

UNIVERSITY OF CALIFORNIA, SAN DIEGO

**Protecting the State: Strategic Choice at the Nexus of Internal and External Security**

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requirements for the degree  
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in

Political Science

by

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Chair

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2015

DEDICATION

To Liz.

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I am required to note here that the first chapter of this dissertation (co-authored with Branislav Slantchev) is forthcoming in the *American Political Science Review*. The second and third chapters are currently being prepared for publication. I am the sole author of these chapters.

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ABSTRACT OF THE DISSERTATION

**Protecting the State: Strategic Choice at the Nexus of Internal and External Security**

by

Russell Blake McMahon

Doctor of Philosophy in Political Science

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Professor Branislav L. Slantchev, Chair

In order to survive in power, the rulers of political regimes must rely on armed forces for defense. In developing forces that are strong enough to protect the state, however, rulers give rise to a new type of challenger for political power that may itself threaten the government. This dilemma has long troubled political leaders and has frequently resulted in coups d'état, to the point where these events have become the most common form of political instability in the world. Chapter 1 presents a game theoretic model that distills this fundamental dilemma to its barest essentials, and shows that the logic underlying the conventional wisdom on civil-military relations is misguided. The risk of a coup does not depend on the severity of the external threat facing the regime

— as previous research holds — but rather on the factors that lead political and military agents to hold divergent beliefs about the nature of the threat. Chapter 2 extends this model and focuses on the “Circling of the Wagons” effect, in which elevated threats induce military loyalty. Even though larger external threats increase the military’s willingness to remain loyal, rulers are only willing to behave aggressively to exacerbate the threat environment when they are uncertain about the severity of these threats. Predictions derived from the theory find support in survival analysis of disputatious dyads from 1950 to 2001. Chapter 3 examines the claim that military performance is hurt by rulers who select personnel on the basis of their ties to the regime for fear of a coup. The argument centers around the need to consider the competing imperatives facing rulers in states at risk of a military coup. Because military agents who are more willing to remain loyal need not be constrained in their ability to act against the regime, military organizations comprised of politically-reliable personnel can be trusted with more coercive power. This proposition is evaluated through a qualitative analysis of the Iraqi armed forces during the Iran-Iraq War.

# **Chapter 1**

## **The Guardianship Dilemma: Regime Security *through* and *from* the Armed Forces**

## 1.1 Abstract

Armed forces strong enough to protect the state also pose a threat to the state. We develop a model that distills this “Guardianship Dilemma” to its barest essentials, and show that the seemingly ironclad logic underlying our existing understanding of civil-military relations is flawed. Militaries contemplating disloyalty must worry about both successfully overthrowing the government *and* defeating the state’s opponent. This twin challenge induces loyalty as the state faces increasingly strong external threats, and can be managed effectively by rulers using a number of policy levers. Disloyalty can still occur when political and military elites hold divergent beliefs about the threat environment facing the state, since militaries will sometimes have less incentive to remain loyal than the ruler suspects. Consequently, it is not the need to respond to external threats that raises the risk of disloyalty — as conventional wisdom suggests — but rather uncertainty about the severity of these threats.

## 1.2 Introduction

Mercenary captains are either excellent men of arms or not: if they are, you cannot trust them because they always aspire to their own greatness, either by oppressing you, who are their patron, or by oppressing others contrary to your intention; but if the captain is not virtuous, he ruins you in the ordinary way.

—Machiavelli, *The Prince*, XII

Rulers govern in an environment characterized by foreign and domestic threats, and must provide for their security if they are to survive in power. The state must therefore rely on a coercive force — one that specializes in dealing with foreign adversaries and another that focuses on internal ones or, as for most of history, one that could be used for either — an agent powerful enough to cope with these challenges, a “guardian” of the government. This existential imperative gives rise to one of the oldest dilemmas of governing, for a guardian strong enough to protect the government is also strong enough to impose its own preferences on the polity. Paradoxically, the attempt to cope with some types of threats can generate a new, and often very serious, threat. This *Guardianship Dilemma* can be resolved in two ways: the government either creates the forces it needs

and takes its chances that they may turn on it or avoids that danger altogether by leaving itself exposed to the other threats. The more grave these other threats are, the more likely is the government to accept the risks of guardianship and opt for the creation of a military force (Huntington 1957; Feaver 1999; Svobik 2012).

The unfortunate tradeoff for regime security implied by the Guardianship Dilemma is seen as a fundamental feature of civil-military relations, to the point where it has become an unstated assumption. As a result, most research on the subject explores the ways in which governments can maintain the necessary forces without running the risks of becoming their servant or getting eliminated altogether. The remedies suggested range from institutional checks and balances with countervailing forces to placing limits on budgets or the competence of military leaders, and from imposing organizational straight-jackets through manipulating the chain of command, recruitment, or inter-agency communications to the fostering of a separate apolitical professional culture in the military (Finer 1988; Quinlivan 1999; Pilster and Böhmelt 2011; Egorov and Sonin 2011).

But is the ancient logic underlying the Guardianship Dilemma compelling? We present a model of the interaction between the government and its military force that is starkly reduced to the barest essentials identified by the dilemma and show that, as commonly posed, the dilemma is flawed because it fails to account for the effect of the threat environment on the incentives of the guardians to interfere with politics. Because armed forces that intervene in politics must both successfully execute a coup *and* fend off other challengers, grave threats to the existing government can *induce* military loyalty. While the Guardianship Dilemma predicts that rulers are at greatest risk of a coup when some threat forces them to strengthen their militaries, we show that when these leaders are aware of the extent of this threat, it is, in fact, precisely the serious threat that permits them to pour resources into the military without fearing that it will become disloyal. This finding is consistent with the pathbreaking work of Desch (1999), who argues that large external threats help political leaders maintain control of the armed forces. In contrast to Desch, however, our model also reveals that when rulers know the threat's severity, it is possible to devise a combination of benefits that increase the military's value of remaining loyal and constraints that hinder its ability to fight, such that military loyalty is

assured under all conditions. The dilemma is always resolved in favor of regime stability regardless of the size of the threat, although sometimes this happens at the expense of the military's effectiveness.

This indicates that to trigger the full power of the dilemma, another factor needs to be considered: something that prevents rulers from succeeding in the delicate balancing act between having an overweening military that might overthrow them and having an impotent one that might be useless against the threat. We argue that this necessary factor is asymmetric information about the threat environment, a type of uncertainty inherent in civil-military relations. When the military is better-informed about the extent of the threat facing the polity than the rulers — a discrepancy that could arise for a variety of reasons, as we explain below — the delicate balancing act can become well-nigh impossible.

We show that under general conditions rulers must end up with one of two unpleasant realities. If they decide that the threat is likely to be small, the military is endowed with just enough resources to deal with small threats. Whereas this ensures the military's loyalty in all circumstances, the military will be woefully unprepared if the politicians were too optimistic and the actual threat turns out to be large. If, on the other hand, rulers decide that the threat is likely to be large, they are hit with a double whammy: in their fear of a coup, rulers still handicap the military and reduce its effectiveness in dealing with the large threat, but because they are also fearful of the threat itself, rulers still endow the military with enough resources to induce its disloyalty if the threat happens to be small. In this case, the military is both ineffective against the serious threat and a danger to the regime if the rulers' estimates prove to be too pessimistic.

Thus, *the Guardianship Dilemma arises because of a mismatch between the military's strength and the threat it is supposed to deal with — if the military is under-funded, it will be loyal but deficient, and if it is over-funded, it will be effective but potentially disloyal — and the mismatch itself is caused by the divergent beliefs about the seriousness of the threat among the political and military leaders.* This divergence can be a product of the military's specialization in dealing with threats, which entails access to superior intelligence and information processing when it comes to estimating potential dangers to the polity. The closer the rulers get to the military's own estimates about the threat, the

narrower the belief gap, and the weaker the dilemma.

Our model, reduced though it is, allows us to qualify some of the claims that are often made in studies of civil-military relations. For example, it is often argued that in making military appointments, non-democratic leaders prefer to select for loyalty rather than competence, and that as a result their armed forces are frequently quite ineffective on the battlefield. We explain why this line of reasoning is problematic. Competence and resources are both means to an end — higher probability of success in a military confrontation, be it with the threat or in a coup. But while competence is “free” from the perspective of the rulers, resources most certainly are not. Thus, it is always preferable to improve the efficiency of the military by hiring competent officers and reducing its resources than to hire incompetents who may be loyal but who will also squander valuable resources. We provide empirical evidence for our argument by examining the fate of high-ranking officers in Saddam Hussein’s military in the aftermath of the Iran-Iraq War.

### 1.3 The Guardianship Dilemma

The Guardianship Dilemma has plagued regimes for centuries, and has proven a tough challenge even during the last century, when militaries deposed more rulers than all other forms of political instability combined. Between 1945 and 2002, more than two-thirds of the extraconstitutional leadership changes in dictatorships were caused by coups d’etat (Svolik 2009). Even among *all* leaderships changes between 1919 and 2004, the 260 coups represent nearly 9% (Goemans, Gleditsch and Chiozza 2009).

The Guardianship Dilemma depends on the threat environment faced by states’ political regimes: stronger external threats increase the need for a powerful military, but the more powerful the military, the more dangerous it can be to the regime’s political autonomy and even its survival (Huntington 1957; Finer 1988; Acemoglu, Ticchi and Vindigni 2010; Feaver 1999; Svolik 2012).

Some exceptional studies do hold that the strong foreign threats can enhance civilian control of the armed forces. Desch (1999) argues that civil-military relations depend on the nature of the threat environment faced by the state. Civilians have great-

est control over the military when the state faces grave international threats, and least control when the state must deal with domestic challenges. Staniland (2008) adds that this relationship depends on the extent to which the regime is deemed legitimate and is adequately institutionalized. It is not, however, clear why one should expect militaries to have the least influence over policy when their services are in highest demand, or why domestic and international threats should have such dramatically different effects on civil-military relations.

Rulers who worry about their own militaries do have another option at their disposal: they can purposefully limit the strength of their armed forces, leaving them too weak to mount a coup but also making them grossly ineffective against the external threat (Svolik 2013; Feaver 1996, 154). At its most extreme, this strategy could deprive the state of a military altogether, as it has done in Costa Rica and some remote island states such as Kiribati and Samoa. More realistically though, most rulers must content themselves with finding ways of maintaining reasonably useful guardians without becoming their victims. This is what nearly all studies of civil-military relations investigate as well. Strategies discussed vary from institutional constraints involving limitations on the autonomy of military organizations and the creation of parallel armed forces, to efforts to control the disposition of military agents by providing patronage or by fostering a professional culture among military personnel (Finer 1988; Pilster and Böhmelt 2011; Quinlivan 1999; Powell 2012).

A key strategy for ensuring the loyalty of militaries is to control the membership of the officer corps. The calculus for rulers in this context is straightforward: where the loyalty of potential guardians might be questionable, appoint those for whom the status-quo is most profitable and who will therefore have the weakest incentives to overthrow the ruler. These privileged groups are generally among the regime's "communities of trust" (Enloe 1975; Quinlivan 1999). Saddam Hussein, for instance, pulled heavily from his minority Sunni-Arab ethnoreligious group when selecting personnel for the Iraqi security apparatus (al-Marashi 2002). Scholars have often argued that making these personnel decisions on the basis of implied loyalty rather than competence can seriously erode the military effectiveness of the armed forces (Huntington 1957; Brooks 1998; Gaub 2013, 231-2). Some have even gone as far as suggesting that rulers might actually

recruit less competent officers on purpose as a means of ensuring their loyalty (Egorov and Sonin 2011). We shall have an occasion to address these particular claims.

While the logic of the Guardianship Dilemma serves as the foundation of our existing understanding of civil-military relations, one must wonder if this logic is convincing. Most of the work that explores this logic explicitly suggests that the problem turns on the ability of the rulership to commit to resource transfers or policy concessions to the military. A failure to manage the dilemma then reflects features of the social, political, or economic environment that prevent rulers from making credible promises to their guardians. Besley and Robinson (2010) argue that if social conflict over public spending is serious enough, rulers cannot commit to paying a wage that is sufficiently high to ensure military loyalty when the armed forces are optimally sized. The ruler's best response is to limit the size of the armed forces and avoid a coup altogether at the cost of having a weaker military. Leaving aside the question of why authoritarian rulers would be unable to secure sufficient resources for the military, the theory cannot explain why coups occur; after all, the equilibrium probability of a coup is zero.

Acemoglu, Ticchi and Vindigni (2010) do tackle this question head on. In their view, the transition from autocracy to democracy can end in a coup because the incoming democratic regime no longer needs a well-paid military for internal repression. Since the democratic government cannot credibly commit not to reform the military after it comes to power, the military has incentives to prevent the transition. It is, however, unclear why the government would not be able to make such a commitment: since the military cannot be disbanded overnight, the continuing threat of a coup should give the government enough reasons to maintain the high wages.

Other studies suggest that the problem arises from political or military elites holding private information about relevant features of the strategic environment. Informational asymmetries are common in civil-military politics, reflecting the functional differentiation in tasks between political and military actors, and are troublesome to the extent that militaries and political regimes have dissimilar preferences over outcomes (Brooks 2008). Svobik (2013, 2012) argues that militaries leverage their coercive power to demand favorable policies from the regime. Coups can occur when the military believes that the ruler has reneged on their agreement, which can happen because the military

lacks complete information about the government’s activities. However, even though some policies might be opaque to the military, most large issues — such as the military’s budget or regulations affecting the armed forces — tend to be highly visible and the policies themselves formulated with the active participation of the military.

In this respect, Egorov and Sonin’s assumption that the ruler’s agent (“vizier”) has private information about the threat environment is much more plausible. A competent agent is more likely to observe whether the enemy is weak, and so its incentive to betray the ruler by doing nothing to counter that threat is higher. To counter this, the ruler hires a less competent agent and since the expected loyalty is higher, the required pay is lower. The only reason the ruler does not hire total dolts is because their inability to distinguish whether the enemy is weak would cause them to squander valuable resources. One might wonder about a notion of competence that is unrelated to the agent’s ability to defeat the enemy. After all, if the enemy is more likely to prevail in the presence of an incompetent vizier, the ruler’s money-saving imperative that drives down his desire to hire a competent agent will be, well, much less imperative.

In order to assess the logic of the Guardianship Dilemma, we distill the dilemma to the most essential characteristics identified by previous research. (1) The leaders of political regimes must defend against external threats. Unfortunately for them, the guardians appointed to defend the state can also be a threat to the regime. (2) Rulers have the ‘power of the purse’, and manage the flow of resources to the armed forces in response to both external threats and the risk of a coup. (3) Rulers control who is charged with running the state’s armed forces, and may select these agents on the basis of both competence and their affiliation with a social, political, or economic group. (4) The more competent the military agents, the more likely they are to prevail against the external threat *and* against the ruler should they choose to execute a coup.

## 1.4 The Model

Consider a model with two players,  $R$  (ruler of the political regime) and  $G$  (general).<sup>1</sup> The status quo distribution of benefits in this society privileges certain groups over

---

<sup>1</sup>For simplicity, we shall refer to the ruler as “she” and the general as “he”.

others, and may be based on ethnicity, religion, geography, or other cleavages within the state. In South Africa during Apartheid, for example, a racial divide between whites and non-whites determined access to social, political, and economic opportunities (Thompson 2001). For the sake of parsimony, we abstract away from the precise nature of these cleavages and assume simply that the benefit a member of some group  $i$  derives from the status quo is  $b_i \in [\underline{b}, \bar{b}]$  such that  $0 < \underline{b} < \bar{b} < 1$ . Some groups have higher status quo benefits than others, so their incentive to overthrow the regime will be weaker. Ugandan ruler Milton Obote was a Northerner, and knew that for fellow Northerners, a coup to address ethnic grievances would be unnecessary. The loyalty of the alienated Southerners, in contrast, was far more questionable (Horowitz 1985, 488, 501). These status quo benefits are normalized such that 0 represents obtaining nothing (e.g., because one is dead or in prison) and 1 represents the maximal benefit of personal rule. We shall further normalize  $R$ 's competence to 1, and her security resources to 1.

The timing of the game is as follows. The ruler chooses the group from which to pick the general,  $b_i$ , his level of competence,  $\theta \in [0, \bar{\theta}]$ , and the amount of military resources to make available to him,  $m \geq 0$ . The marginal cost of giving the general a unit of military resource is 1. All these parameters are observable by the ruler when making her choices, and known to the general selected.

Powerful, well-endowed military forces are more likely to succeed in battle against an external threat. However, if the military attempts a coup, strong forces are also more likely to overcome the defenses that protect the regime, such as paramilitary units and pro-government militias, and can more easily capture strategic targets and members of the government (Powell 2012, 1024). Furthermore, the ability of competent military leaders to marshal forces effectively is vital when the government faces external threats, but can be particularly dangerous if cunning generals turn against the regime. Returning again to the case of Uganda, Milton Obote began to fear General Idi Amin's wiles. When the threat posed by Amin to the regime became clear enough, Obote demoted the general in an attempt to limit his influence (Horowitz 1985).

We represent the probability that an actor of competence  $\theta$  in control of military resources  $m_1$  prevails against an opponent — here, either the external threat or the ruler's

own defenses — with resources  $m_2$  with the familiar ratio contest-success function:

$$p(m_1, m_2; \theta) = \frac{\theta m_1}{\theta m_1 + m_2}.$$

Following the ruler’s choice of a general and military resources, the selected general decides whether to execute a coup or remain loyal. If he executes a coup, he takes over with probability  $p(m, 1; \theta)$ , in which case his eventual benefit goes to 1, and he is defeated with complementary probability, in which case his benefit goes to 0. The coup is costly for the general:  $c > 0$ .

After the coup decision, the external threat of size  $T > 0$  is realized. It is important to note that by “external” threat, we mean any threat from outside of the government — whether foreign or domestic — that threatens the survival of the rulership.<sup>2</sup> If the general is still around when this threat is faced, (because he remained loyal or after a successful coup), he defeats this threat with probability  $p(m, T; \theta)$ , in which case he obtains his benefit ( $b_i$  if he was loyal to the ruler and 1 if he took over in a coup), and he is defeated with complementary probability, in which case his benefit is 0. If the general was removed after an attempted coup, the ruler herself faces the external threat, and defeats it with probability  $p(m, T; 1)$ , in which case she retains power with a benefit of 1, and is herself defeated with complementary probability, in which case her benefit is 0.

The highest expected payoff from a coup in the absence of an external threat is when there is no risk:  $1 - c$ . If  $G$  would not want to execute a coup even when a favorable outcome is certain, then he will always remain loyal irrespective of his competence and resources. To make the model interesting, we shall assume that  $G$ ’s loyalty is not so easily ensured:

**Assumption 1.** *Every general is a would-be ruler:  $\bar{b} + c < 1$ .*

We also make several additional assumptions because we want to focus on the basic tension between security against external threats and security against the force that is supposed to defend against these threats. Some are made for technical convenience and have no bearing on the results, while others can be defended on empirical grounds.

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<sup>2</sup>We adopt a broad conception of the external threat in order to understand the fundamental dynamic illuminated by the model. Once we have done this, we can ask how international and domestic threats might differ in relevant ways.

First, the benefit of membership in some group,  $b_i$ , is fixed and not borne by the ruler. We can think of this parameter as the consequence of social, economic, and legal institutions underpinning the order in the polity, and as such not really available to the ruler for private consumption. It is the “cost of doing business” and it is not the case that if the ruler picks a general from a less advantaged stratum then she would be saving on that cost.

Second, the ruler pays the cost of resources she transfers to the general but there is no budget constraint. It is highly unlikely that any particular general would be so expensive to get as to trigger a budget constraint, or that rulers are particularly constrained by budgets when it comes to their desire to endow the military with resources. If we were to assume that there was a hard budget constraint, then we might find that the ruler limits the size of the military because of poverty, and not because of any security issues, which is the goal of our analysis. As a result, even if one wanted to introduce a budget constraint, one would have to argue that it would bind, and even when it does bind all it will do is introduce a cap on military allocations, suppressing the mechanism we have in mind. We do assume that these transfers are costly, so there is a disincentive to put too much into the military, but as we shall see this is not going to be the concern in general.

Third, the ruler pays no cost if a coup occurs. Alternatively, the ruler can be assumed to pay a cost if a coup occurs without altering anything in the analysis except carrying another parameter across all calculations. The fact that a coup can depose her with positive probability is already an inducement for her to want to avoid it. Adding extra costs simply strengthens an incentive that is already present (and, as we shall see, quite strong). We do want to consider costs for the general, however, because he has to make a decision about executing a coup, and because these costs might represent institutional features of the existing regime that need to be taken into account.

Fourth, neither the ruler nor the general pay any costs when they fight the external threat. This assumption is consistent with the structure of the model, which allows for no choice to avoid that threat: the ruler simply must deal with it. Since the size of the threat already allows us to capture just how bad it could be for her, there is no need to introduce additional costs.<sup>3</sup>

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<sup>3</sup>Moreover, if we were to introduce costs of fighting, we have to be careful with the general’s payoff

Fifth, both the ruler and the general are constrained in that they can only use the available military forces  $m$  to deal with the external threat (in effect, the ruler's internal security designed to deal with coup attempts is not useful against external threats). This might appear too restrictive because it seems to disregard strategies the ruler could use to decrease the incentives for a coup. Such coup-proofing tactics could involve increasing the resources devoted to internal security, making it difficult for military units to coordinate and communicate without passing through centralized channels, dispersing units or staffing them with non-locals, and others. These measures would decrease the probability of coup success at any level of military resources and increase the costs of launching one.

