 1999).

To address this issue, we adopt Fine and Gray's competing risks approach. Rather than modeling the cause-specific hazard (as with Cox models), this method explicitly considers the subdistribution hazard (subhazard) of an event of interest (Fine and Gray 1999). Similar to the CPH model, the fine and gray competing risks model is semiparametric, which means that it does not require us to make assumptions regarding the functional form of the baseline hazard. Moreover, this approach estimates the cumulative incidence function (CIF) for a specific event, allowing a direct evaluation of the likelihood of leader removal in the presence of the competing risk of alternative competing outcomes. Thus, we model the time to a given outcome while explicitly accounting for the possibility that the leader's tenure could also have ended as a result of one of competing removal hazards such as regular removal, death, or serious illness, or that they might persist through the period of study.

Results for the competing risks analyses are presented in Table 2. For ease of interpretation, we report coeffi-

cient estimates rather than subhazard rates. Positive values reflect an increase in the subhazard rate (risk) of the given type of extraconstitutional incumbent removal, whereas negative values reflect a reduction in the odds of leadership replacement. Models 1 and 2 report the influence of our covariates on the risk of incumbent removal via *coup*, whereas Models 3 and 4 report the results for the risk of incumbent removal via *revolution*. We first present results with no controls and then follow with results for the fully specified models.[14]

According to our results in Models 1 and 2, and directly in line with our argument, positive *Unexpected Repression*—situations where repression significantly outpaces the level that would normally have been expected—diminishes the risk of leader removal via coup. The coefficient is statistically significant and negative in both models.[15] This result supports our argument that the manner in which the incumbent responds to political dissent informs the military's decisions regarding whether to continue providing support to the incumbent (by inaction) or to intervene and replace the incumbent. In particular, we argued that the military is increasingly likely to oust an incumbent when it perceives that the incumbent is not applying sufficient coercion for a given level of dissident behavior. Our results also suggest that the military is less likely to stage a coup when repression exceeds what would normally be expected given observed dissent. We infer from this result that the military views overrepression as consistent with its desire for order.

As in the coup models, *Unexpected Repression* is significantly related to the risk of incumbent removal via revolution. However, consistent with our expectations, the direction of the relationship is reversed. While the use of disproportionate repression appears to help incumbent leaders stave off coups, it appears to increase the risk that the leader is toppled in a revolution. In both models, the coefficient for the repression variable is positive and statistically significant. This supports the argument articulated above in which unexpected spikes in state repression relative to recent dissent increase the likelihood that mobilized civilians undertake large-scale behavioral challenges against the regime. We argued that this occurs because spikes in repression stoke moral outrage

14   Diagnostic tests of the model revealed no significant violations of the proportional hazard assumption for the primary independent variable of interest (*Unexpected Repression*).

15   The results are highly similar if we include a control for *Expected Repression.* See Table A2 in the online appendix.

Table 2. Competing Risks Results for Leader Removal

	Model 1: Coup	Model 2: Coup	Model 3: Revolution	Model 4: Revolution
Unexpected repression$_{t-1}$	−0.82**	−1.28**	1.02**	1.51*
	(0.31)	(0.44)	(0.37)	(0.68)
Civil conflict		0.09		1.01
		(0.97)		(0.93)
International conflict		−15.91**		1.65
		(1.20)		(1.12)
Population (log) $_{t-1}$		−0.91		−0.76
		(0.71)		(0.78)
GDP per capita (log) $_{t-1}$		−0.04		0.03
		(1.02)		(1.18)
Oil (%GDP)		−0.02		−0.04
		(0.02)		(0.03)
Aid (%GDP)		−0.01		−0.08
		(0.02)		(0.08)
W		−2.78		−0.57
		(1.76)		(1.01)
S		−1.40		−3.02**
		(0.99)		(1.00)
N	10,902	10,821	10,902	10,821
Clustered	Country	Country	Country	Country
Log pseudolikelihood	−53.43	−40.79	−27.69	−19.41
Chi-square	6.88	477.34	7.46	34.34

Coefficients and standard errors (in parentheses) from Fine and Gray (1999) competing risks model.
*$p < 0.05$, **$p < 0.01$.

among previously nonpolitically active or fence-sitting citizens.[16]

The results from these models provide correlational evidence for our argument regarding the impact of repression on revolution and support our central hypotheses. However, our causal argument leans heavily on the expectation that overrepression generates moral outrage and spurs an increase in popular dissent. To further assess the validity of this claim, we conduct a supplementary analysis that examines the influence of recent under/overrepression on subsequent levels of dissent. The results of this analysis, presented in Table A3 in the online appendix , are consistent with this proposed causal pathway. Specifically, the coefficient for the previous month's value of *Unexpected Repression* is positive and significantly associated with the level of observed dissent in the subsequent month. In other words, when state repression outpaces what was expected by previous patterns of dissent, the public is increasingly motivated to be engaged in organized dissent. This is consistent with the moral