While our cost parameter can capture some aspects of these tactics, it cannot capture others. We could model the effect of such tactics on the probability of coup success with the resources available to the ruler's internal security forces or her competence, but we have normalized them both. The results will not change if we were to use variables instead as long as we take them as given. In other words, if we think of the Guardianship Dilemma in the context of the ruler having done everything possible to minimize the internal dangers, our analysis follows without any changes. The only downside is that one could not take the model to data where these coup-proofing measures vary without some straightforward modifications that will not alter any of the substance of our argument.

This assumption might also be criticized on grounds that internal security forces may improve the the state's ability to defeat an external threat by augmenting the might of the regular military. We could account for this possibility by incorporating the ruler's own internal security resources in the probability of success against  $T$ . Because this merely involves adding a constant, however, our analysis will not change. We are also doubtful about whether this addition would be appropriate. For instance, one might follow Svoboda (2012), who makes an empirical claim that the army is only generally useful for dealing with mass revolts or foreign forces. In most states — especially dictatorships — the day-to-day security is managed by another apparatus, whose personnel are generally not useful for large-scale operations. One could also point out that some coup-

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if he is eliminated in a coup. Since he would face no enemy when the coup attempt fails, if the costs of fighting the enemy are sufficiently high, he would execute a coup simply because of the chance of failure that would allow him to evade paying these costs.

proofing measures (e.g., making it difficult for the commanders to coordinate) might actually have a detrimental effect on the state's ability to defeat the external threat.

Sixth, the resources given to the military are equally useful for a coup and for fighting the external threat. One might question this on two grounds: it could be that resources are not fungible, and even if they are, they might be useful only in one of the two situations. For example, salaries, health and pension benefits, and payments to civilian contractors are certainly included in military budgets, but they are not likely to increase the fighting ability directly. Spending on some types of technologies could improve the fighting ability when it comes to the external threat without being very useful in a coup. Submarines and fighter jets might belong to that category.

Although both points are doubtless correct, they have only tangential bearing on the Guardianship Dilemma. Since the first type of spending will affect the incentive to launch a coup through the benefits derived from the existing regime, its effects can be approximated by the benefit parameter  $b_i$ . The only difference, of course, is that since these payments are part of the budget, they would be costly to the ruler. Under the no budget constraint assumption, this would merely result in another parameter being subtracted from the ruler's payoff, necessitating further assumptions about the marginal costs of these funds, and perhaps restrictions that ensure an interior solution. That solution, however, is not going to produce any difference in the dynamics we study.

Finally, one might wonder about the assumption that more resources given to the military must necessarily increase its ability to prevail in a coup, as built into the functional form of  $p(\cdot)$ . From the perspective of any coup-plotters, there are some fundamental problems that they would need to overcome before having any chance of success: collective action and coordination problems that arise from incentives to renege on the plot and the necessity of conducting preparations in secrecy, as well as the absolutely critical question about securing the cooperation or at least neutralizing the units in the armed forces that were not privy to the coup (Luttwak 1979). Very plausibly, these problems, and especially the latter, might be quite aggravated by the size and complexity of the armed forces. In other words, it could be that beyond some level, the larger and more organizationally complex the military, the harder it is for any general to organize a coup. (Such a dynamic could account for the political quiescence of the armies of the

Soviet Union, North Korea, and China.) While this is certainly an intriguing possibility, we believe that such a “pacifying” dynamic would have to be quite exceptional as most countries do not have the population base to maintain large armies. Note also that an attempt to construct and maintain an army of sufficient size would probably run afoul of resource constraints.

In the end, ours is emphatically not a general model of coups. We do not study how coups are organized and how they succeed (Sutter 2000). Our interest is in the fundamental Guardianship Dilemma, which has to be analyzed prior to dealing with any strategies for ameliorating its effects. To this end, we have stripped the model of any factors that are not essential to the dilemma, and whose presence might obscure rather than clarify its logic.

## 1.5 Known External Threat

We shall begin our analysis with the case where  $T > 0$  is common knowledge. If  $R$  does not hire a general, then there is no threat of a coup, so  $R$ 's payoff is  $p(m, T; 1) - m$ ; i.e., she simply has to meet the threat with her own competence and the resources she has allocated. Maximizing this payoff yields  $\tilde{m} = \max(0, \sqrt{T} - T)$ . In any equilibrium in which  $G$  gets hired,  $R$ 's expected payoff must exceed the baseline of  $p(\tilde{m}, T; 1) - \tilde{m}$ . This immediately implies that no coup can occur in equilibrium. In such an equilibrium,  $R$ 's expected payoff would be

$$p(1, \theta m; 1)p(m, T; 1) - m < p(m, T; 1) - m \leq p(\tilde{m}, T; 1) - \tilde{m},$$

which means that she would strictly prefer not to hire a general in the first place. The only equilibrium possibilities, then, are that either no coup occurs at all or one occurs with positive probability less than one. The following result (all proofs are in Appendix A) shows, among other things, that a coup can never occur in equilibrium.

**Lemma 1.** *In any equilibrium,  $G$  remains loyal if, and only if,  $T \geq T_i^*(m, \theta)$ , where*

$$T_i^*(m, \theta) = \left( \frac{\theta m}{c} \right) \left[ \frac{\theta m}{\theta m + 1} - (b_i + c) \right], \quad (1.1)$$

with  $T_i^*$  increasing in both parameters whenever it is non-negative.

This immediately tells us that if  $G$  would remain loyal in the absence of an external threat, then he will remain loyal in the presence of such a threat irrespective of its size. If, on the other hand,  $G$  would be disloyal in the absence of an external threat, then he will execute a coup in the presence of an external threat only if this threat is not too large  $T < T_i^*(m, \theta)$ . In this sense, sufficiently grave external threats can discipline even a potentially disloyal general and deter him from executing a coup, a sort of “circling the wagons” effect. This effect is due to the fact that the general only wants to take the risks and pay the costs of a coup when he is sufficiently confident about surviving the conflict with  $T$ , since survival is necessary to reap the benefits of ruling the state. In turn, as  $T$  increases, the loyalty-inducing effect of this external threat allows the ruler to pour additional resources into the military without triggering a coup.

Moreover, since  $R$  would not hire a general if a coup is certain, and Lemma 1 shows that  $G$  must remain loyal when indifferent, it follows that in equilibrium the probability of a coup must be zero. This leads to the following result.

**Lemma 2.** *Fix any social group  $b_i$ . If  $R$ 's choices ensure  $G$ 's loyalty, then  $R$  always picks the most competent general from this group,  $\bar{\theta}$ , and endows him with:*

$$m_i^*(T) = \begin{cases} \max\left(0, \sqrt{T/\bar{\theta}} - T/\bar{\theta}\right) & \text{if } S(T) \leq S_i^*(T) \\ S_i^*(T)/\bar{\theta} & \text{otherwise,} \end{cases}$$

where

$$S_i^*(T) = \frac{b_i + c + cT + \sqrt{(b_i + c - cT)^2 + 4cT}}{2(1 - (b_i + c))} \quad (1.2)$$

is the maximum level of disloyalty that would not provoke a coup, and

$$S(T) = \sqrt{\bar{\theta}T} - T \quad (1.3)$$

is the level of disloyalty for the most competent  $G$  with resources optimally provided to deal with the external threat.

This tells us how  $R$  would allocate military resources if doing so would preserve

the loyalty of the general. We now show when  $R$  would prefer to hire a general given that she would have to ensure his loyalty.

**Lemma 3.** *In equilibrium,*

- (i)  $R$  never hires  $G$  if the maximum competence is worse than her own:  $\bar{\theta} < 1$ ;
- (ii)  $R$  always hires  $G$  with  $\bar{\theta} > 1$  when the external threat is sufficiently large:  $T \geq 1$ ;
- (iii)  $R$  may or may not hire  $G$  with  $\bar{\theta} > 1$  when  $T < 1$ , depending on the costs of a coup (c) and the benefits from the status quo ( $b_i$ ). In particular, if both are sufficiently small, then  $R$  will not hire anyone.

We have now established that the ruler will never hire anyone less competent than herself and that whenever she chooses to hire a general, she picks the most competent one she can find. Moreover, if the external threat is sufficiently serious, the ruler always hires a general although she might have to ensure his loyalty by providing him with fewer resources than what is optimal for dealing with that threat.

Cases (i) and (iii) of Lemma 3 are substantively unlikely. The former essentially means that no potential general is more competent than the ruler, a highly unlikely scenario (well, except perhaps if the ruler is Napoleon, but even then there might be a potential Wellington!). The latter requires that the external threat be negligible, in which case it is very easy to trigger the disloyalty of any general, which is why the decision to hire depends only on the benefits of the status quo and the costs of a coup. Since the ruler's incentive to hire a general turns on a looming external threat and the need to get someone competent to deal with it, this case is irrelevant for our purposes. Consequently, we shall exclude these substantively unappealing scenarios from further consideration:

**Assumption 2** (Preference for Hiring). *There always exist generals more competent than the ruler ( $\bar{\theta} > 1$ ), and the external threat is never negligible ( $T \geq 1$ ).*

Under Assumption 2, Lemma 3 implies that  $R$  will always hire a general in equilibrium. The following result shows that, generally speaking, the ruler will give preference to the privileged groups when it comes to selecting a general.

**Lemma 4.** *Let  $b^*$  be the unique solution to  $S_i^*(T) = S(T)$ . If  $\bar{b} \leq b^*$ , then  $R$  strictly prefers to pick  $G$  from  $\bar{b}$ ; otherwise  $R$  is indifferent among any  $b_i \in (b^*, \bar{b}]$ , and strictly prefers any of them to any  $b_i < b^*$ .*

Thus,  $R$  will either choose from the most privileged group or from among the few most privileged (when each of them provides enough benefits to ensure the loyalty of generals drawn from them). Moreover,  $R$  will always pick the most competent  $G$  she can although she might have to handicap the general resource-wise in order to ensure his loyalty. We can state the main result somewhat loosely as follows.

**Proposition 1.** *If the extent of the external threat is common knowledge and assumptions 1 and 2 are satisfied, then in any subgame-perfect equilibrium, the ruler picks the most competent general. If there are groups that derive sufficient benefits from the status quo to ensure the loyalty of a general selected from them at the allocation that is militarily optimal to deal with the external threat, then the ruler chooses from any among them, and endows the general with the optimal resources (the equilibria are payoff-equivalent). If no such group exists, the ruler selects the general from the most privileged group, and endows him with just enough resources to ensure his loyalty. No coups occur in equilibrium, but the external threat is not properly met when the ruler is forced to handicap the general.*

We have thus established that when the size of the threat is known, the Guardianship Dilemma is, in principle, solvable: militaries remain loyal in equilibrium, and the ruler's strategy always privileges domestic political survival over dealing with the external threat. The government hires competent generals, but controls resource flows to the armed forces in order to ensure military loyalty. The more privileged the groups from which the generals are selected, the less biting the trade-off between stability (risk of a coup) and security (risk from the external threat). Since the costs of the coup act as a substitute for benefits, the more effective anti-coup measures, the less biting the trade-off becomes and the less pressing the need to privilege the military. In this way, "coup-proofing" works much as previous studies suggest.

The very solvability of the dilemma and especially the fact that whenever the trade-off between stability and security exists it is always resolved in favor of stability

are puzzling given the frequency of military interventions in politics. If rulers have levers for controlling their armed forces, why are defections by military forces such a regular occurrence?

## 1.6 Asymmetric Information about the External Threat

Let us now assume that only  $G$  observes the actual external threat  $T$ , whereas  $R$  is only imperfectly informed about it. As before, subgame perfection implies that given an allocation  $m$ , a general of competence  $\theta$  who obtains status quo benefits  $b_i$  will execute a coup if, and only if, the condition in Lemma 1 is not satisfied; i.e., if the threat  $T$  is not sufficiently large to deter him. This suggests that it will be sufficient to analyze the case with two types of threats: small and large, with  $1 < T_S < T_L$  (notice that we are maintaining Assumption 2). The ruler believes that the threat is  $T_S$  with probability  $q \in (1,0)$  and  $T_L$  with complementary probability.

From the comparative statics on  $T$ , we know that when threats become sufficiently large, the marginal costs of military allocations begin to outweigh their usefulness, so  $R$  responds by decreasing  $m$  even though there is no danger of a coup. We consider it highly implausible that a ruler will be so hampered by these marginal costs that she would respond to more serious threats by reducing her spending on security. Instead of introducing a parameter for marginal costs and requiring it to be sufficiently small given the maximum threat magnitude, we shall simply restrict the threat to ensure that the optimal allocation is strictly increasing in its size. This is already true when  $R$  constrains  $G$ , so this really only affects the unconstrained allocation.

**Assumption 3** (Reasonable Costs of Security). *The marginal costs of security are not so high as to cause larger threats to require smaller counter-measures under complete information:  $m_i^*(T_L) > m_i^*(T_S) > 0$ .*

If  $R$  does not hire a general, her expected payoff is

$$U_A = m \left( \frac{q}{m + T_S} + \frac{1 - q}{m + T_L} \right) - m,$$

which has a unique optimal allocation that results in a strictly positive payoff.

When  $R$  hires a general, any allocation can result in one of three outcomes: a certain coup, no coup, and a coup only if the threat is small. To see this, fix some  $m$  and observe that if  $G$  stays loyal under  $T_S$  given that allocation, he must certainly do so under  $T_L$  as well. Conversely, if he executes a coup under  $T_L$ , then he must also do so under  $T_S$  as well. The sole remaining possibility is that he executes a coup under  $T_S$  but remains loyal under  $T_L$ .

We begin by ruling out the possibility that the ruler will hire anyone when she believes that doing so would result in an inevitable coup (this parallels the complete-information case).

**Lemma 5.** *There is no equilibrium in which  $R$  hires  $G$  when she expects a coup to occur with certainty.*

Thus, in any equilibrium in which  $R$  hires a general, the general's loyalty is either certain or else only in doubt conditional on the actual size of the threat. The following result shows two things. First, the ruler will never hire anyone less competent than herself. Second, the ruler's strategy depends on her prior belief about the magnitude of the threat. If she is sufficiently convinced that the threat is large (i.e.,  $q$  is small), then she allocates more resources to  $G$  even though she knows that  $G$  will execute a coup if the threat is, in fact, small. The allocation is not, however, optimal for meeting  $T_L$  either because the possibility that it will be used in a coup against her forces the ruler to curtail it a bit. In this situation, the ruler faces a positive probability of a coup and does not have enough forces to deal with the large threat. If  $R$  is sufficiently convinced that the threat is small (i.e.,  $q$  is high), then she plays it safe: she allocates just enough resources to ensure the loyalty of  $G$  under the assumption that the threat is small. While this does ensure that no coup takes place, the ruler will find herself severely handicapped if the threat turns out to be large.

**Lemma 6.** *Fix a social group  $b_i$  and a level of competence  $\theta$ . In any equilibrium,  $R$  hires  $G$  only if  $\theta > \max(1, T_S)$ . In the unique equilibrium in which  $R$  hires  $G$ , there exists a unique  $q^* \in (0, 1)$  such that*

- if  $q \leq q^*$ , then  $R$  allocates  $\min(m_C(q), m_i^*(T_L))$ , where  $m_C(q)$  is the unique unconstrained maximizer of  $R$ 's expected payoff, and  $G$  executes a coup if the threat is

$T_S$  but remains loyal otherwise (risky strategy);

- if  $q > q^*$ , then  $R$  allocates  $m_i^*(T_S)$ , and  $G$  remains loyal (safe strategy).

When  $R$  plays the risky strategy, she not only faces a positive probability of a coup from a general with substantial resources, but may also fail to provide adequate resources to deal with the large threat. When  $R$  plays the safe strategy, she certainly fails to provide adequate resources for the large threat.

Having established what resources  $R$  will allocate once she has chosen  $G$  with some competence  $\theta$  from some class  $b_i$ , we now ask how she makes these selections. Since Lemma 6 shows that hiring can only occur if  $\theta > \max(1, T_S)$ , we shall assume that  $\bar{\theta}$  satisfies this condition.

**Lemma 7.** *Fix a social group  $b_i$ . In any equilibrium,  $R$  hires the most competent  $G$  she can ( $\bar{\theta}$ ).*

Finally, we need to consider the social group from which  $R$  selects the general. We first show that  $R$ 's payoff is non-decreasing in  $b_i$  if she pursues the riskless strategy. In particular, it is constant in  $b_i$  if the complete-allocation optimum against  $T_S$  is unconstrained, and strictly increasing otherwise. Thus, starting with a very low  $b_i$  the payoff will not change, and increasing  $b_i$  eventually causes it to start increasing.

**Lemma 8.** *Let  $b^*(T)$  denote the unique solution to  $S(T) = S_i^*(T)$ . And let  $b_1 = \min(b^*(T_S), b^*(T_L))$  and  $b_2 = \max(b^*(T_S), b^*(T_L))$ . If  $\bar{b} \leq b_1$ , then  $R$  strictly prefers to pick  $G$  from  $\bar{b}$ . If  $\bar{b} \in (b_1, b_2)$ , then  $R$  strictly prefers to pick  $G$  from  $\bar{b}$  for  $q > q^*$  if  $b_1 = b^*(T_S)$ , and for  $q \leq q^*$  if  $b_1 = b^*(T_L)$ , and is indifferent among any  $b_i \in [b_1, \bar{b}]$  for any other  $q$  (but strictly prefers any of them to  $b_i < b_1$ ). If  $\bar{b} \geq b_2$ , then  $R$  is indifferent among any  $b_i \in [b_2, \bar{b}]$  (but strictly prefers any of them to  $b_i < b_2$ ).*

We can now state the main result under asymmetric information.

**Proposition 2.** *If only the general knows the extent of the external threat, then in the essentially unique equilibrium the ruler picks the most competent general from the most privileged strata in society. If the ruler is sufficiently sure that the threat is small, she provides the general with only enough resources to meet that threat (even these might be*

*constrained), and the general remains loyal regardless of the extent of the threat. If the ruler is sufficiently sure that the threat is large, she provides the general with resources that balance the risk of a coup with the risk of failing to meet the large threat with adequate resources (even these might be insufficient for the large threat). The general remains loyal if the threat is large but executes a coup if the threat is small.*

*Proof.* The result follows immediately from lemmata 6, 7, and 8. The equilibrium is essentially unique because  $R$  might be indifferent among many values of  $b_i$  as long as they are sufficiently high. Each of these corresponds to a different equilibrium but they are all payoff-equivalent.  $\square$

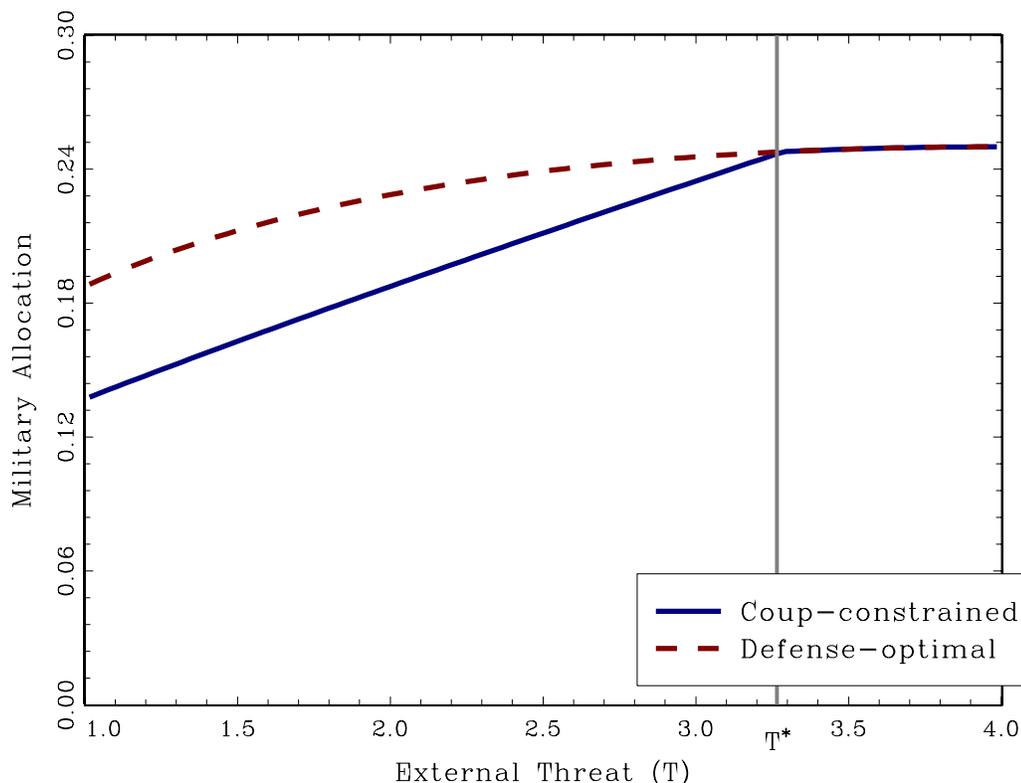
## 1.7 Discussion

### 1.7.1 External Threats and Military (Dis)Loyalty

Although it appears to make perfect sense, the Guardianship Dilemma turns out to be incomplete. It begins with the premise that the threat environment will create the need for armed forces, which in turn will pose yet another risk for the regime, but fails to consider what effect this environment will have on that new risk. At best, the Guardianship Dilemma offers a straightforward linear extrapolation: the worse the threat environment, the greater the need for armed forces, and, if this need is met, the larger the risk they will pose.

What is missing in this logical chain, however, is the simple fact that if the military does execute a coup and take over the government, the original threat is not going to magically disappear. The new rulers will have to face many, if not all, of the same problems and dangers that had confronted the old ones. The Malian regime of Amadou Toumani Toure, for example, was overthrown in a military coup d'état in March 2012. Even though the regime had been deposed by the military, the state was still forced to deal with an ongoing rebellion by Tuareg fighters (Nossiter 2012). Similarly, Syria experienced no fewer than eight successful coups d'état between 1950 and 1970, when Hafez al-Assad assumed power (Pipes 1989; Powell and Thyne 2010). Despite the frequent changes in rulership during this period, relations between the Arab state and its primary

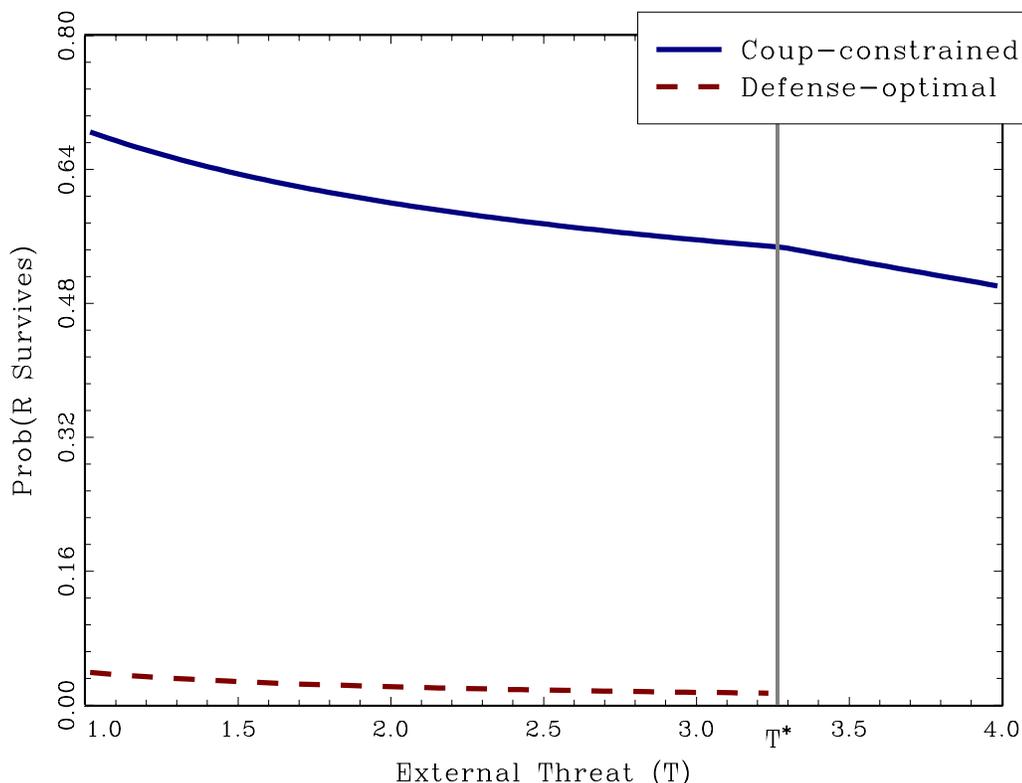
opponent, Israel, remained tense (Neff 1994).



**Figure 1.1:**  $R$ 's allocation to  $G$

The persistence of threats across regimes is a very real and important consideration for military agents who are considering whether or not to intervene in politics. Because these forces must both overthrow the regime *and* face the threat, external foes help to induce loyalty by a state's military forces. This “circling of the wagons” effect is shown in Figure 1.1, where we focus on threats that are at least moderately large ( $T > 1$ ).<sup>4</sup> If the external threat is grave enough ( $T \geq T_i^*(m, \theta)$ ), rulers can devote the optimal allocation to defense without triggering a coup. In the case of Iraq, President Saddam Hussein was able to relax constraints on the Iraqi military during the Iran-Iraq War principally because these forces were fighting for the survival of the state (Hiro 1991; Pelletiere and Johnson 1991). However, rulers in this context must also defeat a stronger threat, which discounts the probability of survival (see Figure 1.2).

<sup>4</sup>The parameters for all plots are:  $b = 0.25$ ,  $c = 0.30$ ,  $\theta = 16$ ,  $T_S = 1$ , and  $T_L = 4$ .



**Figure 1.2:** Military Endowment and Regime Stability with Known Threats

Alternatively, allocating the optimal amount of resources for defense would trigger a coup when  $T < T_i^*(m, \theta)$ , leading to a strictly lower chance of survival for the rulership. In this case, the ruler is safer by *reducing* the amount of resources that she devotes to defense to the coup-constrained amount, even though this will handicap the military. Muammar Qaddafi of Libya, for example, led a regime that faced only moderate levels of external threat for most of his 42 year rule. When it came to managing the military, Qaddafi — who himself had taken power in a coup — purposefully limited its power in order to improve regime security (Lutterbeck 2013, 40).

By identifying circumstances under which rulers will withhold resources from their militaries, our study builds on the work of Besley and Robinson (2010), who demonstrate that rulers will sometimes keep their militaries smaller than optimal in order to ensure their loyalty. The mechanisms driving these constraints, however, are quite different. Constraints in the Besley and Robinson (2010) model are a consequence of social conflict over public spending, which prevents the regime from credibly committing to

resource transfers. Because the military's loyalty cannot be purchased under such conditions, constraints on the strength of the armed forces are necessary to prevent defection. In contrast, our model shows that constraints can be a function of the threat environment even when rulers can make credible commitments (in our model the resources are given before the coup choice). Rulers can leave the military unconstrained so long as the external threat is sufficiently large, but must impose limitations on their armed forces when faced with intermediate threats.

In one way, these theoretical results are consistent with the basic claim of Desch (1999): militaries are less willing to intervene when external threats loom large. However, our model reveals that with a known external threat, the loyalty of the military does not depend on the size of that threat. The ruler can always remain safe from a coup, whether the external threat is small or large, by controlling the power of the armed forces. This suggests that the mechanisms studied by Desch cannot account for the dilemma despite identifying the loyalty-inducing effects of larger threats. The risk of military disloyalty is not due to variation in the threat environment, but is instead triggered by another factor, one that prevents rulers from calculating and appropriating the correct level of military resources for the given environment. This factor is the asymmetric information that the military and the ruler might have about the seriousness of the threat.

### 1.7.2 Disagreements about the Threat Environment

Delegating the responsibility for defense to the armed forces creates a less obvious, but, in many ways, more vexing problem for rulers. Militaries are maintained because they possess specialized skills and tools for assessing and combating the state's enemies. This specialization means that militaries will possess private information about the nature of the threat environment — information that we show is key for rulers who are trying to navigate the Guardianship Dilemma. Rulers' beliefs about the threat environment determine the amount of resources they devote to the military, which, in turn, drives both the risk of a coup and the ability to defeat external threats.

Figure 1.3 shows that when the ruler believes the threat to be small ( $q > q^*$ ), she allocates a relatively low level of resources to the military, which ensures its loyalty

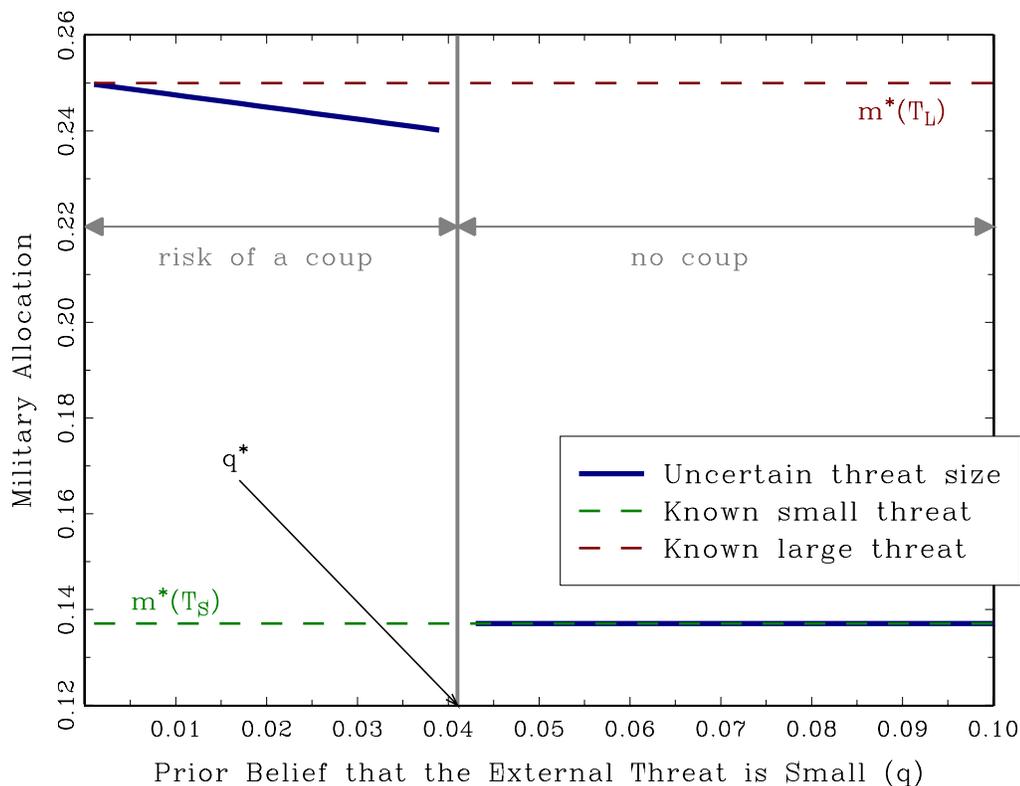
whether the threat is actually small or large. However, if the ruler mistakenly underestimates the threat, she will allocate too few resources for facing the large threat. While the ruler remains safe from a coup, the regime is more vulnerable to external foes. This danger is illustrated in 1.4, which shows the probability of regime survival as a function of the ruler's belief.

Alternatively, when the ruler believes the threat to be large ( $q \leq q^*$ ), she allocates a level of resources that will trigger a coup if the threat is actually small, but helps the regime defend against large threats. Because rulers are strictly worse off in a coup, the risk of overestimating the threat is the most dangerous possibility facing their regimes. As a result, even at this high tier of resource allocation, the ruler hedges against the risk of a coup by imposing slight constraints on the military unless she is absolutely certain that the threat is large. So when the ruler must deal with uncertainty, she faces the possibility of either overestimating the threat and risking a coup, or underestimating it and leaving the state exposed to enemies. Rulers are safer when responding appropriately to the given threat environment, and safest when facing a definite small threat.

These findings complement the work of researchers like Svobik (2012) and Brooks (2008), who posit that informational asymmetries can complicate the civil-military relations within states as well as the response of regimes to external threats. While Svobik (2012, 2013) focuses on the case in which military agents are asymmetrically informed about the policies instituted by a regime, we outline the difficulties that arise from the private information that militaries gain while fulfilling their responsibilities as guardians of the state. In this way, we characterize the essence of the dilemma inherent in civil-military relations: the competencies that make military agents effective also make them a threat.

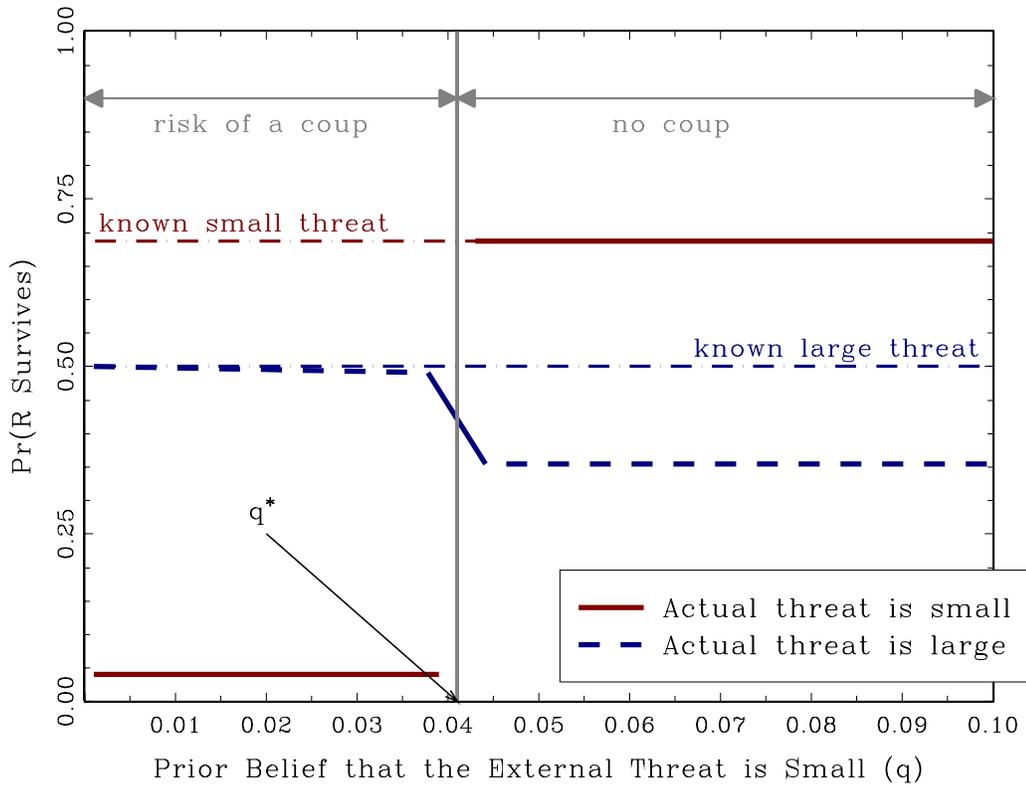
### 1.7.3 The Sources of Disagreement

The model reveals that the Guardianship Dilemma is triggered by the asymmetric information that militaries hold about the nature of the threats facing the state. One might wonder, however, why the military would not reveal its private information to the rulership. While we abstract away from this question in the model, it is easy to identify circumstances under which military actors will withhold or misrepresent infor-



**Figure 1.3:** Threat Estimates and Resource Allocation

mation about the threat environment. A root cause of these asymmetries is the fact that militaries and political elites often want different things. Militaries tend to crave institutional autonomy, and discretion over spending and personnel decisions in particular (Finer 1988; Huntington 1957). Alternatively, we show that constraints on the military are crucial for leaders who are trying to manage the Guardianship Dilemma when facing intermediate threats. Because the ruler's beliefs about the threat environment are a key driver of these constraints, military agents have an incentive to misrepresent the true threat environment when they expect that revealing this information would lead to restrictions. Since rulers know that the armed forces possess this incentive, they are likely to be skeptical of the assessments produced by the military, even when the armed forces are providing accurate reports about the threat environment. Rulers can, of course, seek strategic assessments from other sources. In fact, regimes often create independent, redundant security and intelligence services for this purpose. Yet as Egyptian President Gamal Abdel Nasser discovered in the Six-Day War of 1967, poor threat assessment due



**Figure 1.4:** The Divergence of Threat Estimates and Regime Security

to contentious civil-military relations is a problem that can be hard to overcome (Brooks 2008).

While restrictions on the autonomy of military institutions imposed by rulers are an important source of acrimony in civil-military relations, the model reveals that efforts to achieve civil-military harmony may backfire. Maintaining control over the resources that flow to the military and the characteristics of its personnel are essential levers for political elites who seek to avoid defection by the armed forces. However, these efforts compromise the military's institutional autonomy and may otherwise hurt its corporatist interests. In this, the model offers a logical basis for the type of civil-military strife that has troubled many states. Yet paradoxically, the model predicts that *attempts to appease the military can lead to a coup*, since providing any  $T_i^*(m, \theta) > T$  will trigger disloyalty by the armed forces. This puts rulers in a tough position, since keeping the armed forces constrained is sometimes necessary to ensure their loyalty, but may also perpetuate the military's incentive to misrepresent the threat environment.

### 1.7.4 Relating the Model to Empirical Work

A small, but growing, body of scholarship analyzes correlations between coups and variables that could be interpreted in terms of our model. We now discuss how one might account for these empirical regularities with the mechanism it identifies, while also highlighting the additional assumptions one would need to make and the difficulties with positing some of the direct relationships suggested by these studies.

The model predicts that external threats help to induce military loyalty, though civilian control ultimately depends on whether or not the ruler possesses accurate information about the threat environment. In this context, it is useful to consider the empirical results of two studies that find that the probability of coups is lower if the country is involved in a war (Piplani and Talmadge 2015) and even in a crisis (Arbatli and Arbatli 2014). The explanatory mechanisms these studies offer are different (although not necessarily incompatible): Piplani and Talmadge (2015) argue that when the military is engaged in a war there are fewer opportunities for a coup and more uncertainty about who will join it, whereas Arbatli and Arbatli (2014) argue that crises allow rulers to commit credibly to transfers to the military and to generate rally-around-the-flag effects. Even though either one or both of these mechanisms could be relevant, it is worth noting that our model could produce these predictions in a very straightforward manner.

Since the key variable is the extent of disagreement about the severity of the threat, which is difficult to measure directly, one might wish to conceptualize the uncertainty about the threat in terms of factors that make it more or less likely for such disagreements to arise. For instance, an ongoing war would be indicative of a fairly serious threat that neither the military nor the ruler could possibly be in doubt about. Moreover, since longer wars can potentially reveal more information (Slantchev 2003), the longer the war, the less likely disagreement should be. Analogously, a crisis could indicate a somewhat less severe threat with some possible disagreements because of diverging estimates about the likely outcome of the crisis. When the country is at peace and not involved in a crisis, on the other hand, there is no clear evidence that could force the political and military estimates to converge: since all threats are purely hypothetical at that point, the possibilities for different opinions relying on different pieces of information would proliferate. The longer the peace spell, the more likely are these differences

to become serious disagreements.

In other words, one might think of disagreement as a continuous variable, proxied by how long the country has been at peace, whether it is involved in a crisis, and whether it is actively fighting. The model would then predict that coups are most likely when there is peace (and the longer the peace spell, the higher the probability of a coup), significantly less likely when the country is involved in a crisis, and quite unlikely when it is involved in a war (and the longer the war, the lower the probability of a coup). Thus, our model can account for the correlations found by both of these analyses without having to resort to different explanatory mechanisms.

While uncertainty about the severity of the threat has a straightforward direct effect, its role as a mediator for the effects of other variables is more complex. Consider, for instance, the problem of relating the military's endowment to the probability of a coup, which is the subject of a study by Powell (2012). Using an expected utility framework, Powell (2012, 1021) notes that the military would be more likely to execute a coup if it anticipates high benefits from doing so, and if it believes that it has a high probability of success. He then argues that higher (or increasing) levels of funding per soldier will lower the probability of coups (Hypothesis 1) but make coups more likely to succeed (Hypothesis 5), which he considers a paradox (Powell 2012, 1025).

Relating these two hypotheses to variables in our model is not as easy as one might think because of the way they treat military resources. The model's basic assumption is that Hypothesis 5 is correct: this is built into the functional form of the probability of success, which increases in the amount of resources controlled by the military. Furthermore, the model also assumes that these resources cannot be used to increase directly the benefit of a coup, as the reasoning behind Hypothesis 1 would have it. On the other hand, the model does allow the ruler to select generals from more privileged groups, which decreases the potential gains from a coup, but does not allow this to influence the probability of success. We think that there are substantial analytical benefits to be had from keeping these effects separate. After all, even if resources are in the infinitely fungible medium of money, it is not a simple matter to explain how they could create the supposed paradox: higher salaries would not necessarily translate into better training, while purchasing better military equipment would not necessarily yield the military

higher benefits from the status quo.

Since Powell's (2012) statistical analysis uses the government's military expenditures, which include everything from salaries to equipment — not to mention cases where a significant chunk of the military budget goes to civilian contractors and employees, which increases neither the status quo benefits of the military nor its ability to prevail in a coup — to measure the resources made available to the military, it is not possible to map the findings to the model. Unfortunately, neither it is possible to draw the conclusions he does from that analysis. For instance, one of the findings is that contrary to Hypothesis 5, larger expenditures do not increase the probability of coup success. This would be just as stunning if the spending was on better training, better equipment, and better organization, as it would be trivial if it was on better salaries, health and pension benefits, and other perks. In other words, without disaggregating military expenditures to distinguish between spending that could potentially improve the capabilities from spending that is designed to improve the status quo benefits of the military, one cannot take this finding as contradicting the assumption of our model that resources designed to improve capabilities would increase the probability of success. Instead, the model's clear conceptual distinction highlights a vague and under-theorized aspect of the explanatory mechanism that generates Hypothesis 5.

It is perhaps even more interesting to attempt to relate Hypothesis 1 to the model, at least when it comes to the causal mechanism. (Obviously we cannot make much of the correlation findings here either for the reasons discussed above.) Powell's (2012) hypothesis is that better-endowed militaries (or those that enjoy an increase in resources) should be less likely to stage a coup. Since under complete information about the threat the probability of a coup is constant at zero in equilibrium, any variation has to come from the asymmetric information case, where the relationship between resources and coup probability is mediated by the extent of disagreement about that threat.

On one hand, Figure 1.3 seems to predict precisely the opposite relationship to the one stated in Hypothesis 1: the only positive risk of a coup happens when the ruler is sufficiently convinced that the threat is large and so provides the military with a lot of resources ( $q \leq q^*$ ). Since in all other cases the ruler opts for the small allocation and no risk, one might be tempted to conclude that militaries with more resources are

more likely to execute a coup. However, if we consider the dynamics in the range of the parameter space where a risk of a coup exists, we find something different. As the plot shows, the military's allocation is increasing in the ruler's belief that the threat is large. Recall now that in equilibrium the military executes a coup only when the threat is actually small and assume that the ruler is not deluded on average (meaning that as her belief that the threat is large goes up, the actual probability that it is small is also going down). In this situation, we would expect the probability of a coup to be decreasing as the resources increase. Overall, the model would lead us to expect that militaries with fewer resources do not generally engage in coups, but also that when coups do occur, militaries with more resources are less likely to have caused them. While the latter is consistent with Powell's (2012) findings, we should not read this as some sort of unequivocal support for the model: after all, our mechanism does depend on the crucial intervening variable of the degree of disagreement, and this is naturally absent in the estimations that take a completely different mechanism as their hypothesized data-generating process.