16   It is also possible that this behavior causes citizens to view the risk of supporting radicals and insurgents as equivalent to remaining uninvolved.
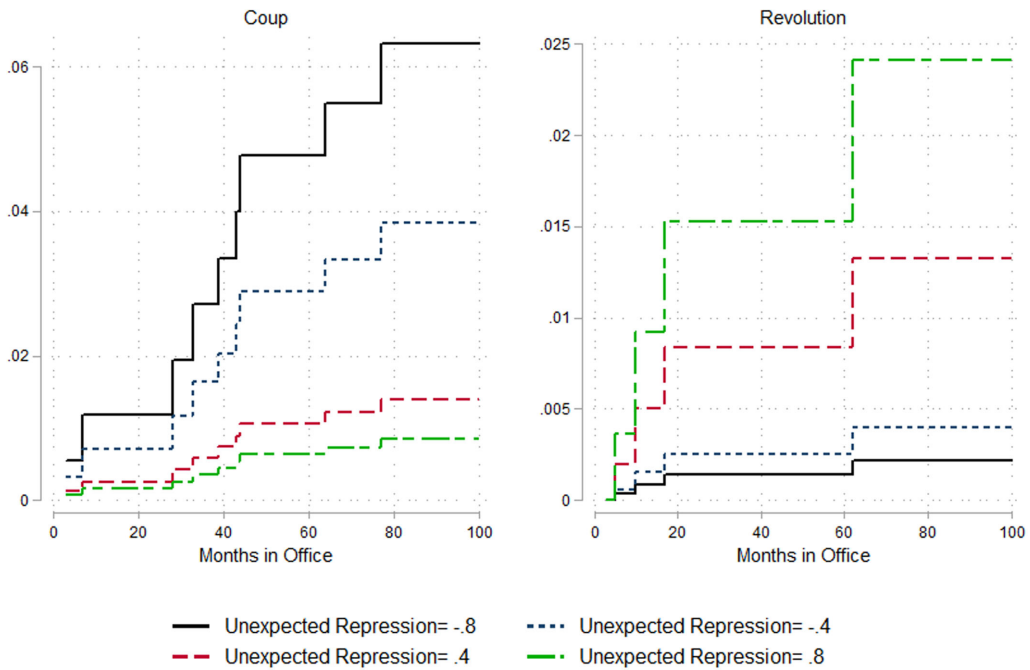
outrage argument and highlights the mechanism through which we argue overrepression leads to incumbent removal via popular uprising.

To demonstrate the substantive influence of these results, we plot the CIFs from the competing risks models in Figure 4. The CIFs can be interpreted as the risk of leader tenure ending in the specified outcome by given time point. In each panel, the x-axis reflects the analysis time in months whereas the y-axis shows the incidence of failure. For ease of comparison, each graph shows the CIFs when the value of *Unexpected Repression* is set at one and two standard deviations above and below the mean, respectively. The left-hand panel of Figure 4 illustrates the influence of *Unexpected Repression* on the incidence of coup. For instance, when the level of *Unexpected* repression employed by the incumbent leader is two standard deviations above the mean (0.8), the risk of coup is near zero at 40 months in office. However, at two standard deviations below the mean (−0.8), the risk of coup increases to nearly 4 percent. In other words, the risk of removal via coup increases substantially in relatively terms when the incumbent engages in significantly less repression than would have been expected given recent levels of dissent. We observe the converse in the right-hand

Figure 4. Cumulative incidence of leader failure by coups and revolutions.

panel, which illustrates the influence of *Unexpected Repression* on incumbent removal by revolution. The risk of revolution by month 40 is roughly 1.5 percent when repression is unexpectedly high (0.8) but falls to virtually zero when repression is much lower than anticipated (−0.8). Hence, the risk of revolution increases when leaders overrepress relative to the recent levels of dissident activity. While the absolute predicted value of the risk of either form of removal appears quite low, it is important to note that both coups and revolutions are relatively rare events. Moreover, the change in the risk is rather dramatic, rising by severalfold for a standard deviation change in the level of *Unexpected Repression*. These results are therefore consistent with our hypotheses.

Somewhat surprisingly, only a few of the variables successfully predict leader removal. Involvement in international conflict is negatively and significantly related to the likelihood of coups, and the effect is quite large. This result is not surprising given that the military is unlikely to move against the leader in the presence of foreign threats. Doing so could undermine the stability of the state and make it easier for foreign forces to acquire significant policy or territorial goals. However, international conflicts increase the likelihood of removal by revolution as frequently maintained within literature concerning this political phenomenon. Finally, revolutions are less likely

when a large selectorate exists. Unlike previous studies, we find no significant relationship between economic resources such as foreign aid or oil and gas revenues and leader survival. This result may emerge from the fine level of temporal aggregation utilized in this study, or because most studies of regime survival have not explicitly accounted for either dissent or repression behaviors, which arguably trumps structure variables in determining leader survival. Future research should further explore these issues, perhaps using more fine-grained data on changes in resource flows, which are arguably impacted by the dissent–repression dynamics we focus on herein.