Some of the most influential work on civil-military relations emphasizes the importance of structural determinants of military disloyalty (Zimmermann 1983). When the regime lacks legitimacy, the economy is bad, or the culture is permissive of military interference in politics, the likelihood that the military will seize power is said to increase (Finer 1988; Londregan and Poole 1990). Additionally, Powell (2012, 1030) also argues that institutional coup-proofing measures — such as having parallel military or paramilitary forces, or an extensive security and domestic surveillance apparatus — would reduce the likelihood of coup success and finds not only that they do but that they also reduce the risk of coups.

One parameter in our model can represent some of these factors: the costs of executing the coup that the general pays. Although these costs do not affect the probability of prevailing if the coup is executed, they do affect the incentive to launch a coup because they determine the overall expected benefit of doing so. The effect of this parameter is indirect and transmitted through the way it affects the optimal resource allocation. The complete-information allocation is non-decreasing in these costs: if  $m_i^*(T)$  is at the unconstrained optimum, then it is independent of the costs, and if it is at the constrained

optimum, it is strictly increasing because  $S_i^*(T)$  is. In other words, when the structural factors increase the costs of a coup, the ruler can safely provide the military with larger allocations, which are helpful against the external threat.

It can be demonstrated that this means that both the safe and the risky payoffs are non-decreasing and that  $q^*$  is non-increasing. This means that under asymmetric information an increase in the costs of a coup results in generally larger allocations for the military and an expansion of the range where the ruler opts for the safe strategy (so a decrease in the ex ante risk of a coup). Thus, the expectations derived from the model are consistent with the empirical findings about the importance of structural variables.

### 1.7.5 Selecting the Generals, Part 1: Privilege

The model provides a rationale for leaders who select from privileged social groups when filling key military positions, corroborating the work of scholars who emphasize the importance of social, economic, or political-ties as determinants of military recruitment and promotion. Members of groups receiving relatively lucrative benefits from the status-quo political arrangement have less incentive to overthrow the regime, making them attractive candidates for positions within the military. It can be shown that increasing these benefits has essentially the same effect as increasing the costs of a coup. Thus, increasing  $\bar{b}$  allows the ruler to provide more resources to the military without increasing the risk of a coup. Under asymmetric information, this results in non-decreasing payoffs from both the safe and the risky strategies, as well as non-increasing  $q^*$  (that is, an expanding region where the ruler opts for the safe strategy).

The model leads us to expect that rulers who engage in exclusionary selection practices and choose their military from a restricted group of privileged elites will face a lower risk of a coup and will do better against external threats. Conversely, rulers who for some reason are unable to limit their selection to such a group but must admit representatives of other, less privileged, groups would have a higher risk of a coup and will generally perform worse against external threats.

It is not difficult to find examples of rulers engaging in exclusionary practices when it comes to their militaries. After the 1965 coup and 1966 dissolution of the monarchy in Burundi, most of the 17 military officers in the National Revolutionary Council

came from the ruling Tutsi minority, while only three belonged to the Hutu ethnic majority (Kaufman and Haklai 2008, 752). In South Africa during Apartheid, whites dominated the military leadership and were the only group allowed to fulfill combat roles. Non-whites serving in the military were relegated to supporting positions, such as making food or fixing equipment, that did not provide direct access to coercive force (Enloe 1975, 24).

It is perhaps more interesting to compare the model's expectations to an empirical study that uses a different explanatory mechanism to derive its hypotheses. Roessler (2011) argues that coups in sub-Saharan Africa are triggered by an internal security dilemma that arises out of the inability of elites to commit to cooperating with each other to maintain their hold on power. Rulers suspicious of the loyalty of some elites take precautionary coup-proofing measures that increase the anxiety of these elites, which makes them more prone to violence. If the ruler succeeds in excluding these elites from the coercive apparatus, this violence takes the form of a civil war, but if the ruler fails to exclude them, the violence takes the form of a coup. Because rulers cannot observe loyalty directly, they use ethnicity as an informational shortcut, "an expedient mechanism to eradicate perceived enemies at a time of high uncertainty" (Roessler 2011, 313).

Our model has no concept of loyalty as an attribute of the potential general. Instead, loyalty is represented by the decision not to execute a coup, making it an endogenous quantity that is determined by the incentives generated from the combination of resources, competence, benefits, and threat environment. Thus, the model does not allow for the use of ethnicity as a cue for loyalty. If, however, ethnicity is a proxy for privilege (as it would be in most cases), the model rationalizes exclusionary ethnic practices simply as a way to ensure higher status quo benefits for the general.<sup>5</sup> In this way, the model yields predictions that are remarkably similar to the internal security dilemma story: rulers will attempt to select the commanders of their coercive apparatus mostly from their own ethnic group (which would be privileged in other ways), and in those cases they will be at a lower risk of a coup.

One might also want to think of some additional insights provided by our mechanism. For instance, Roessler (2011, 314–16) makes a compelling argument that while

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<sup>5</sup>See Esteban and Ray (2008) for reasons conflict might arise along ethnic rather than class lines.

ethnic exclusion can “terminate the internal security dilemma. . . it leaves the regime vulnerable to a future civil war.” One might wonder why rulers would make such a trade-off, especially because Roessler (2011, 314–15) simply asserts that civil war somehow “poses less of a threat to their political supremacy.” In contrast, our model suggests straightforward reasons for such a substitution effect. If elites are known to be disgruntled following their exclusion, they will represent a larger known threat to the regime. As we have seen, under these circumstances, the ruler will respond with increased military spending while simultaneously facing a lower risk of a coup from within. Because the larger threat has a “circling the wagons” effect that lowers the incentives for a coup, the ruler can counter the external threat more effectively. A simple extension of our model that allows the ruler to exacerbate that threat shows that the ruler does have a very strong incentive to do so (McMahon 2014). In other words, our mechanism can explain a crucial trade-off that is not part of the internal security dilemma mechanism and as such needs to be asserted to make that explanation work.

### 1.7.6 Selecting the Generals, Part 2: Competence

Many studies suggest that agents chosen on the basis of their ties to the ruler are less effective, since perceived loyalty is emphasized over merit and competence during the selection process (Quinlivan 1999; Brooks 2008; Gaub 2013). As we noted above, we regard loyalty as a consequence rather than an attribute, although one might wish to consider the use of a privileged group as a measure of ties to the ruler. The model very clearly shows that the commonly argued trade-off between loyalty and competence imposes a false choice on rulers, whose optimal strategy is to select the most competent general while simultaneously increasing the probability that he will remain loyal.<sup>6</sup> Moreover, it is precisely the agent’s ties to the regime that permit rulers to endow the military with additional resources. One should not be surprised to learn that when the Syrian military received advanced T-72 tanks, these weapons systems were distributed first to units deemed to be closest to the Assad regime because they were led by co-ethnic Alawites and sometimes even by members of the Assad family (Bennett 2001; Quinli-

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<sup>6</sup>This is true as long as the privileged group also contains competent agents, a likely scenario given that privilege often results in access to better education and healthcare.

van 1999, 147). Since more competent agents that command more resources are better positioned to deal with external threats, the model also contradicts the notion that these militaries must be of low quality.<sup>7</sup>

Since a key hypothesis that emerges from our analysis is that rulers always want to hire the most competent generals, we should like to take a closer look at a famous instance that seems to contradict that claim: Saddam Hussein's choice of high-ranking military officers. As we noted above, the Iraqi president exerted control over the appointments of his military commanders, giving priority to groups with close ties to the regime. In particular, Hussein favored those with whom he shared common traits — mainly fellow Ba'athists and Sunni-Arabs, as well as privileged men from the area around his hometown of Tikrit — when choosing personnel for particularly sensitive tasks (al-Marashi 2002).

When Iraq invaded Iran in September 1980, many of these loyalist officers proved to be incompetent military leaders, resulting in a painstakingly slow advance into Iranian territory. The sluggish pace of the advance allowed the Iranian military, still reeling in the aftermath of the 1979 Islamic Revolution, the time to coalesce into a force capable of pushing the Iraqis backwards (Pelletiere and Johnson 1991; Hiro 1991). Hussein reacted by replacing many of these commanders, and as a result the performance of the Iraqi armed force markedly improved.

It would be easy to use this case as an example of a ruler privileging loyalty over competence when selecting military agents, and the deleterious effects of this type of decision-making calculus. However, it is important to dig a bit deeper to understand the decision-making calculus of the Hussein regime, and the consequences of these decisions for military effectiveness. First of all, evidence suggests that Saddam Hussein was selecting for both competence and privilege when appointing officers to military positions prior the war. Woods et al. (2011, 14) write that “At the war's outset, Saddam was heavily influenced by Ba'ath ideology. He believed that any Ba'ath leader could, at the same time, be a competent military commander.” In fact, the regime had a famous slogan: “al-askari al-jayyid huwa al-Baathi al-jayyid”, which means “the good military

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<sup>7</sup>Egorov and Sonin (2011) argue that rulers purposefully select incompetent agents as a way to minimize their exposure to the risk of a coup. Our model considers the potential risks associated with incompetence, and draws much different conclusions.

man is the good Baathist" (Parasiliti and Antoon 2000, 134).

In other words, not only did Hussein not regard the selection from the privileged Ba'athist elite as some sort of substitute for competence, he seems to have thought that membership in the party was a good indicator of high military competence. His behavior is thus in line with the model's expectations.

As it turned out, Hussein was mistaken about the direct relationship between membership in the privileged group and competence. Since our model assumes that competence is directly observable, it does not allow for such mistakes. In its present form, the model cannot account for Hussein's initial choice. However, if our model is right, then Hussein's intention must have been to select competent generals. This implies that upon realizing that he had made a mistake, Hussein should immediately have moved to correct it by making appropriate replacements. Since performance in war can be regarded as a direct test of competence, the fact that Hussein did replace unsuccessful commanders with successful ones can be taken as evidence that supports our model. Moreover, the fact that Hussein continued to select from the privileged group lends further support to our model and undermines the idea of a trade-off between loyalty and competence.<sup>8</sup>

We can take our analysis further and turn Hussein's apparent mistake to our analytical advantage. Some studies suggest that while the loyalty-competence trade-off is real, large external threats can swamp the fear of a coup and cause the ruler to focus more on competence rather than loyalty (Talmadge 2013). If such a decision is conditional on the level of threat, then the choice of competent commanders must be transient: The diminution of the threat must cause the ruler to revert to form. In this instance, after the war's end Hussein would be expected to replace the competent, but now dangerous, generals with incompetent cronies. Our model, on the other hand, would lead us to expect precisely the opposite outcome because the incentive to select the most competent general is independent of the level of threat. Since performance in the war has allowed him to identify the competent commanders, Hussein would be expected to retain them after the war's end.

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<sup>8</sup>Pelletiere and Johnson (1991, 59) note this trend: "Most of Iraq's higher level commanders appear to have been politically reliable professionals after 1982. Indeed, from 1984 on, the issue of competence seems to have been the principal deciding factor for advancement."

In order to assess these divergent expectations, we identify the senior leaders of the Iraqi armed forces — members of the high command — during the last two years of the Iran-Iraq War (1987 and 1988). The high command is inclusive to a variety of senior military leadership positions, from commander-in-chief Saddam Hussein and the minister of defense to the commanders of the navy and the seven army corps (Bengio 1989, 1990). After determining the individuals who held these key posts, we tracked their career trajectories for the first few years after the war to determine if they were purged.

In all, we were able to track the post-war career trajectories for 23 of the 27 members of the 1987/88 military high command (see Appendix B). We excluded Hussein himself (the 28th commander) from this analysis. The data reveal that Hussein continued to employ a sizable majority of his senior military leaders after the war. As is shown in Table 1.1, almost three-quarters of the generals continued to hold the same position or were promoted by the regime. This evidence, while it is only suggestive, provides support for the predictions of our theory: Hussein kept his war-proven military commanders after the war. There is no post-war information for four of the generals who served in the high command, possibly because they were purged by the regime. Yet even if we were to assume that all four were purged, it would mean that Hussein retained 76 percent of the still-living members of the high command from 1987/88 for at least two years after the war.

**Table 1.1:** 1987-88 Iraqi Military High Command After Iran-Iraq War

Outcome	Number	Relative Freq.
Held Same Position	11	0.41
Were Promoted	8	0.30
Death in Combat	1	0.04
Death in Accident	1	0.04
Retirement	2	0.07
Unknown	4	0.15
Total	27	1.01

Notes: Career trajectories for the men who held positions in the Iraqi military high command during 1987 or 1988. Outcomes determined by the status of each individual between the end of the Iran-Iraq war and 1990/1.

Hussein's actions clearly demonstrate a ruler who was seeking both to maximize competence and ensure loyalty while selecting military officers. The Iraqi regime used the crucible of war to identify competent commanders, and then continued to rely on these individuals after the fighting had ended. While our evidence is limited to the senior leadership of the Iraqi armed forces, we believe that the calculus driving the decisions of rulers like Hussein is most evident among these individuals, who are both highly influential and visible within the state. Focusing on the high command also allows us to avoid confusing political calculations with the downsizing that occurs among the ranks of most militaries following long and costly wars.

### 1.7.7 The Military Caste

The model reveals that rulers are better by picking military leaders from among groups that benefit from life under their current regime. However, one may wonder what might happen if rulers lack the kind of politically-salient cleavages that can be leveraged for political purposes. In other words, what if there is no readily-available group that derives privilege from the regime?

Since higher  $b_i$  are always better for  $R$  when the loyalty constraint is binding,  $R$  might want to create a privileged caste from which to draw her generals. That is, if  $\bar{b} < b^*$  so that no existing group derives sufficient benefits from the status quo to ensure  $G$ 's loyalty at the optimal level of resources required to deal with the external threat,  $R$  is strictly better off creating such a group,  $\bar{b} = b^*$ , and appointing a general from it. If benefits are intended to ensure the loyalty of the armed forces, it makes sense to allocate goods directly to these agents, as a ruler could do by creating and privileging a military caste. This logic is consistent with one prominent example of military privilege. President Hosni Mubarak sought to ensure the loyalty of the Egyptian armed forces by providing military personnel with access to better economic opportunities and other benefits than were available in private life, to the point where the military was allowed to engage in for-profit ventures, including the production of Jeep Wranglers (Roston and Rohde 2011).

### 1.7.8 Powerless over the Purse?

Since we have posited the existence of the power of the purse, it is important to consider how our argument would change if the government did not possess it; that is, if the military is in direct control of its budget. This sort of affair is only common in military regimes where the government itself is controlled by the armed forces. The problem a junta faces is actually in some sense even more severe because the ruling officers have to worry about being displaced by others while simultaneously being constrained in their ability to reduce the military's budget in order to prevent that outcome. Since the junta cannot starve itself — after all, doing so would negate the reason for grabbing power in the first place — it might be forced to replace potentially disloyal officers with less competent ones. Thus, we would expect to see purges in the military after a coup. Moreover, when these purges are impractical (e.g., because the officers command significant loyalty on their own or because sacking them would jeopardize the legitimacy of the junta in the eyes of the armed forces), we would expect military regimes to succumb to coups with far greater frequency than non-military ones. Indeed, the potentially destabilizing effects created by military control over the budget may be one reason why military regimes tend to be short-lived, and why some militaries are so eager to return to the barracks after a more favorable political regime has been installed (see Magaloni 2008; Geddes 2004).

## 1.8 Conclusion

Examining the Guardianship Dilemma allows us to make several contributions to the study of political instability in general, and civil-military relations more specifically. First, the same threats that necessitate the creation of a military for defense also help to keep this force loyal. Ultimately, the pernicious effects of the Guardianship Dilemma are due primarily to rulers' uncertainty about the threat environment, rather than the severity of these threats. Second, rulers in coup-prone states are better off by staffing their militaries with persons from privileged groups, since regimes can actually *increase* the fighting power of their armed forces through selective appointments. If individuals with a higher-status-quo benefit have less incentive to overthrow the regime, they can be trusted with more coercive power. Third, rulers also select generals on the basis

of their competence, since a competent commander can more effectively manage the state's military resources. While this competence increases the likelihood that a coup will succeed if attempted, rulers prefer to manage the generals' loyalty by restricting the resources that flow to militaries, rather than by appointing dolts who will waste what they are given.

While the model enables us to characterize the most basic features of the dilemma, further research is necessary to extend and refine these insights. A useful first step would be to examine whether the Guardianship Dilemma depends on the source of the threat facing the state, especially in the context of foreign versus domestic enemies. While previous research predicts that civil-military relations differ drastically on the basis of whether the threat comes from within or outside of states' borders (Desch 1999), the dynamics we outline exist in the presence of any threat that endangers the government. Dissimilar threats may, however, differentially affect the variables that impinge upon the dilemma, changing the extent to which rulers must relax or impose constraints on their armed forces. There may also exist levels of uncertainty about the strategic environment that vary systematically across unlike threats. While these differences are likely to be manifest in the empirical record, it would be worthwhile to explore whether or not this variation in behavior is due to same underlying mechanism.

Another step would be to analyze an extension to the model in which the interaction between military and political elites takes place over multiple periods. The game in our model ends when the external threat is faced. In practice, of course, whoever is in charge of the state must continue to rule. If the military has been endowed with the resources to face a threat, the sudden termination of this loyalty-inducing threat could put the regime in grave danger, leading rulers to prefer enduring hostilities with opponents. In this, it may be possible to develop a civil-military logic for the cultivation of rivalries. One could also explore how the actions of rulers might change if the competence of potential generals is hard to observe, as it was initially for Saddam Hussein. The model reveals that knowing the competence of the military leadership is important for rulers who are calibrating an appropriate response to external threats and the risk of a coup, and that, consequently, uncertainty about competence could potentially be costly or dangerous (or both!) for the regime. As a result, we may identify rulers who invest

in military academies, conduct exercises, or use the process of fighting in conflict to separate the types of military officers in their armed forces.

## 1.9 Appendix A: Mathematical Proofs

**Proof of Lemma 1.** If  $G$  remains loyal and does not mount a coup, this threat is realized and  $G$ 's expected payoff is  $p(m, T; \theta)b_i$ . If a coup did occur but it failed,  $G$  is eliminated entirely so his payoff once the threat is realized remains 0. If a coup succeeded,  $G$  obtains the benefit of rule and fights the external threat ( $R$ 's security resources are assumed lost and unavailable to  $G$ ). Thus,  $G$ 's expected payoff from a coup is  $p(m, 1; \theta)p(m, T; \theta) - c$ . By subgame-perfection,  $G$  will remain loyal if

$$p(m, T; \theta) [p(m, 1; \theta) - b_i] < c,$$

execute a coup if the strict inequality is reversed, and be indifferent otherwise. We can rewrite this as  $T < T_i^*(m, \theta)$ , where the latter is defined in (1.1). This establishes the sufficiency part of the claim.

Letting  $x \equiv \theta m$ , we can observe that

$$\frac{dT_i^*}{dx} = \left(\frac{1}{c}\right) \left[1 - (b_i + c) - \frac{1}{(1+x)^2}\right],$$

which means that

$$\text{sgn}\left(\frac{dT_i^*}{dx}\right) = \text{sgn}\left(1 - (b_i + c) - \frac{1}{(1+x)^2}\right).$$

This yields a quadratic,  $x^2 + 2x - \frac{b_i+c}{1-(b_i+c)} > 0$ , which is a parabola that opens up. Although the discriminant is  $4/(1 - (b_i + c)) > 0$ , the smaller root is negative, which means that the inequality is satisfied for all

$$x > \frac{1}{\sqrt{1 - (b_i + c)}} - 1. \tag{1.4}$$

But now  $T_i^*(m, \theta) \geq 0$  implies that

$$x \geq \frac{b_i + c}{1 - (b_i + c)} > \frac{1}{\sqrt{1 - (b_i + c)}} - 1,$$

where the second inequality is readily verified under Assumption 1, and so (1.4) must be satisfied whenever  $T_i^*$  is non-negative. In other words, when  $T_i^*$  is non-negative it must be increasing in both  $\theta$  and  $m$ , as claimed.

To prove necessity, we need to show that there is no equilibrium where  $G$  executes a coup with positive probability when indifferent. Suppose, to the contrary, that he does execute a coup with positive probability, perhaps even certainty, when indifferent. First, note that if  $R$ 's expected payoff from a coup is at least as good as the expected payoff from loyalty, then the fact that  $R$  strictly prefers not hiring a general to a coup also implies that  $R$  would not hire a general in this case. In other words, whenever  $G$  gets hired in equilibrium, it must be that  $R$  strictly prefers him to remain loyal:

$$p(m, T; \theta) > p(1, \theta m; 1)p(m, T; 1). \quad (1.5)$$

Second, we show that  $R$  can do strictly better by ensuring  $G$ 's loyalty. Letting  $q \in (0, 1]$  denote the probability of a coup,  $R$ 's expected payoff is  $qp(1, \theta m; 1)p(m, T; 1) + (1 - q)p(m, T; \theta) - m$ . Since  $G$  is indifferent, it must be that  $T_i^*(m, \theta) = T > 0$ , which further implies that  $T_i^*$  is increasing in  $m$ . This now means that any  $\hat{m} < m$  would result in  $T_i^*(\hat{m}, \theta) < T$ , ensuring  $G$ 's loyalty. Consider now some such  $\hat{m} < m$  that is arbitrarily close to  $m$ , and observe that this means that  $p(\hat{m}, T; \theta)$  is arbitrarily close to  $p(m, T; \theta)$ . By (1.5),  $qp(1, \theta m; 1)p(m, T; 1) + (1 - q)p(m, T; \theta) < p(m, T; \theta)$  for any  $q \in (0, 1]$ , which means that we can always find  $\hat{m}$  such that  $qp(1, \theta m; 1)p(m, T; 1) + (1 - q)p(m, T; \theta) < p(\hat{m}, T; \theta)$ . In other words,  $R$  strictly prefers to reduce  $m$  by an arbitrarily small amount and ensure  $G$ 's loyalty. But this contradicts the equilibrium requirement that  $R$ 's strategy be optimal. Therefore, there can be no equilibrium where  $G$  executes a coup with positive probability when indifferent. This establishes the necessity part of the claim.

**Proof of Lemma 2.** If  $R$ 's choices avoid a coup, her payoff is  $U = p(m, T; \theta) - m$ , and the loyalty constraint,  $T \geq T_i^*(m, \theta)$ , must obtain. Solving for the constraint yields the quadratic  $(1 - (b_i + c))\theta^2 m^2 - (b_i + c + cT)\theta m - cT \leq 0$ , whose discriminant is  $(b_i + c - cT)^2 + 4cT > 0$ . Under Assumption 1 the smaller root is negative, so let  $S_i^*(T)$  be the larger root defined in (1.2). Since the coefficient on the squared term is positive, the constraint is satisfied for all  $\theta m \leq S_i^*(T)$ .

$R$ 's payoff is strictly increasing in  $\theta$  and concave in  $m$ :

$$\frac{dU}{d\theta} = \frac{mT}{(\theta m + T)^2} > 0 \quad \text{and} \quad \frac{dU}{dm} = \frac{\theta T}{(\theta m + T)^2} - 1.$$

Let the solution to the first-order condition on  $m$  be defined as

$$\tilde{m}(\theta) = \max\left(0, \sqrt{\frac{T}{\theta}} - \frac{T}{\theta}\right),$$

so clearly the unconstrained maximum is at  $(\tilde{m}(\bar{\theta}), \bar{\theta})$ . Let  $S(T) = \bar{\theta}\tilde{m}(\bar{\theta})$  be the loyalty induced if  $R$  were to provide  $G$  of maximal competence with the level of resources optimal for dealing with the threat. If this level of disloyalty does not exceed the maximum level that avoids a coup,  $S(T) \leq S_i^*(T)$ , then the unconstrained maximum is the unique solution to  $R$ 's maximization problem.

If  $S(T) > S_i^*(T)$ , then the induced level of disloyalty exceeds the safe maximum, and  $G$  would execute a coup if he were provided with such resources. Since this cannot happen in an equilibrium where coups are avoided, the loyalty constraint must bind:  $\theta m = S_i^*(T)$ . (If it were slack at some  $\theta m$ , then  $R$  could strictly increase her payoff by increasing  $\theta$  until it binds.) This means that  $R$ 's expected payoff can be written as

$$U = \frac{S_i^*(T)}{S_i^*(T) + T} - \frac{S_i^*(T)}{\theta},$$

which is strictly increasing in  $\theta$ . Therefore,  $R$  will pick  $\bar{\theta}$  again except that this time she will handicap  $G$  by providing him with fewer resources.

**Proof of Lemma 3.** When  $G$ 's resources are not constrained by loyalty considerations,

the envelope theorem tells us that

$$\frac{dU(m_i^*(\bar{\theta}), \bar{\theta})}{d\bar{\theta}} = \frac{\partial U(m_i^*(\bar{\theta}), \bar{\theta})}{\partial \bar{\theta}} = \frac{m_i^*(\bar{\theta})T}{(\bar{\theta}m_i^*(\bar{\theta}) + T)^2} > 0.$$

Since  $R$ 's payoff when not hiring a general can be represented by the payoff of hiring a general with competence  $\theta = 1$  for whom the constraint is not binding, we conclude that if  $\bar{\theta} < 1$ , then  $R$  strictly prefers not to hire a general than to hire one whose loyalty will not be a problem at the optimal level of resource provision. Since  $R$ 's payoff is strictly smaller when the loyalty constraint binds, this further implies that  $R$  will not want to hire a general at all. This establishes case (i) of the lemma.

If  $\bar{\theta} > 1$ , then  $R$  strictly prefers to hire  $G$  provided that his loyalty will not be a problem. We know, however, that for  $\bar{\theta}$  sufficiently high,  $S(T) > S_i^*(T)$  will obtain, and so  $R$  will be forced to reduce the resources in order to ensure  $G$ 's loyalty. Would she still wish to hire this general? Assume that  $S(T) > S_i^*(T)$  so  $m_i^*(T) = S_i^*(T)/\bar{\theta}$ . Hiring a general yields

$$\frac{S_i^*(T)}{S_i^*(T) + T} - \frac{S_i^*(T)}{\bar{\theta}} > 0,$$

where we can establish the inequality as follows. The inequality holds if, and only if,  $\bar{\theta} > S_i^*(T) + T$ . But since  $S(T) > S_i^*(T)$  here, it follows that  $\sqrt{\bar{\theta}T} > S_i^*(T) + T$ , which reduces to  $\bar{\theta} > (S_i^*(T))^2/T + 2S_i^*(T) + T > S_i^*(T) + T$ . Thus, whenever the loyalty constraint binds,  $R$ 's (constrained) payoff is strictly positive.

Not hiring a general with optimal allocation  $m = \sqrt{T} - T$  (provided  $T < 1$ ) yields

$$\frac{\sqrt{T} - T}{\sqrt{T}} - \sqrt{T} + T = 1 + T - 2\sqrt{T} > 0.$$

Since  $T \geq 1$  means that not hiring yields a payoff of zero (because the optimal allocation is zero), it follows that in all such cases  $R$  strictly prefers to hire a general even if doing so requires  $R$  to impose constraints on him. This establishes case (ii) of the lemma.

Suppose then that  $T < 1$ , so that the payoffs from hiring and not hiring are both positive. We now show that it is possible that  $R$  prefers not to hire at all. Note first that

$$\lim_{c \rightarrow 0} S_i^*(T) = \frac{b_i}{1 - b_i},$$

and since we require that  $S_i^*(T) < S(T)$ , the condition that the constraint is binding will be satisfied for any

$$b_i < \frac{S(T)}{1 + S(T)}.$$

This means that as  $b_i \rightarrow 0$ , the constraint must be binding, and since  $\lim_{b_i \rightarrow 0} b_i/(1 - b_i) = 0$ , we obtain

$$\lim_{c \rightarrow 0, b_i \rightarrow 0} \frac{S_i^*(T)}{S_i^*(T) + T} - \frac{S_i^*(T)}{\bar{\theta}} = 0 < 1 + T - 2\sqrt{T}.$$

In other words, if  $c$  and  $b_i$  are sufficiently small, then it must be the case that  $R$  strictly prefers not to hire. This establishes case (iii) of the lemma.

**Proof of Lemma 4.** It is clear by inspection of (1.2) that  $S_i^*$  is strictly increasing in  $b_i$ . Since  $S(T)$  is constant in  $b_i$ , it follows that  $b^* > 0$  such that  $S_i^*(T) = S(T)$  exists and is unique. If  $\bar{b} \leq b^*$ , then the loyalty constraint is binding, so the military allocation is  $m_i^*(T) = S_i^*(T)/\bar{\theta}$ , which is increasing in  $S_i^*(T)$ . Moreover, since this constrained allocation is less than the unconstrained optimum, it follows that  $R$ 's expected payoff is strictly increasing in  $m_i^*$  as well. In other words, in this case  $R$ 's expected payoff strictly increases in  $b_i$ , which implies that she must pick  $\bar{b}$ . If  $\bar{b} > b^*$ , then the loyalty constraint is no longer binding, so  $R$ 's military allocation is at the unconstrained optimum, which itself is independent of  $b_i$ . In these cases,  $R$  is indifferent among any  $b_i \in (b^*, \bar{b}]$ , as claimed.

**Proof of Lemma 5.** Suppose a coup will occur, so  $R$ 's payoff is

$$U = \left( \frac{m}{1 + \theta m} \right) \left( \frac{q}{m + T_S} + \frac{1 - q}{m + T_L} \right) - m,$$

which is always strictly worse than not hiring a general for any  $m > 0$ . Since  $T_i^*(0, \theta) = 0 < T_S$ , the probability of a coup is zero when  $m = 0$ , which implies that in any subgame where a coup is certain to occur it must be the case that  $m > 0$ , and so  $R$  is strictly better off not hiring a general. In other words, there exists no equilibrium where a coup is certain to occur.

**Proof of Lemma 6.** NO COUP. Suppose there is an equilibrium in which no coups occur regardless of the size of the threat. We know that this requires  $m$  to be such that  $G$  remains loyal under  $T_S$ . It turns out that  $m_i^*(T_S)$  must be the optimal security-preserving allocation under asymmetric information as well. We know that it cannot exceed that level because if it did,  $G$  would execute a coup under  $T_S$ . It also cannot be less than that level because if it did,  $R$ 's payoffs under both  $T_S$  and  $T_L$  (under Assumption 3) would decrease, leading to a decrease in the expected payoff as well. Thus, the best expected payoff that  $R$  can obtain where no coup occurs is

$$U_N(q) = q \left( \frac{\theta m_i^*(T_S)}{\theta m_i^*(T_S) + T_S} \right) + (1 - q) \left( \frac{\theta m_i^*(T_S)}{\theta m_i^*(T_S) + T_L} \right) - m_i^*(T_S).$$

Since  $m_i^*(T_S)$  does not depend on  $q$ ,  $U_N$  is a simple linear function of  $q$ . In particular, since  $T_S < T_L$ , it is strictly increasing

$$\frac{dU_N}{dq} = \frac{\theta m_i^*(T_S)(T_L - T_S)}{(\theta m_i^*(T_S) + T_S)(\theta m_i^*(T_S) + T_L)} > 0.$$

We now show that if  $\theta \leq 1$ , then  $R$  prefers to go it alone when the alternative is hiring a general who would not execute a coup. This follows immediately from the fact that  $\theta < 1 \Rightarrow U_A > U_N$  for any  $m > 0$  and any  $q$ . We can write  $U_A > U_N$  as

$$q [p(m, T_S; 1) - p(m, T_S; \theta)] + (1 - q) [p(m, T_L; 1) - p(m, T_L; \theta)] > 0,$$

so it is sufficient to show that both bracketed terms are positive. Since  $p(m, T; \theta)$  is strictly increasing in  $\theta$ , they are positive when  $\theta < 1$ , so the claim holds. Moreover, since  $\theta \leq T_S$  implies that  $m_i^*(T_S) = 0$ , we obtain  $U_N = 0 < U_A$ , so  $R$  will also prefer to go it alone in this case as well. Thus, the necessary condition for hiring  $G$  in such an equilibrium is  $\theta > \max(1, T_S)$ .

PROBABILISTIC COUP. Suppose there is an equilibrium in which  $G$  executes a coup under  $T_S$  but remains loyal under  $T_L$ . This means that  $T_S < T_i^*(m, \theta) \leq T_L$ . Recalling from Lemma 1 that  $T_i^*$  is increasing in both parameters whenever it is positive (as it must be here), we conclude that the optimal allocation must be some  $m_C \in (m_i^*(T_S), m_i^*(T_L)]$ .

When the coup is probabilistic,  $R$ 's expected payoff is

$$U_C(q) = q \left[ \left( \frac{1}{1 + \theta m} \right) \left( \frac{m}{m + T_S} \right) - m \right] + (1 - q) \left( \frac{\theta m}{\theta m + T_L} - m \right). \quad (1.6)$$

We now show that  $\theta \leq 1 \Rightarrow U_A > U_C$ , so  $R$  will never hire a general that is less competent than herself if she expects the continuation game to involve a probabilistic coup. We can write  $U_A > U_C$  as

$$q[p(m, T_S; 1) - p(1, \theta m; 1)p(m, T_S; 1)] + (1 - q)[p(m, T_L; 1) - p(m, T_L; \theta)] > 0,$$

so it is sufficient to show that both bracketed terms are positive. The first is positive because  $p(1, \theta m; 1) < 1$ , and the second is non-negative if  $\theta \leq 1$  because  $p(m, T; \theta)$  is strictly increasing in  $\theta$ . Moreover,  $\theta \leq T_S < T_L$  implies that  $m_i^*(T_S) = m_i^*(T_L) = 0$ , so there exists no  $m_C$  that will induce a probabilistic coup. In other words, if  $\theta \leq T_S$ , then such an equilibrium does not exist. Thus, the necessary condition for hiring  $G$  in such an equilibrium is also  $\theta > \max(1, T_S)$ .

Since  $R$  will not hire  $G$  with  $\theta \leq 1$ , for the remainder of this proof we shall assume that  $\theta > 1$ . The unconstrained FOC for (1.6) is

$$\begin{aligned} \frac{\partial U_C}{\partial m} &= \frac{q(T_S - \theta m^2)}{(1 + \theta m)^2(m + T_S)^2} + \frac{(1 - q)\theta T_L}{(\theta m + T_L)^2} - 1 \\ &= q \left[ \frac{T_S - \theta m^2}{(1 + \theta m)^2(m + T_S)^2} - \frac{\theta T_L}{(\theta m + T_L)^2} \right] + \frac{\theta T_L}{(\theta m + T_L)^2} - 1 \\ &\equiv q\zeta + \frac{\theta T_L}{(\theta m + T_L)^2} - 1 = 0. \end{aligned} \quad (1.7)$$

Since the derivative is strictly decreasing in  $m$ , it attains a maximum at  $m = 0$ , where it is strictly positive if, and only if,  $qT_L + (1 - q)\theta T_S > 1$ . By Assumption 2 and  $\theta > 1$ , this condition is satisfied, so the fact that  $\lim_{m \rightarrow \infty} \frac{\partial U}{\partial m} = -1$  implies that there exists a unique  $m_C(q) > 0$  for which the FOC is satisfied (i.e., the function is concave). The question now is to ensure that the solution satisfies the constraints.

We begin by showing that  $m_C(q)$  must be decreasing. The implicit function the-

orem tells us that (1.7) implies that

$$\frac{dm_C}{dq} = - \frac{\partial^2 U_C}{\partial m \partial q} \bigg/ \frac{\partial^2 U_C}{\partial m \partial m_C}$$

which then tells us that since

$$\frac{\partial^2 U_C}{\partial m \partial m_C} < 0 \Rightarrow \operatorname{sgn} \left( \frac{dm_C}{dq} \right) = \operatorname{sgn} \left( \frac{\partial^2 U_C}{\partial m \partial q} \right) = \operatorname{sgn}(\zeta) = \operatorname{sgn} \left( 1 - \frac{\theta T_L}{(\theta m + T_L)^2} \right),$$

where the last step also follows from (1.7) and  $q > 0$ . This, of course, yields

$$\operatorname{sgn} \left( 1 - \frac{\theta T_L}{(\theta m + T_L)^2} \right) = -1 \Leftrightarrow m < \sqrt{\frac{T_L}{\theta}} - \frac{T_L}{\theta} \equiv \tilde{m},$$

where the last expression is the unconstrained optimum for the complete-information case under  $T_L$ .

We now show that  $m_C$  can never exceed this value. Consider the payoff in (1.6). The expression in the square brackets (the expected payoff from a coup with  $T_S$ ) is strictly decreasing in  $m$  because

$$\frac{T_S - \theta m^2}{(1 + \theta m)^2 (m + T_S)^2} - 1 < 0$$

obtains. To see this, observe that it is certainly true for any  $T_S - \theta m^2 \leq 0$ . When this expression is positive, we can write the inequality as  $T_S - \theta m^2 < (1 + \theta m)^2 (m + T_S)^2$ , and observe that the left-hand side is strictly decreasing in  $m$  while the right-hand side is strictly increasing. Thus, if the inequality holds at  $m = 0$ , it must hold at  $m > 0$  as well. But at  $m = 0$  the inequality reduces to  $T_S < T_S^2 \Leftrightarrow 1 < T_S$ , which holds by Assumption 2. Thus, the first component in the expected payoff is always strictly decreasing in  $m$ .

The second component of this payoff is, of course, the complete-information payoff without a coup against  $T_L$ , and we know that its unconstrained optimum is  $\tilde{m} = \sqrt{T_L/\theta} - T_L/\theta$ . This immediately tells us that  $m_C < \tilde{m}$ : if this were not so, one could improve the payoff by decreasing  $m_C$  to  $\tilde{m}$  since this will strictly increase both components.

Thus,  $m_C(q) < \tilde{m}$ , which in turn means that  $\operatorname{sgn}(\zeta) = -1$ , and we conclude that  $m_C(q)$  is strictly decreasing.

Observe now that at  $q = 0$ , the payoff in (1.6) is equivalent to the complete-information case under  $T_L$ , which means that  $m_C(0) = m_i^*(T_L) > m_i^*(T_S)$ , where the inequality follows from Assumption 3, so the constraints are satisfied (the general executes a coup if the threat is  $T_S$  but does not if it is  $T_L$ ). Moreover, since  $m_i^*(T_L)$  is the (possibly constrained) optimum against  $T_L$ , it follows that

$$U_C(0) = \frac{\theta m_i^*(T_L)}{\theta m_i^*(T_L) + T_L} - m_i^*(T_L) > \frac{\theta m_i^*(T_S)}{\theta m_i^*(T_S) + T_L} - m_i^*(T_S) = U_N(0),$$

which means that at  $q = 0$ , the ruler must strictly prefer to play the risky strategy by endowing  $G$  with enough resources to meet the large external threat. (Of course, at  $q = 0$ , this risk is zero.)

Consider now what happens as  $q$  increases, in which case we have shown that  $m_C$  must decrease. There are two cases, depending on whether  $m_C(q)$  satisfies the constraints or not.

*Case 1:*  $m_C(q) \geq m_i^*(T_L)$ , which implies that the solution must be constrained at  $m_i^*(T_L)$  (or else  $G$  would execute the coup regardless of the threat size): since the payoff function is concave in  $m$ , it must be increasing for all  $m < m_C(q)$ . Moreover, since  $m_C < \tilde{m}$ , it follows that  $m_C(q) \geq m_i^*(T_L)$  can only obtain when  $m_i^*(T_L)$  is the constrained solution to the complete-information case, which means that  $m_i^*(T_L) = S_i^*(T_L)/\theta$ . For  $U_C$  to be decreasing, it must be the case that

$$\begin{aligned} \frac{dU_C}{dq} &= \frac{\partial U_C}{\partial m_i^*(T_L)} \frac{dm_i^*(T_L)}{dq} + \frac{\partial U_C}{\partial q} = \frac{\partial U_C}{\partial q} \\ &= \frac{m_i^*(T_L)}{(1 + \theta m_i^*(T_L))(m_i^*(T_L) + T_S)} - \frac{\theta m_i^*(T_L)}{\theta m_i^*(T_L) + T_L} < 0, \end{aligned}$$

where the first step follows from the fact that  $\frac{dm_i^*(T_L)}{dq} = 0$  at the constrained solution. Letting  $m \equiv m_i^*(T_L) > 0$  to simplify notation, we can rewrite the inequality above as

$$\frac{1}{(1 + \theta m)(m + T_S)} < \frac{\theta}{\theta m + T_L}, \quad (1.8)$$

Recall that  $m_i^*(T_L)$  is the constrained solution to the complete information case, which means that  $S(T_L) > S_i^*(T_L) > 0$ , which in turn implies that  $S(T_L) > 0$  must be satisfied,

and so  $\theta > T_L$  must obtain. But this now implies that

$$\frac{1}{(1 + \theta m)(m + T_S)} < \frac{1}{(1 + mT_L)(m + T_S)} \quad \text{and} \quad \frac{\theta}{\theta m + T_L} > \frac{T_L}{mT_L + T_L} = \frac{1}{1 + m},$$

so it will be sufficient to show that

$$\frac{1}{(1 + mT_L)(m + T_S)} < \frac{1}{1 + m} \quad \Leftrightarrow \quad 1 + m < (1 + mT_L)(m + T_S),$$

where the last inequality is easily verified because  $mT_L > 0$  and  $T_S > 1$  together imply that  $(1 + mT_L)(m + T_S) > m + T_S > m + 1$ . Thus,  $U_C$  is strictly decreasing in  $q$  for any  $m_C \geq m_i^*(T_L)$ .

Summarizing, start with  $q = 0$ , where the solution is  $m_C = m_i^*(T_L)$ . If  $m_i^*(T_L)$  is the constrained solution to the complete-information case, then it is possible that the solution to (1.7) is actually strictly greater. If this is so, then increasing  $q$  will decrease this solution until at some point it will equal  $m_i^*(T_L)$ : in this interval, the optimal allocation is constant at  $m_i^*(T_L)$ , and the payoff is strictly decreasing. If  $m_i^*(T_L)$  is the unconstrained solution, then the fact that  $m_C(q)$  is decreasing means that the second case applies.

*Case 2:*  $m_C(q) \in [m_i^*(T_S), m_i^*(T_L)]$ . In this region, the constraint that ensures that  $G$  remains loyal under  $T_L$  is no longer binding, and since this means that  $\frac{\partial U_C}{\partial m} = 0$  at the optimum, we can apply the envelope theorem to obtain

$$\begin{aligned} \frac{dU_C}{dq} &= \frac{\partial U_C}{\partial m} \frac{dm}{dq} + \frac{\partial U_C}{\partial q} = \frac{\partial U_C}{\partial q} \\ &= \frac{m_C}{(1 + \theta m_C)(m_C + T_S)} - \frac{\theta m_C}{\theta m_C + T_L} < 0, \end{aligned}$$

where we can establish this inequality as follows. If  $m_i^*(T_L)$  is the constrained solution to the complete-information case, then  $\theta > T_L$  must obtain, and the argument following (1.8) applies. If, on the other hand,  $m_i^*(T_L)$  is the unconstrained solution to the complete-information case, then we argue as follows. Loosely, since the first component of the payoff in (1.6) is strictly decreasing in  $m$  while the second one is strictly increasing, putting more weight on the first component decreases  $m_C$  (we showed this already),

which in turn decreases  $U_C$ . We need to show that

$$\frac{m_C}{(1 + \theta m_C)(m_C + T_S)} - m < \frac{\theta m_C}{\theta m_C + T_L} - m.$$

Recall that the left-hand side is strictly decreasing in  $m$  and we know that the right-hand side is strictly increasing because  $m_C$  is smaller than the unconstrained optimum of the complete-information case under  $T_L$ . But since at  $m = 0$  both sides are zero, the inequality must obtain for any  $m > 0$  in this region. In other words,  $U_C$  is strictly decreasing here as well. Note in particular that this also covers the cases where  $m_C(q) < m_i^*(T_S)$ , but this cannot occur because in that case  $G$  will not execute a coup at  $T_S$ , and if the solution to (1.7) is that small,  $R$ 's optimal choice is to optimize the “no-coup” scenario.