Conclusions

This research significantly expands existing work on leadership survival/tenure by including consideration of dissident–state interactions. We place such activities at the core of the explanation for leadership removal, and argue that two critical observers pay close attention to protest-repression dynamics (the military and the mass citizenry) and with this information evaluate the relative coercive balance that exists as they determine whether or not they will exert effort to remove political authori-

ties. This sets the current study apart from prior research, which has tended to focus on structural explanations and cooptation. Our argument also differs from previous studies (e.g., Bueno de Mesquita and Smith 2010) because we do not consider behavioral challenges and state repression independent from one another. Instead, we use information regarding what levels of repression would normally be expected given prior dissent, arguing that the information that is most useful to observers is not simply what happens but what behaviors deviate from expectations. Consequently, we anticipate that pivotal actors respond when anticipated repression exceeds or falls short of expectations.

With this in mind, our analysis has both theoretical and empirical implications. First, we have challenged scholars to explicitly consider how patterns of dissent and coercive responses interact in order to determine leader survival and the method of removal. For example, we argue and demonstrate that overresponding to dissent is useful for preventing coups but can backfire and produce moral outrage that leads to revolution. Consequently, leaders exist between a proverbial rock and a hard place: too much repression against dissent leads to ouster by the people; insufficient repression leads to removal by the military. Exactly how and when leaders are able to properly calibrate repressive action (or fail to do so) is a topic that future research should address. Second, we have made a first cut at empirically modeling the complex and interactive dynamics that we argue ultimately shape leader survival. Our results provide compelling support not only for our argument but also suggest that future studies may wish to explicitly empirically account for the interactive nature of repression and dissent when assessing their influence on leader survival. Our approach to accounting for these dynamics is, however, admittedly crude, and scholars should endeavor to capture them in a more sophisticated manner in future research.

Due to data limitation, our large-N analysis is limited to the years between 1990 and 2004. We are therefore unable to adequately account for the role of recent advances in communications technology and the growing popularity of online social media platforms in the empirical relationship we observed. These factors could potentially influence these relationships; yet, the direction of the effect and the scale of their influence remain unclear. On the one hand, social media platforms allow protesters to spread the news about the state's brutal use of force faster and even include photos and videos. Therefore, we can expect that the masses respond to the overrepression faster and stronger. In such an environment, our argument about the responses of the masses would be more robust. On the other hand, state-backed accounts have been widely active on social media account to intimidate dissidents and manipulate information flow on the Internet. One implication of this new policy is that the state might be able to exploit the benefits of social media platforms to disseminate their version of "truth" about the dynamics of repression and protests. If executed successfully, this allows them to mitigate the adverse effects of overrepression. Therefore, under successful social media campaigns by state-backed accounts, we expect that the empirical analysis shows weaker support for our findings of leader removal in response to overrepression. Considering the recent developments in studying the nexus of social media and conflict, one venue for extending our findings is exploring the above mechanisms in future research.

Finally, considering previous research, we assumed that disproportional use of coercive force leads to a backlash, reduces government legitimacy, and increases dissatisfaction among the masses. Therefore, we expect more people to join the movement and increase the power of movement and thus increase the chance of overthrowing the incumbent. On the other hand, the findings in sociology (Tarrow 2011; Tilly 2008) find that mass repression can lead to the decline of protests and their demobilization. Our empirical findings in this study support the backlash mechanism that we discussed in the theoretical section. However, as Sullivan and Davenport (2017) discuss, the effect of repression on future participation is a complex phenomenon. Their analysis of organizational behavior and individual participation in a black-nationalist insurgency group reveals that repression increases the likelihood of backlash at the organizational level. They also show that those individuals exposed directly to repression are more likely to participate in postrepression activities. This can be linked to whether governments use discriminate or selective repression as well as the quality of kinship in society. For instance, one of the reasons that Tilly and Tarrow (2015) do not find support for backlash mechanism in their analysis of Eastern and Western European countries could be that governments in these cases relied on selective repression more than the governments in Africa and Latin America, which are the cases in our analysis. Alternatively, the difference in the results can be due to the variation in kinship quality across different regions. Indeed, the width and strength of the family and friendship network can affect the intensity of backlash mechanisms. Therefore, we suggest scholars explore our findings in other geographic regions focusing on how different factors can affect the backlash mechanism and thus the robustness of our findings.

Supplementary Information

Supplementary information is available at the *Journal of Global Security Studies* data archive.

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