We conclude that the optimal payoff,  $U_C(m_C(q))$ , is strictly decreasing in  $q$  (it is clearly continuous).

Finally, we show that at  $q = 1$ , the ruler prefers to play the riskless strategy:

$$U_C(1) = \frac{\tilde{m}}{(1 + \theta \tilde{m})(\tilde{m} + T_S)} - \tilde{m} < \frac{\theta m_i^*(T_S)}{\theta m_i^*(T_S) + T_S} - m_i^*(T_S) = U_N(1),$$

where the inequality follows from

$$\frac{\tilde{m}}{(1 + \theta \tilde{m})(\tilde{m} + T_S)} - \tilde{m} < \frac{\tilde{m}}{\tilde{m} + T_S} - \tilde{m} < \frac{\theta \tilde{m}}{\theta \tilde{m} + T_S} - \tilde{m} \leq \frac{\theta m_i^*(T_S)}{\theta m_i^*(T_S) + T_S} - m_i^*(T_S),$$

where the last inequality follows from  $m_i^*(T_S)$  being the optimizer under complete information.

We have now established that  $U_C(0) > U_N(0)$ ,  $U_C(1) < U_N(1)$ , that  $U_N$  is strictly increasing while  $U_C$  is strictly decreasing. Since both functions are continuous, it follows that there exists precisely one intersection, at some  $q^* \in (0, 1)$ , such that  $R$  strictly prefers the risky strategy for all  $q < q^*$ , and strictly prefers the riskless one for all  $q > q^*$ .

Since  $\theta > 1$  makes hiring a general strictly preferable to not hiring one as long as the probability of a coup is zero, it follows that with  $\theta > 1$   $R$  will always hire a general (if  $R$  prefers the risky strategy to the one that ensures that no coup takes place, then she must prefer it to not hiring  $G$  as well). Conversely,  $\theta < 1$  ensures that  $R$  does not hire

anyone.

The final claims of the lemma follow immediately: if  $m_C(q) < m_i^*(T_L)$  when the risky strategy is chosen, the allocation obviously falls short of the optimum to deal with the large threat.<sup>9</sup> Since  $m_i^*(T_S) < m_i^*(T_L)$ , the same is certainly true under the safe strategy.

**Proof of Lemma 7.** We establish this result by showing that both  $U_N$  and  $U_C$  are increasing in  $\theta$  regardless of the value of  $q$ .

Consider  $U_N$  first and start with  $\theta$  sufficiently small so that  $\sqrt{\theta T_S} - T_S \leq S_i^*(T_S)$ ; that is, any  $\theta$  that makes the complete-information constraint not binding against  $T_S$  so that  $m_i^*(T_S) = \max(0, \sqrt{T_S/\theta} - T_S/\theta)$ . If  $\theta \leq T_S$ , then  $m_i^*(T_S) = 0$ , and  $U_N = 0$  for any such  $\theta$ . (This means that  $R$  will rather go it alone than a hire a general even when doing so means no coup will occur.) If, on the other hand,  $\theta > T_S$ , then  $\theta m_i^*(T_S) = \sqrt{\theta T_S} - T_S > 0$ , so we can write

$$U_N = q \left( 1 - \sqrt{\frac{T_S}{\theta}} \right) + (1 - q) \left( \frac{\sqrt{\theta T_S} - T_S}{\sqrt{\theta T_S} - T_S + T_L} \right) - \sqrt{\frac{T_S}{\theta}} + \frac{T_S}{\theta}.$$

Taking the derivative with respect to  $\theta$  and setting it greater than zero yields, after some algebra,

$$q + (1 - q) \left[ \frac{\theta T_L}{(\sqrt{\theta T_S} - T_S + T_L)^2} \right] + 1 > 2\sqrt{\frac{T_S}{\theta}}.$$

Since  $\theta > T_S \Rightarrow \sqrt{T_S/\theta} < 1$ , this inequality will hold whenever

$$q + (1 - q) \left[ \frac{\theta T_L}{(\sqrt{\theta T_S} - T_S + T_L)^2} \right] > \sqrt{\frac{T_S}{\theta}}$$

obtains. But since the left-hand side is a linear combination of 1 and the bracketed term, the fact that  $\sqrt{T_S/\theta} < 1$  further tells us that this inequality will hold whenever

$$\frac{\theta T_L}{(\sqrt{\theta T_S} - T_S + T_L)^2} > \sqrt{\frac{T_S}{\theta}},$$

<sup>9</sup>For example, this happens when  $b_i = 0.2$ ,  $c = 0.3$ ,  $\theta = 20$ ,  $T_S = 1$ , and  $T_L = 7$ . In this case  $q^* \approx 0.055$ , while  $m_C(q) < m_i^*(T_L)$  for all  $q > 0.005$ .

obtains, which we can establish as follows. Taking the derivative of the left-hand side with respect to  $T_L$  yields

$$\frac{\theta (\sqrt{\theta T_S} - T_S + T_L)}{(\sqrt{\theta T_S} - T_S + T_L)^3} > 0,$$

and since this means that it is strictly increasing, it is sufficient to establish the inequality for the smallest value  $T_L$  can hold; that is, it is sufficient to establish the inequality for  $T_L = T_S$ . But in this case, the left-hand side reduces to 1, and we already know that  $1 > \sqrt{T_S/\theta}$ . Thus, we conclude that  $U_N$  is strictly increasing in  $\theta$  whenever the optimal complete-information allocation is unconstrained and positive.

Consider now  $\theta$  high enough so that  $\sqrt{\theta T_S} - T_S > S_i^*(T_S)$ ; that is, any  $\theta$  that makes the complete-information constraint binding against  $T_S$  so that  $m_i^*(T_S) = S_i^*(T_S)/\theta$ . Since  $S_i^*(T_S)$  is constant in  $\theta$ , the inequality will be preserved for any larger  $\theta$  as well. But now we obtain  $\theta m_i^*(T_S) = S_i^*(T_S)$ , so we can write

$$U_N = \frac{qS_i^*(T_S)}{S_i^*(T_S) + T_S} + \frac{(1-q)S_i^*(T_S)}{S_i^*(T_S) + T_L} - \frac{S_i^*(T_S)}{\theta}, \quad (1.9)$$

which is clearly increasing in  $\theta$ . Thus, once  $\theta$  is high enough that the complete-information constraint binds, increasing it further will only increase  $U_N$  as well (since the constraint will continue to bind).

Let us now establish the equivalent claim for  $U_C$ . We have two cases to consider.

*Case 1:*  $m_C = m_i^*(T_L)$ , which we recall from the proof of Lemma 6 further means that  $m_C = S_i^*(T_L)/\theta$ . Substituting this into (1.6) yields

$$U_C = \left( \frac{q}{1 + S_i^*(T_L)} \right) \left( \frac{S_i^*(T_L)}{S_i^*(T_L) + \theta T_S} \right) + \frac{(1-q)S_i^*(T_L)}{S_i^*(T_L) + T_L} - \frac{S_i^*(T_L)}{\theta}, \quad (1.10)$$

from which we obtain

$$\frac{dU_C}{d\theta} = \frac{S_i^*(T_L)}{\theta^2} - \frac{qT_S S_i^*(T_L)}{(1 + S_i^*(T_L))(S_i^*(T_L) + \theta T_S)^2} > 0,$$

where the inequality can be established with simple algebra. Thus,  $U_C$  is strictly increasing in  $\theta$  whenever  $m_C$  is the constrained solution.

*Case 2:*  $m_C$  is the unconstrained optimizer so the FOC is satisfied:  $\frac{\partial U_C}{\partial m} = 0$  at

the optimum. We can simply apply the envelope theorem to obtain

$$\frac{dU_C}{d\theta} = \frac{\partial U_C}{\partial m} \frac{dm}{d\theta} + \frac{\partial U_C}{\partial \theta} = \frac{\partial U_C}{\partial \theta} = m_C \left[ \frac{(1-q)T_L}{(\theta m_C + T_L)^2} - \frac{q m_C}{(m_C + T_S)(1 + \theta m_C)^2} \right],$$

which tells us that  $U_C$  must be increasing in  $\theta$  if

$$\frac{(1-q)T_L}{(\theta m_C + T_L)^2} > \frac{q m_C}{(m_C + T_S)(1 + \theta m_C)^2}. \quad (1.11)$$

Since (1.7) is satisfied, we know that

$$\frac{(1-q)T_L}{(\theta m_C + T_L)^2} = \left( \frac{1}{\theta} \right) \left[ 1 - \frac{q(T_S - \theta m_C^2)}{(m_C + T_S)^2(1 + \theta m_C)^2} \right].$$

We substitute this into (1.11) and after some algebra reduce that inequality to

$$(m_C + T_S)^2(1 + \theta m_C) > q T_S,$$

which clearly holds:  $(m_C + T_S)^2(1 + \theta m_C) > (m_C + T_S)^2 > m_C + T_S > T_S > q T_S$ . Thus, if  $m_C$  is the unconstrained optimizer,  $U_C$  is strictly increasing in  $\theta$ .

**Proof of Lemma 8.** We shall establish this result by showing that both  $U_N$  and  $U_C$  are either constant in  $b_i$  or strictly increasing.

We begin with  $U_N$ . If  $m_i^*(T_S)$  is the unconstrained complete-information optimum, then it is independent of  $b_i$ , and so  $U_N$  itself is constant in  $b_i$ . If  $m_i^*(T_S) = S_i^*(T_S)/\bar{\theta}$ , on the other hand, then the allocation is strictly increasing in  $b_i$  because  $S_i^*(T_S)$  does. The payoff in this case is given by (1.9). Since

$$\frac{dU_N}{db_i} = \frac{\partial U_N}{\partial S_i^*} \frac{dS_i^*}{db_i} + \frac{\partial U_N}{\partial b_i}$$

but  $\frac{\partial U_N}{\partial b_i} = 0$  and  $\frac{dS_i^*}{db_i} > 0$ , it follows that

$$\text{sgn} \left( \frac{dU_N}{db_i} \right) = \text{sgn} \left( \frac{\partial U_N}{\partial S_i^*} \right).$$

Thus, we need to show that

$$\frac{\partial U_N}{\partial S_i^*} = \frac{qT_S}{(S_i^*(T_S) + T_S)^2} + \frac{(1-q)T_L}{(S_i^*(T_S) + T_L)^2} - \frac{1}{\bar{\theta}} > 0.$$

We are going to split the proof in two cases. First, suppose that  $S_i^*(T_S) < \sqrt{T_S T_L}$ , which implies that  $T_S (S_i^*(T_S) + T_L)^2 > T_L (S_i^*(T_S) + T_S)^2$ . We can rewrite the condition on the derivative as

$$\bar{\theta} > \frac{(S_i^*(T_S) + T_S)^2 (S_i^*(T_S) + T_L)^2}{qT_S (S_i^*(T_S) + T_L)^2 + (1-q)T_L (S_i^*(T_S) + T_S)^2} \equiv \underline{\theta}.$$

By Assumption 3,  $\bar{\theta} > (\sqrt{T_S} + \sqrt{T_L})^2$ , so it suffices to show that  $(\sqrt{T_S} + \sqrt{T_L})^2 > \underline{\theta}$ . But since  $S_i^*(T_S) < \sqrt{T_S T_L}$ , it follows that

$$\underline{\theta} < \frac{(S_i^*(T_S) + T_S)^2 (S_i^*(T_S) + T_L)^2}{T_L (S_i^*(T_S) + T_S)^2} = \frac{(S_i^*(T_S) + T_L)^2}{T_L},$$

so we only need to show that

$$\left(\sqrt{T_S} + \sqrt{T_L}\right)^2 > \frac{(S_i^*(T_S) + T_L)^2}{T_L} \Leftrightarrow S_i^*(T_S) < \sqrt{T_S T_L}.$$

Since the last inequality is true by supposition, the claim holds.

Turning now to the other possibility, suppose that  $S_i^*(T_S) > \sqrt{T_S T_L}$ , which implies that  $T_S (S_i^*(T_S) + T_L)^2 < T_L (S_i^*(T_S) + T_S)^2$ . Recall that  $m_i^*(T_S)$  is the binding allocation, which means that  $S(T_S) > S_i^*(T_S)$ , which implies that

$$\bar{\theta} > \frac{(S_i^*(T_S) + T_S)^2}{T_S}.$$

But this now means that

$$\frac{\partial U_N}{\partial S_i^*} > \frac{(1-q)T_L}{(S_i^*(T_S) + T_L)^2} - \frac{(1-q)T_S}{(S_i^*(T_S) + T_S)^2},$$

so it suffices to show that

$$\frac{T_L}{(S_i^*(T_S) + T_L)^2} > \frac{T_S}{(S_i^*(T_S) + T_S)^2} \Leftrightarrow S_i^*(T_S) > \sqrt{T_S T_L}.$$

Since the last inequality is true by supposition, the claim holds. Thus,  $U_N$  is non-decreasing in  $b_i$ .

Consider now  $U_C$ . If  $m_C$  is the unconstrained optimizer, then  $\left. \frac{\partial U_C}{\partial m} \right|_{m_C} = 0$ . The envelope theorem then tells us that

$$\frac{dU_C}{db_i} = \left. \frac{\partial U_C}{\partial m} \frac{dm}{db_i} \right|_{m_C} + \frac{\partial U_C}{\partial b_i} = \frac{\partial U_C}{\partial b_i} = 0,$$

which means that  $U_C$  is independent of  $b_i$  in this case.

If, on the other hand,  $m_C$  is the constrained optimizer, then  $\left. \frac{\partial U_C}{\partial m} \right|_{m_C} > 0$  and  $m_C = m_i^*(T_L) = S_i^*(T_L)/\theta$ . Since  $\left. \frac{\partial U_C}{\partial b_i} \right|_{m_C} = 0$ , we obtain

$$\frac{dU_C}{db_i} = \left. \frac{\partial U_C}{\partial m} \frac{dm}{db_i} \right|_{m_C} > 0,$$

where the inequality follows from  $\left. \frac{dm}{db_i} \right|_{m_C} = \left( \frac{dS_i^*}{db_i} \right) / \theta > 0$  and  $\left. \frac{\partial U_C}{\partial m} \right|_{m_C} > 0$ . Thus,  $U_C$  is non-decreasing in  $b_i$  as well.

We conclude that the payoffs are strictly increasing whenever  $m_i^*(T_S) = S_i^*(T_S)/\bar{\theta}$  (in the riskless subgame) or  $m_i^*(T_L) = S_i^*(T_L)/\bar{\theta}$  (in the risky subgame) are the constrained optima under complete information.

Recall that  $S_i^*$  itself is increasing in  $b_i$ , that  $S(T)$  is independent of  $b_i$ , that  $S_i^*(T_S) < S_i^*(T_L)$ , and that  $S(T_S) < S(T_L)$  under Assumption 3. Consider now very low values of  $b_i$  (and possibly  $c$ ) such that the loyalty constraint binds in both cases:  $S_i^*(T) < S(T)$  for  $T \in \{T_S, T_L\}$ . In other words, consider  $b_i < b_1$ .<sup>10</sup> The results above indicate that  $R$ 's payoff from both  $U_N$  or  $U_C$  is strictly increasing in  $b_i$ , so she must pick the highest such  $b_i$  that still ensures that the constraints obtain. If  $\bar{b} \leq b_1$ , then  $R$  must select from the

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<sup>10</sup> $b^*(T)$  can be concave or strictly decreasing in  $T$ , depending on the values of  $c$ , which is why we cannot say which constraint will be relaxed first in general.

most privileged group regardless of  $q$ .

If  $\bar{b} \in (b_1, b_2)$ , then at least one of the constraints will cease to be binding. The corresponding payoff will now be constant in  $b_i$  whereas the other one will continue to increase. If  $b_1 = b^*(T_S)$ , then the constraint that affects  $U_N$  will no longer bind.  $R$  is now indifferent among any  $b_i \in [b_1, \bar{b}]$  when the equilibrium outcome is riskless, which we know to be the case for any  $q > q^*$ . On the other hand, since  $b_1 = b^*(T_S)$  implies that  $b_2 = b^*(T_L)$ , it follows that  $\bar{b} < b^*(T_L)$ , so the constraint is still binding for the risky continuation game. Since  $U_C$  is strictly increasing in  $b_i$ ,  $R$  must strictly prefer to pick  $\bar{b}$  for any  $q \leq q^*$ . The situation where  $b_1 = b^*(T_L)$  is analogous, *mutatis mutandis*.

Finally, if  $\bar{b} \geq b_2$ , then the constraints are not binding in either continuation game, so  $R$  must be indifferent among any  $b_i \in [b_2, \bar{b}]$  regardless of  $q$ .

## 1.10 Appendix B: Iraqi Senior Military Leadership from 1987/88

### 1. Saddam Hussein

- Rank: Field Marshall
- Post: Commander in chief of the armed forces (Bengio 1989, 455; Bengio 1990, 537).
- POST WAR: Survived and continued in position.

### 2. ‘Adnan Khayrallah Talfah

- Rank: General
- Post: Defense minister (Bengio 1989, 455; Bengio 1990, 537).
- POST WAR: Died in a helicopter accident in May 1989 while still defense minister. Opponents say that the circumstances of his death are suspicious (Dougherty and Ghareeb 2013, 367).

### 3. ‘Abd al-Jabbar Shanshal

- Rank: General
  - Post: Minister of state for military affairs (Bengio 1989, 455; Bengio 1990, 537).
  - Post: Defense minister (Bengio 1992, 420).
  - POST WAR: Became minister of defense upon death of Khayrallah (1989-1990) (Woods et al. 2011, 41).
4. Nazir ‘Abd al-Karim al-Khazraji
- Rank: Lt. General
  - Post: Chief of staff (Rai 2002, 89; Bengio 1989, 455).
  - POST WAR: Was chief of staff through 1991 (Rai 2002, 89).
5. Sa’di Tu’ma ‘Abbas al Jaburi
- Rank: Lt. General
  - Post: Armed Forces assistant chief of staff for training (Bengio 1989, 455; Bengio 1990, 537)
  - Post: Commander of the 1st Special Army Corps (“Allah Akbar Forces”)
  - POST WAR: Replaced General Shansal as defense minister in December 1990 (Bengio 1992, 420).
6. Thabit Sultan al-Hajj Ahmad
- Rank: Lt. General
  - Post: Armed Forces assistant chief of staff for operations (Bengio 1989, 455; Bengio 1990, 537).
  - POST WAR: Held his position through at least 1990 (Bengio 1992, 420).
7. ‘Abd al-Sattar (Ahmad) al-Ma’ini
- Rank: Lt. General

- Post: Armed Forces assistant chief of staff for administration and supplies (Bengio 1989, 455).
- POST WAR: Held position through at least 1990 (Bengio 1992, 420).

8. Iyad Fatih Khalifa al-Rawi

- Rank: Major General
- Post: Commander of the Presidential Guard Forces (Bengio 1989, 455; Bengio 1990, 537).
- POST WAR: Held his position at least through 1990 (Bengio 1992, 420). Was the commander of the Fedayeen Saddam leading up to the 2003 invasion (Otterman 2003).

9. ‘Abd al-Jabbar Muhsin

- Rank: Major General
- Post: Head of political guidance in the Defense Ministry (Bengio 1989, 455; Bengio 1990, 537).
- POST WAR: Served as spokesman for Saddam Hussein (Dougherty and Ghareeb 2013, 431).

10. Husayn Kamil al-Majid

- Rank: Colonel
- Post: Supervisor of military industries (Bengio 1989, 455; Bengio 1990, 537).
- POST WAR: Minister of industry and military industrialization (1988-1991). Minister of defense (1991). Minister of industry and materials (1993-1995). He was also minister of oil (1990-1991) (Dougherty and Ghareeb 2013, 358).

11. Sabir ‘Abd al-’Aziz Husayn al-Duri

- Rank: Major General

- Post: Head of military intelligence (Bengio 1990, 537).
- POST WAR: Still head of military intelligence in 1990 (Bengio 1992, 420).

#### 12. Sabah Mirza

- Rank: Lt. General
- Post: Head of president's bodyguard unit (Bengio 1989, 455; Bengio 1990, 537).
- POST WAR: Pensioned off in 1990 (Henderson 1991, 251).

#### 13. Hamid Sha'ban al-Tikriti [Khudayr]

- Rank: Lt. General
- Post: Air Force and air defense commander (Bengio 1989, 455; Bengio 1990, 537).
- POST WAR: Continued as commander of the air force into the 1990s. Was suspected of involvement with an attempted coup by the Special Republican Guard in June 1996, but was released (al-Marashi and Salama 2008, 188).

#### 14. 'Abd Muhammad 'Abdallah

- Rank: Major General
- Post: Commander of Naval and Coastal Defense Forces (Bengio 1989, 455).
- POST WAR: Was minister of agriculture and irrigation in 1991 (Litvak 1993, 444).

#### 15. Gha'ib Hassun Gha'ib

- Rank: Brig. General
- Post: Commander of the Naval and Coastal Defense Forces (Bengio 1990, 537).
- POST WAR: Held position at least through 1990 (Bengio 1992, 420).

#### 16. Kamal Jamil 'Abbud

- Rank: Lt. General
- Post: Commander of the I Special Army Corps (“Allah Akbar Forces”) (Bengio 1989, 455).
- POST WAR: UNKNOWN

17. Husayn Rashid [al-Windawi][al-Tikriti]

- Rank: Lt. General
- Post: Commander of the I Army Corps (Bengio 1989, 455).
- Post: Armed forces chief of staff for operations (Bengio 1990, 537).
- POST WAR: Was made military chief of staff in aftermath of Second Persian Gulf War in 1991 (Hiro 2003, 54).

18. Shawkat Ahmad ‘Ata

- Rank: Lt. General
- Post: Commander of the II Army Corps (Bengio 1989, 455).
- POST WAR: UNKNOWN

19. Kamil Sajit ‘Aziz

- Rank: Major General
- Post: Commander of the II Army Corps (Bengio 1990, 537).
- POST WAR: Continued to serve in the military. Was executed by Hussein in connection with a coup attempt in late 1998 or 1999 after Operation Desert Fox (Hiro 2003, 167).

20. Diya al-Din Jamal

- Rank: Maj. General
- Post: Commander of the III Army Corps (Bengio 1989, 455).
- POST WAR: UNKNOWN

## 21. Salah 'Abbud Mahmud

- Rank: Maj. General
- Post: Commander of the III Army Corps (Bengio 1990, 537).
- POST WAR: Held position at least through 1990 (Bengio 1992, 420).

## 22. Muhammad 'Abd al-Qadir

- Rank: Major General
- Post: Commander of the IV Army Corps (Bengio 1989, 455).
- POST WAR: Was promoted to assistant army chief of staff at some point before being made governor of Ninwa, where he was serving by at least 2000 (Bengio 2002, 276).

## 23. Iyad Khalil Zaki

- Rank: Major General
- Post: Commander of the IV Army Corps (Bengio 1990, 537).
- POST WAR: Held position at least through 1990 (Bengio 1992, 420). Was made assistant chief of staff for supply before becoming governor of Muthanna in 2000 (Bengio 2002, 276).

## 24. 'Abd al-'Aziz Ibrahim al-Hadithi

- Rank: Major General
- Post: Commander of the V Army Corps (Bengio 1989, 455).
- POST WAR: He was killed in action while fighting in northern Iraq during January 1988 (Bengio 1990, 537).

## 25. Yunis Muhammad al-Dhirib (aka al-Zareb)

- Rank: Major General
- Post: Commander of the V Army Corps (Bengio 1990, 537).

- POST WAR: UNKNOWN

26. Sultan [Qasim] Hashim Ahmad

- Rank: Major General
- Post: Commander of the VI Army Corps (Bengio 1989, 455).
- Post: Commander of the I Army Corps (Bengio 1990, 537).
- POST WAR: Eventually promoted to Lt. General Armed Forces assistant chief of staff for operations. Was the defense minister of Iraq leading up to the 2003 invasion (Burns 2007).

27. Yaljin ‘Umar ‘Adil

- Rank: Major General
- Post: Commander of the VI Army Corps (Bengio 1990, 537).
- POST WAR: Held position through at least 1990 (Bengio 1992, 420).

28. Mahir ‘Abd al-Rashid

- Rank: Lt. General
- Post: Commander of the VII Corps (Bengio 1989, 455; Bengio 1990, 537).
- POST WAR: He was Qusay Husayn’s father-in-law. Forced into retirement following end of Iran-Iraq War. He was eventually recalled to help suppress Shi’a uprising in 1991, but his role in this is not entirely clear (Woods et al. 2008, 80).

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## **Chapter 2**

# **Circling the Wagons: Civil-Military Relations and International Disputes**

## 2.1 Abstract

Do rulers run greater risks abroad in order to improve security at home? I develop and test a theory of regime security in which international outcomes are endogenous to concerns about military coups d'état. The model identifies a "Circling of the Wagons" effect, in which militaries are more willing to remain loyal when external threats to the government loom large. Rulers can therefore reduce the military's desire to launch a coup by adopting aggressive positions internationally, but doing so has other implications that governments would like to avoid. When there is complete information about the international threat environment, it is instead preferable to control the armed forces using institutional levers that limit the military's power to act and increase its benefits for loyalty, and which do not require the regime to contend with more imposing external threats. However, where rulers are uncertain about the threat environment — a common occurrence where civil-military relations are strained — the use of these institutional levers becomes more complicated, since regimes may be unable to fashion a response that preserves the military's loyalty while also ensuring an adequate defense against the threat. Fanning the flames of war can be useful in this context, since it helps to resolve the information problem. I find support for the theory in survival analysis of disputatious dyads between 1950 and 2001. Engaging in especially informative disputes resolves uncertainty that may exist about the threat environment, leading regimes in coup-prone states to behave less aggressively in subsequent periods. This result has important implications for the study of international conflict. While existing research on crisis behavior focuses on the role of uncertainty *between* states as a precipitator of conflict, informational asymmetries *within* states' civil-military relations can also increase the risk of militarized confrontations.

## 2.2 Introduction

Among irregular causes of regime change, coups d'état are the greatest threat to political survival in the international system. In the last 64 years alone, at least 471 coups have targeted states' political leadership (Powell and Thyne 2010). The vast majority of

these coups are launched by militaries, creating an unfortunate irony in which the forces that are supposed to protect rulers instead endanger them. Since failing to create an armed force would expose regimes to external foes, most rulers are forced to run the risk of military disloyalty on some level. Fortunately for these political leaders, their regimes possess access to a variety of policy prerogatives that can be used to manage the armed forces, levers that are the main focus of the literature on civil-military relations. One lever that remains relatively unexplored, however, involves the most fundamental element of civil-military politics: the threat environment itself. If the risk of a coup is tied to external threats, then managing relationships with opponents is likely to be crucial for rulers who seek regime security. *How do concerns about civil-military loyalty at home influence the risks that states run abroad?*

At first glance, the relationship between the risk of a coup and behavior toward external threats could go both ways, either leading rulers to adopt more aggressive actions or, instead, to pursue more pacific and accommodating relations. Playing it safe by eschewing international entanglements may be advisable because rulers can save resources that would otherwise be needed for defense while avoiding the need to strengthen the military, a key competitor for political power. In this light, a large literature in civil-military relations offers a cautionary view on powerful militaries (Finer 1988; Nordlinger 1977). Alternatively, external threats may induce loyalty, encouraging nervous leaders to behave aggressively in order to stave off the risk of a coup (McMahon and Slantchev 2015). This is the conclusion of many studies of diversionary war, which trace political unrest within states to the initiation of disputes against foreign opponents (Levy 1988; Miller and Elgün 2011). Most of the theoretical work on this topic, however, focuses on the relationship between dispute initiation and popular unrest rather than coups, making it difficult to understand the mechanisms connecting the potential breakdown of civil-military relations to international behavior.

In this study, I develop a basic theoretical model of the relationship between potentially disloyal military elites and survival-seeking political leaders. The model reveals that external threats do induce loyalty among the armed forces. This *Circling of the Wagons* effect is due to the dual challenge facing potentially disloyal military forces, which must both successfully overthrow the regime and survive external threats in order to con-

trol the state. Where threats are sufficiently grave, militaries prefer to remain loyal rather than undertake the risks and assume the costs associated with a coup. However, while rulers who fear a coup may sometimes adopt aggressive behavior, this choice depends on the information they possess about the threat environment. As long as rulers are certain about the nature of the threats faced by their regime, they prefer to deal with the risk of a coup using institutional levers, most notably the control of military resources and the appointment of certain types of military leaders, instead of aggression. Rulers who possess complete information about the threat environment do not undertake aggressive actions against opponents because doing so is either unnecessary if the state is already facing a large threat, or costly if the state must deal with a more menacing external threat than it would otherwise.

Unfortunately for rulers, informational asymmetries are common in civil-military relations. Because militaries are designed to assess and combat the state's enemies, these forces have better access to information about the relative capabilities and resolve of opponents. While militaries often share this information with political leaders, strategic assessments can become absent or distorted when political and military elites are at odds (Brooks 2008). The use of institutional levers becomes more difficult in this context, since rulers are uncertain about the threat environment. If rulers overestimate the size of the threat, they will make the military too powerful. While this helps in defense against external foes, the military is prone to disloyalty. Alternatively, when rulers underestimate the threat, they will field a less powerful military, thereby ensuring the loyalty of these armed forces, but leaving the regime exposed to the external threat. In this context, control over the size of the threat itself is crucial for rulers, since, at some point, the risk of dealing with an elevated threat without the proper resources becomes too great. When the threat level is elevated with sufficient probability, the ruler prefers to make certain that the threat is large, as one could through behaving aggressively toward potential opponents. This ensures both protection against a coup and the proper resources for defense against the external threat.

Predictions derived from the theory are tested on a sample comprised of disputatious dyads from 1950 through 2001. Hazards model analysis reveals that among states with a recent history of coups d'état — where rulers are most likely to be con-

cerned with the military's loyalty — the information provided by engaging in costly or decisive disputes has an especially strong and pacifying influence on the likelihood of subsequent contests. In other words, these coup-prone regimes become less aggressive as more information is revealed about the threat environment. It is possible, however, that this finding is due to some other consequence of fighting. Warfare can leave states exhausted, and can lead to flux in political, social, and economic institutions, all of which have an impact on foreign policymaking. In order to account for this possibility, I look at information provided to states indirectly via recent disputes between their opponents and third-parties. The results suggest that coup-prone regimes are less likely to initiate a dispute against an opponent if that foe has recently engaged in costly conflicts against other states. This finding strongly supports the informational story outlined in the theory, since regimes that have recently experienced coups are less likely to behave aggressively after learning about a potential foe, even if 1) the polity does not face the consequences of direct involvement in conflict and 2) its opponent suffers.

The theory is potentially applicable to threats involving foreign or domestic adversaries. However, I focus on testing the theory in the context of international disputes in order to highlight some of the key implications of the model. In particular, numerous studies of war and peace point to incomplete information as a key cause of conflict in the international system (Fearon 1995; Wagner 2000). With few exceptions, however, these studies focus on the informational asymmetries that exist *between* states, rather than those *within* states.<sup>1</sup> I use the model to identify a mechanism through which uncertainty in the context of coup risk drives bellicose foreign policy. Civil-military strife creates conditions under which rulers are both less likely to receive accurate strategic assessments and more willing to compensate for uncertainty about threats with aggression.

By linking external and internal sources of insecurity, the project also develops crucial insights for policy. A number of states that are troubled by contentious civil-military affairs also face challenges from external threats. These states include Pakistan, in which the potential for a coup is especially worrisome given the state's possession of nuclear weapons; Egypt, where military involvement in governance has often slowed the development of democratic institutions; and Afghanistan, a country that has an increas-

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<sup>1</sup>See Tarar (2006).

ingly strong security apparatus but weak political institutions.

## 2.3 External Threats and Military Loyalty

External threats — meaning those that originate from outside of the government — are thought to be a double-edged sword for many political leaders. The possibility of challenges from foreign militaries, rebel groups, and popular uprisings generates a demand for a coercive force capable of protecting the regime. In developing such a force, however, rulers create a new challenger for political power, one that is well-equipped to impose its own will on the regime.<sup>2</sup> For many rulers, the medicine has proven worse than the disease it is intended to treat. Between 1918 and 2004, 130 political leaders lost power due to civil war, foreign imposed regime change, or popular unrest, while 260 were deposed in a military-led coup d'état (Goemans, Gleditsch and Chiozza 2009).

External threats and military loyalty are inextricably linked. However, the precise nature of this relationship is a matter of debate. Some scholars argue that grave external threats imperil rulers. Because larger threats necessitate more powerful militaries, civil-military relations are put under greater pressure in states facing severe threats. This is a key, if often unstated, assumption in some of the most influential works on civil-military politics (Huntington 1957; Finer 1988). It is also the basis of a recent study of the Iran-Iraq War by Talmadge (2013), who argues that rulers like Saddam Hussein who are seriously concerned about losing to external threats are willing to empower their militaries, even if this increases the risk of a coup. In this context, smaller threats are more desirable for regimes, since they are easier to defend against, and do not require rulers to cede additional power to the armed forces.

Yet these studies fail to account for the effect that the threat has on the military's incentives to defect. The same threats that generate a demand for military forces may also help keep those forces loyal to the regime. Desch (1999) contends that this dynamic depends on the type of threat faced by the regime. Domestic threats lead to a breakdown of

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<sup>2</sup>Some states are able to forgo militaries altogether. Kiribati and Vanuatu, for example, are protected by water, while others like Costa Rica outsource their defense to a patron (Lake 2009). However, these are the exceptions. The dictates of regime security in most places create a demand for an indigenous force capable of providing a defense against threats.

civil-military comity, while foreign threats improve these relations. Staniland (2008) offers an even more nuanced perspective, suggesting that the extent of civilian control over the military depends on the institutionalization and legitimacy of the regime. McMahon and Slantchev (2015) abstract away from these institutional dynamics and the source of the threat to develop a model of the fundamental relationship between the threat environment and military loyalty. While large external threats do increase the demand for more powerful armed forces, the military is less willing to launch a coup when the state faces a strong opponent. The military can therefore be made stronger without triggering a coup as the external threat grows more severe. In this context, the political leadership is able to control the flow of resources to the armed forces and manage their attributes such that the military always remains loyal. The ruler's actions are, however, complicated by uncertainty about the threat environment, since it is harder to allocate the appropriate amount of resources when the regime's need for defense and the military's willingness to remain loyal are unclear.

While the decisions of rulers are undoubtedly driven by the nature of the threat environment, these leaders can also exert some control over the severity of the threats facing the state. While this possibility is not explored in the McMahon and Slantchev (2015) study, the loyalty-inducing effect they identify suggests that rulers may sometimes have incentive to generate or exacerbate threats in order to consolidate their hold on power. In other words, rulers may sometimes run risks in the external domain in order to hedge against the risk of military disloyalty. The idea that internal problems can lead to external aggression is not new. In particular, studies of diversionary war trace political instability to the initiation of disputes (Oakes 2006; Levy 1988). While this literature focuses primarily on the risk of losing power due to popular unrest, a few empirically-focused studies do demonstrate a significant, positive relationship between the risk of a coup and the likelihood of dispute initiation (Miller and Elgün 2011; Powell 2014; Belkin 2005).

Despite the robustness of these findings, the mechanism connecting coup risk to aggressive behavior remains unclear. The two primary causal processes identified in the diversionary war literature seem poor fits for explaining aggression due to civil-military relations. First, studies of diversionary war suggest that entering into a dispute

may build popular support for the regime by uniting the populace against a foreign foe.<sup>3</sup> While the boost in popularity due to conflict — the “rally around the flag” effect — is typically short-lived, and even though leaders are more likely to lose power if the state performs poorly in a crisis (Chiozza and Goemans 2004), political leaders that face strong domestic opposition may have little to lose. In this way, rulers “gamble for resurrection” by risking a fight against an enemy in the hope that they can outflank or outlast domestic opponents (Downes and Rocke 1994). However, while going to war may unite the populace in support of the regime, it is not necessarily more likely to build support among the men and women who must do the fighting (see Dassel and Reinhardt 1999).

Second, rulers may enter into conflicts in order to demonstrate their competence (Tarar 2006; Smith 1996). This possibility arises when constituents are asymmetrically informed about the type of ruler leading the state. Because competent rulers are more likely to win a conflict, they are also more likely to enter into disputes. The decision to select into a conflict is therefore a signal about the ruler’s type, one that can be used by constituents when deciding whether or not to retain the political leadership in office. Because militaries are key stewards of foreign policy, however, they are less likely to be asymmetrically informed about the capabilities of the ruler in this realm, making this a less applicable explanation for a civil-military cause of diversionary behavior.

This is not to say that informational asymmetries are absent from civil-military relations. Militaries are designed to assess and combat the state’s enemies. As a result, these forces possess privileged information about the threat environment. This becomes problematic when civil-military strife disrupts the flow of information from the armed forces to political leaders responsible for making decisions regarding the use of force. As Brooks (2008) argues, strategic assessment is likely to be poorest when preference divergence between political and military elites is high, and when the institutional power of the military rivals the political regime. In contrast, rulers are likely to receive the most accurate strategic assessments when political institutions dominate the military and there is little preference divergence among elites.

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<sup>3</sup>The diversionary incentive may lead some regimes to target certain groups within the state, but most studies tend to explore diversionary war in the context of international relations.

Poor strategic assessment can create numerous difficulties for rulers. In particular, leaders in states with bad assessments may have biased estimates of capabilities. A lack of accurate information about the threat environment may also lead regimes to “adopt military strategies and take military actions that are poorly linked with their broader political goals” (Brooks 2008, 272). It remains unclear, however, whether this uncertainty should lead rulers to adopt more aggressive policies on average. On one hand, uncertainty due to faulty strategic assessments may lead rulers to underestimate the relative capabilities and resolve of their opponents, thereby contributing to more assertive behavior. On the other, uncertainty can lead rulers to overestimate their foes, increasing their willingness to accommodate an opponent’s demands (see Gartzke 1999).

In order to assess how civil-military strife affects rulers’ behavior toward external threats, I extend the McMahon and Slantchev (2015) model to analyze the interaction between political and military leaders. This model builds on dynamics identified in extant research. (1) Rulers develop militaries for defense against external threats, but must then worry about losing power to their own forces. (2) A number of social and institutional factors determine the benefits and costs of overthrowing the regime. (3) Within this context, political leaders use a variety of levers to improve regime security. In particular, rulers can both regulate the characteristics of the armed forces and manage the risks that the state runs against external threats. (4) Militaries may possess private information about the nature of the threat environment.

## 2.4 Model

The model is a game with two players, a ruler of the political regime  $R$  (“she”), and a general  $G$  (“he”), who commands the state’s military forces. Within the state, there exists some status-quo distribution of benefits  $b$  that privileges certain groups  $i$  over others, such that  $b_i \in [\underline{b}, \bar{b}]$  and  $0 < \underline{b} < \bar{b} < 1$ . For simplicity, let 0 represent the value of obtaining nothing and 1 denote the benefit of obtaining everything within the state. The competence of both players may also vary. The ruler’s competence is normalized to 1, while the general has competence  $\theta \in [0, \bar{\theta}]$ .

The game begins when the ruler observes the severity of the state’s threat en-

vironment. For the sake of simplicity, I refer to the threat environment in the context of a singular threat, though it is possible that rulers must contend with multiple opponents. The state faces an external threat  $T \geq 1$ , which is either a baseline threat,  $T_B$ , or an elevated threat,  $T_E$ , such that  $1 \leq T_B < T_E$ .

Based on this observation,  $R$  makes three choices. First,  $R$  decides whether or not to hire  $G$  from group  $b_i$  with competence  $\theta$ . The general can help the ruler by managing the military, but can also turn on the regime and launch a coup. If  $R$  does not hire a general, the threat must be faced with her own competence ( $\theta = 1$ ), though there is no need to worry about the loyalty of the general. Second,  $R$  chooses how many resources  $m > 0$  to give the military. These resources are important, because they determine the state's chances of defeating the challenger in battle. The probability of winning is represented by a contest-success function:

$$p(m, T; \theta) = \frac{\theta m}{\theta m + T}, \quad (2.1)$$

which shows that the regimes's security against external challengers is increasing in the strength of the military and the general's competence, while it is decreasing in the threat posed by the opponent.

Third,  $R$  can also affect the security environment by adopting aggressive policies toward the regime's opponents, thereby ensuring that the threat level is elevated (i.e.  $T_B \Rightarrow T_E$ ). In practice, political leaders can increase the threat posed by an opponent by adopting provocative or uncompromising stances to trigger a number of potential reactions from the foe. First, opponents may make additional investments in their military power by developing and acquiring new weapons systems, training, and manpower, or even by external balancing through alliances with other states. Second, opponents can deploy their capabilities in a way that increases the threat to the ruler's regime. Through moving forces toward the border or strategic chokepoints, for example, opponents can increase their probability of victory and therefore the relative threat they pose to the government. Third, rulers may hope to engender greater resolve on behalf of opponents. Even if the balance of capabilities does not change, opponents can become more resolute in their dealings with the state, increasing the extent to which disagreements may escalate to costly confrontations that result in victory for these challengers. Note that

once the threat environment is elevated, the ruler must deal with it. This reflects the fact that rulers cannot simply wish threats away.

If  $R$  chooses to hire a general,  $G$  decides whether or not to remain loyal. If  $G$  launches a coup, he overthrows the government successfully with probability  $p(m, 1; \theta)$ , which is a function of his competence, the military's strength, and the security resources of the ruler:

$$p(m, 1; \theta) = \frac{\theta m}{\theta m + 1}. \quad (2.2)$$

Note that  $R$ 's security resources are normalized to 1. If the general succeeds, he receives a benefit of 1 minus the costs of a coup  $c > 0$ . If  $R$  survives the coup, which happens with probability  $1 - p(m, 1; \theta)$ ,  $G$  receives nothing. In this, the same capabilities and competence that make the military an effective agent for defending against external threats also make  $G$  a danger to the political regime if he becomes disloyal.

After  $G$ 's choice, the external threat is realized. If  $G$  remains loyal, the threat is defeated with probability  $p(m, T; \theta)$ . The highest possible payoff from a coup occurs in the absence of an external threat when the chances of success in a coup are certain:  $1 - c$ . If  $G$  would not execute a coup when his chances are certain, he would not attempt a coup under less favorable circumstances. I focus on the case where  $G$ 's loyalty is not so easy to guarantee.

**Assumption 4.** *Every general is a would-be ruler:  $\bar{b} + c < 1$ .*

I also assume (1) that the ruler pays no cost for a coup; (2) that no cost is paid by either player for facing the external threat; (3) military resources allocated by  $R$  come out of her payoff, but there is no constraint on resources; (4) the benefits for group membership,  $b_i$ , are fixed and not paid by the ruler; and (5) resources  $m$  can only be used to deal with the external threat.

The goal of the model is to highlight key mechanisms that connect concerns about military loyalty to the risks that rulers will run against external threats. These assumptions help in creating a model that is both tractable and useful for exploring these dynamics. In most cases, the assumptions are also defensible directly. (1) While the ruler pays no cost in a coup, she does risk losing the benefits of office if the military becomes disloyal. As the model reveals, this risk degrades the payoff for the ruler such

that she is willing to undertake a variety of actions to preserve her place in power. It is important to consider the costs for the general, however, since they may represent institutional barriers or social resistance to a military overthrow. (2) Like the risk of a coup, the costs of facing an external opponent are inherent in the threat that this opponent poses to the state. Introducing explicit costs for facing an external threat would complicate the analysis without providing additional analytical leverage. In particular, identifying a reasonable distribution of these costs across the players would be tricky. If the costs of fighting an external threat are paid by whichever player is in power at the end of the game, for example, costs that are sufficiently high could make losing power profitable. Furthermore, while these costs would likely shift the parameter space in which  $R$  is willing to inflate the threat environment, only exorbitant costs would eliminate this space completely. As a practical matter, rulers facing political instability are often willing to undertake operations to secure their rule, whether in the form of military, economic, or social activities, that cost the state dearly in both blood and treasure.

The assumption that there is no budget constraint (3) is consistent with this framework. Budgets constraints are less likely to matter in situations where rulers are at risk of losing power, and in cases where the constraint is triggered, the model would demonstrate that civil-military relations are influenced by resource deficiency, rather than political or strategic dynamics, which is the point of this analysis. (4) The parameter  $b_i$  represents the consequences of the social cleavages that serve as the basis of the state, and are therefore not available to the ruler for consumption. At any rate, it is unlikely that rulers can save resources by picking a general from a less privileged group. (5) I also assume that military resources are only useful for defending against the external threat. Day to day internal security operations are typically handled by police and other forces that are not designed to engage in combat operations. Similarly, militaries are usually designed to face other military forces, and are used for internal security only when there is a grave risk of instability.<sup>4</sup>

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<sup>4</sup>For more on this, see Svobik (2012).

## 2.5 Threat Environment is Known

I begin by considering the case where both players know the size of the threat. When the general is not hired, there is no chance of a coup. In this case,  $R$ 's payoff is  $p(m, T; 1) - m$  since she faces the threat based on her own competence and resources  $m$ . The maximum payoff  $R$  achieves under this circumstance is  $\tilde{m} = \max(0, \sqrt{T} - T)$ . For  $R$  to hire a general in equilibrium, her expected payoff must exceed the payoff she gets when devoting  $\tilde{m}$  resources to defense:  $p(\tilde{m}, T; 1) - \tilde{m}$ . This means that no coup can occur in equilibrium with complete information about the threat environment. For a coup to be possible,  $R$ 's expected payoff would have to satisfy the following condition:

$$p(1, \theta m; 1) - m < p(m, T; 1) - m \leq p(\tilde{m}, T; 1) - \tilde{m}.$$

However, if this is the case,  $R$  would prefer not to hire a general in the first place. The next result shows why this is true. See Appendix A for all proofs.

**Lemma A.** *In any equilibrium,  $G$  remains loyal if, and only if,  $T \geq T_i^*(m, \theta)$ , where*

$$T_i^*(m, \theta) = \left( \frac{\theta m}{c} \right) \left[ \frac{\theta m}{\theta m + 1} - (b_i + c) \right], \quad (2.3)$$

with  $T_i^*$  increasing in  $m$  and  $\theta$  whenever it is non-negative.

For the general to take power successfully, he must both overthrow the government *and* survive against the external threat. As the external threat becomes more imposing,  $G$  becomes less willing to take the risks and pay the costs associated with a coup. This produces the Circling of the Wagons effect, since larger threats induce military loyalty, which, in turn, permits rulers to pour more resources into the military or appoint more competent generals as  $T$  increases. However, the ruler's desire to save resources does dictate her choice of generals.

**Lemma B.** *Fix any social group  $b_i$ . If  $R$ 's choices ensure  $G$ 's loyalty, then  $R$  always*

picks the most competent general from this group,  $\bar{\theta}$ , and endows him with:

$$m_i^*(T) = \begin{cases} \max\left(0, \sqrt{T/\bar{\theta}} - T/\bar{\theta}\right) & \text{if } S(T) \leq S_i^*(T) \\ S_i^*(T)/\bar{\theta} & \text{otherwise,} \end{cases}$$

where

$$S_i^*(T) = \frac{b_i + c + cT + \sqrt{(b_i + c - cT)^2 + 4cT}}{2(1 - (b_i + c))}. \quad (2.4)$$

is the maximum level of disloyalty that would not provoke a coup, and

$$S(T) = \sqrt{\bar{\theta}T} - T \quad (2.5)$$

is the level of disloyalty for the most competent  $G$  with resources optimally provided to deal with the external threat.

This result shows that 1) rulers pick the most competent general they can, though 2) the resources that flow to the military must sometimes be constrained in order to ensure the general's loyalty. In the model, military power is a function of both the resources allocated to the armed forces and the competence of the general appointed to lead them. Yet while capable generals can effectively manage costly resources, incompetents squander these goods. Rulers would therefore prefer to appoint the most capable military leadership they can, even if the resources given to the military must be constrained in order to keep military power at or below the threshold for loyalty established in Lemma A.

As the model shows, military allocations vary with the threat environment. In order to ensure the discussion remains tractable, I make the following assumption about the relationship between the size of the external threat and military allocations made to face this threat.

**Assumption 5** (Reasonable Costs of Security). *The marginal costs of security are not so high as to cause larger threats to require smaller measures under complete information:  $m_i^*(T_E) > m_i^*(T_B) > 0$ .*<sup>5</sup>

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<sup>5</sup>When resources are constrained, this is always true. When the resources are unconstrained, it must be

With this established, it is possible to consider the circumstances under which  $R$  will want to inflate the threat.

**Lemma C.** *When  $R$  knows the threat environment, she never chooses to inflate the threat.  $R$  allocates resources appropriate for meeting the observed threat:  $m_i^*(T_B)$  when  $T = T_B$  and  $m_i^*(T_E)$  if  $T = T_E$ .*

The results presented so far lead to the following proposition:

**Proposition 3.** *In any equilibrium in which a general is hired and the threat environment is common knowledge,  $R$  picks the most competent general she can find and never inflates the threat.  $R$  allocates the appropriate level of resources for the observed threat, an amount which may be constrained below what is optimal for defense. In ensuring  $G$ 's loyalty,  $R$  would prefer to degrade the military's effectiveness by withholding its resources, rather than behave aggressively to meet a worse threat.*

*Proof.* The proposition follows from Lemmata A, B, and C. □

This suggests that even though the threshold for loyalty is greater when the threat is  $T_E$  rather than  $T_B$ ,  $R$  will always choose the lower threat level so long as she has control over  $m$ . First consider what happens when the ruler observes the threat to be elevated. While elevated threats help to induce military loyalty, rulers need not act aggressively to enlarge a threat that is already large. In contrast, when the threat level is not elevated, rulers prefer to keep the threat at its baseline value. The logic is straightforward:  $R$  would prefer to face a smaller, baseline threat in order to economize on defense. This result also highlights another aspect of the diversionary hypothesis in the context of civil-military relations: inflaming the threat environment necessitates the support of a military force

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that  $\sqrt{T_E/\theta} - T_E/\theta > \sqrt{T_B/\theta} - T_B/\theta$ , which reduces to

$$\theta > (\sqrt{T_B} + \sqrt{T_E})^2,$$

in which  $m_i^*$  must be increasing in  $T$ :

$$\frac{dm_i^*}{dT} = \frac{1}{2\sqrt{\theta T}} - \frac{1}{\theta} > 0 \Leftrightarrow \theta > 4T.$$

capable of facing the threat, an uncomfortable proposition in many states where relations between political leaders and the armed forces are tense.

The model reveals that the information the ruler has about the threat environment is crucial for her survival. If the ruler remains aware of the precise nature of the threat environment, navigating the tradeoff between security against external threats on one hand, and an overly powerful and dangerous military on the other, is feasible. However, the result is puzzling to the extent that civil-military relations have no effect on the foreign policy decisions of rulers, despite evidence to the contrary. If information about the threat environment is a crucial factor for explaining the lack of escalatory behavior among rulers, it is possible that incomplete information is a key determinant of aggressive behavior among rulers.

## 2.6 Asymmetric Information about Threat Environment

By their very nature, militaries are trained and equipped to assess and combat states' enemies. These competencies are significant because they give the military privileged access to information about the threat environment. Rulers must therefore rely on these agents to supply reports about the relative capabilities and resolve of opponents, details that are vital when rulers make foreign policy decisions. As Brooks (2008) shows, civil-military discord — which often occurs when political leaders fear military involvement in politics — can create incentives for the armed forces to withhold or misrepresent this information, leaving rulers without access to accurate strategic assessments. I extend the model to explore this case, in which rulers are asymmetrically informed about the true nature of the threat environment; while  $G$  knows the true size of the threat,  $R$  is left uncertain. Let the threat be at its baseline value ( $T_B$ ) with probability  $q \in [0, 1]$  and elevated ( $T_E$ ) with complementary probability.

**Lemma D.** *Fix the level of competence  $\theta$  and social group  $b_i$ . When  $R$  does not know the threat level with certainty, her actions reflect the belief  $q$  about the size of the threat:*

- *if  $q > \bar{q}$ ,  $R$  does not inflate the threat and allocates  $m_i^*(T_B)$  resources.  $G$  remains loyal, but the state may be underprepared for a large threat;*

- if  $q \leq \bar{q}$ ,  $R$  inflates the threat to  $T_E$  and allocates  $m_i^*(T_E)$  resources.  $G$  remains loyal and the regime faces the large threat with certainty, although the military is better equipped to face this threat.

This result can be further summarized:

**Proposition 4.** *In any equilibrium in which  $R$  hires a general and only he knows the severity of the threat for certain,  $R$ 's decision to inflate the threat and the resource she allocates to meet it are contingent upon her beliefs about the threat. If she becomes sufficiently concerned that the threat is elevated, she is better off by making it so for certain through aggressive actions, and by allocating the amount of resources most appropriate for defense against elevated threats. When  $R$  is less pessimistic about the threat environment, she avoids aggressive actions that might inflate the severity of the threat and allocates only the resources to face a baseline threat.  $G$ 's loyalty is ensured in both circumstances, though  $R$  must risk facing the elevated threat without the appropriate resources if she does not engage in inflationary behavior.*

*Proof.* The proposition follows from Lemma D. □

In other words, rulers may act aggressively to inflate the threat when they are uncertain about the size of the threat. The choice of the ruler depends on her belief about the threat environment. If the threat is likely to be small  $q > \bar{q}$ , the political leadership devotes only the amount of resources for this baseline threat. While this ensures the military's loyalty, it also leaves the regime vulnerable if the threat is actually elevated. There exists some belief threshold after which the risk of facing a large threat without the proper resources becomes too great. If the threat is elevated with probability  $q \leq \bar{q}$ , rulers make certain that the threat is large, as these rulers could through behaving aggressively. Note that the ruler never devotes any resources between  $m_i^*(T_B)$  and  $m_i^*(T_E)$ . Doing so would create a positive probability of a coup if the threat is actually baseline, while still failing to prepare the armed forces for operations in an elevated threat environment. Once the ruler becomes confident enough that the threat is elevated, she is better off by making it so for certain. This eliminates the possibility that the threat is actually baseline (in which case the military might be disloyal) and ensures that the military has the proper allocation of resources with which to face an elevated threat.

## 2.7 Model Discussion

### 2.7.1 Implications for International Relations

The dynamics outlined by the model have a number of implications for studies of international conflict and political stability. The literature on arms races, for example, suggests that internal factors can lead to arming, which then creates suboptimal outcomes in the international sphere if it prompts adversaries to adopt more aggressive behavior in response.<sup>6</sup> The domestically-driven dynamic in the model presented here depends entirely on this response from external foes. If the provocative behavior of the ruler did not provoke, these efforts would have no effect on the military's incentive for loyalty, and would therefore be wasted. In fact, arming to face an opponent that does not constitute a real threat would put the political leadership in grave danger if it makes the military too powerful for the given threat environment. The adversarial reaction of opponents is therefore far from suboptimal in this context, and constitutes an intended corollary of the decision to arm.

Similar to the behavior outlined in diversionary war theory, rulers hoping to utilize the Circling of the Wagons effect may sometimes run greater risks abroad in order to improve regime security at home. However, the mechanism offered by the model differs from the dynamics outlined by the diversionary war literature in two important ways. First, studies of diversionary war focus on the ways in which rulers can build support for their regime, either by encouraging constituents to "rally around the flag" or through demonstrations of rulers' competence (Smith 1996; Levy 1993). In contrast, the incentive for loyalty created by the Circling of the Wagons mechanism is not driven by the military's affinity with the regime. The model shows instead that worsening the threat environment induces loyalty by reducing the expected benefits associated with controlling the government. Second, the decision to adopt aggressive behavior is prompted by the uncertainty that may exist about the threat environment, rather than the potential for domestic instability itself. Rulers at risk of a coup would prefer managing the military's loyalty by controlling its power (through the resources that are provided) rather than by picking fights, and can do this so long as they are sufficiently certain of the threat

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<sup>6</sup>For a detailed discussion of this literature, see Glaser (2000).

environment.

The type of strategic uncertainty highlighted by the model differs from most studies of international conflict, which focus on the consequences of incomplete information *between* states. When informational asymmetries lead to uncertainty about the threat environment, states may make incompatible demands that create an imperative for conflict (Fearon 1995; Slantchev and Tarar 2011). The model presented above shows that incomplete information *within* states due to civil-military concerns can also influence the risks that states run abroad. In some ways, this dynamic is especially pernicious: civil-military strife creates a set of conditions in which rulers are less likely to receive accurate strategic assessments and more willing to undertake aggressive behavior in order to resolve the type of uncertainty that arises in their absence. Furthermore, this dynamic exists even if the military is fully informed about the nature of the threat environment. After all,  $G$  always knows the true size of the threat in the model. In this, the decision to use force in this framework does not depend on the incomplete information that may exist between states.

If the assumption of an omniscient  $G$  is relaxed, what would matter is the belief that he has about the threat environment. The belief that the threat is elevated would help to induce  $G$ 's loyalty, while the chance that the threat is baseline would make it harder to keep him from defecting. In general terms, the results derived from the model are driven by the potential for disagreement between the ruler and general about the severity of the threat environment rather than the size of the threat itself, since it is the disagreement about threats that creates the risk of a coup and therefore the incentive to inflate the threat. This implies a challenge for the potential opponents of states at risk of a coup. In order to mitigate the risk of conflict, challengers must bargain in a way that reveals their type to both the armed forces and the political leadership. Signals that are perceptible to one actor more than another may actually exacerbate the divergent beliefs within civil-military relations that motivate conflict.

### **2.7.2 Implications for Regime Security**

Militaries tend to crave resources and autonomy, and may become dissatisfied if these corporatist interests are not met by the political regime (Finer 1988). However, the

model reveals that constraints on the military that limit its power are necessary under some conditions to prevent a coup. This is an unfortunate paradox: the constraints imposed on the armed forces that are necessary to ensure their loyalty may actually serve as a basis for civil-military acrimony. In the model's present form, the military — and its leader  $G$  — do not have corporatist interests, *per se*. The resources provided to the armed forces increase  $G$ 's payoff only to the extent that they enable him to defeat the military's opponents. However, one might explore an extension in which  $G$  is a direct beneficiary of the military's resources. For example, if  $b_i$  is a function of  $m$ , then we might identify a different dynamic that incentivizes aggressive foreign policy behavior. Since the necessity of constraints declines as external threats become more severe, rulers may purposefully make the threat environment worse so that concessions can be made to the military without triggering a coup. Put differently, if rulers need a way to satisfy the military's demand for resources without creating a set of armed forces that are overly powerful for the threat environment, aggressive behavior to inflate the threat may be required. In a way, this logic is consistent with studies of civil-military relations that focus on the difficulties that some rulers may have with credibly committing resources to the armed forces. In this context, the need to deal with mass unrest (Acemoglu, Ticchi and Vindigni 2010) or international foes (Arbatli and Arbatli 2014) creates a demand for the services that militaries can provide, helping the regime to commit to the resource transfers that pacify their militaries. One can think about the mechanism based on the model presented here as more general, however, in the sense that threats do not facilitate a credible commitment, but rather act through inducing the military's loyalty directly, which saves rulers from the need to constrain the armed forces (at least as extensively).

One might question the assumption in the model that the threat must be faced. If this assumption is relaxed, however, it would become clear that the dilemma is even more biting for rulers, and that the main theoretical results would hold. As the model shows, the external threat induces military loyalty by reducing the probability that the general can survive after taking power in a coup. If the threat is no longer realized after a coup — as might be the case if a potential enemy has a problem with the current ruler but not the general — the ruler will have to reduce the chances of a successful overthrow in another way. For  $R$ , the most cost-effective and preferable method for controlling  $G$

involves imposing constraints on resource allocations to the armed forces. With complete information about the threat, this is all that  $R$  will do, even if the military must be severely handicapped to ensure  $G$ 's loyalty. If  $G$  is not sufficiently deterred by the external threat such that he will launch a coup regardless of its size, then  $R$  may choose not to hire a general in the first place. In the case where the ruler is uncertain about either the size of the threat or whether it will be realized, the outcome will still depend on the belief that she has about  $T$ . At some point, the risk of facing a threat that is likely large, or more likely to be realized, without the proper resources becomes too great and  $R$  will behave aggressively to try to ensure that an elevated threat is realized with certainty. Consequently, relaxing the assumption of a certain threat may shift the parameter space in which  $R$  is willing to behave aggressively and constrain the military, but would not change the basic dynamics outlined by the model.

The role of the external threat  $T$  can be viewed in another way as well. In the model, elevated threats lessen the incentive for a coup by reducing the benefits associated with holding power. In the discussion so far, these benefits are discounted by the risk of losing in an inevitable conflict against  $T$ . Without changing any feature of the model other than the way in which it is interpreted, one could instead conceive of the effect of  $T$  through its influence on the bargaining leverage of states. Because the balance of military power determines the probability of victory in a conflict, it also drives the bargains that states can demand in lieu of fighting (Fearon 1995; Powell 1999). Relatively large threats reduce the probability of victory for states, and therefore also what they can demand in any conflict avoiding bargain. Now think about the value of the state as a reflection not necessarily of the sum of the goods in the state — which have been normalized to 1 — but instead as the sum of the goods over which the government and the opponent that constitutes the external threat are competing. We would then find that more powerful opponents diminish the share of goods available for government consumption even if no conflict occurs. In other words, because strong opponents prevent states from gaining the policies and goods that they desire, states that are relatively disadvantaged in the balance of power are also less profitable to control than they would otherwise be. Consequently, relatively large external threats reduce the incentive for a coup by constraining the bargaining power of any government that must face these threats. The

converse is true as well. When states are facing a relatively weak opponent, they have more bargaining power to capture the goods that the holders of power may desire. This increases the value of control over the state and, therefore, the incentive of the armed forces to overthrow the regime in order to capture it.

## 2.8 Developing Hypotheses

The behavior outlined by the model arises in a context where the political leadership is concerned about the loyalty of the armed forces. Of course, for the military to pose a threat to the regime, there must exist an incentive to overthrow it. This is not true of all states. Where the costs of carrying out a coup are sufficiently high, or where plotters would be unlikely to realize sufficient gains from overthrowing the government, there exists no incentive for a coup, such that the armed forces would not carry one out even if they were certain to achieve success. The Guardianship Dilemma does not obtain under such conditions (which necessitates Assumption 4). Consequently, the behavior described by the model does not apply in states like Norway, New Zealand, Canada, or the United States today, where it is hard to imagine that the risk of a coup d'état plays a strong role in the decisions of policymakers. The focus then is on examining the actions of states in which there exists a real threat of military intervention in politics.

Among states in which a military coup is feasible, the model offers certain key predictions that are testable empirically. The theoretical results show that while concerns about the loyalty of the armed forces may sometimes give regimes incentive to worsen the threat environment, this occurs only when rulers lack sufficient information about the severity of these threats. If the political leadership is uncertain about the threat, yet suspects that the state may be actually in an elevated threat environment, aggressive actions may be necessary to increase regime security. In all other cases, regimes prefer to pursue less risky foreign policies, since this approach allows them to economize on defense, and reduces the need to feed a competitor for political power with additional resources. Because the theoretical dynamic depends on the information that rulers possess about the threat environment, it is necessary to examine variation in the informational content of the strategic environment in order to understand when they will adopt aggressive

behavior.

There are a number of ways for rulers to resolve uncertainty about the strategic environment, ranging from diplomatic negotiations to espionage. Among these sources of information, I focus on the type that is perhaps the most useful for forming accurate strategic assessments: the process of fighting itself. When states engage in conflict, beliefs about the relative power of opponents can be updated as actual events reveal information about the types of states involved. Importantly, because the information provided by fighting is based on observable outcomes rather than hypothetical evaluations, this information is hard to manipulate, such that there is less doubt about its veracity (Wagner 2000; Filson and Werner 2002; Ramsay 2008). Altogether, this implies that more information about the “type” of opponent faced will exist after a conflict than before it.

Among the disputes that occur, certain types are especially informative. The threat environment is driven by the distribution of military power among states, which is, in turn, a function of both the capabilities and resolve of potential belligerents. Consequently, it is possible to consider how different aspects of conflict affect the information that is revealed about these attributes of participants. Disputes that are costly, for instance, are particularly useful for resolving uncertainty about the types of states involved because only resolved or capable states are willing or able to sustain costs during a militarized dispute. These visible attributes help to separate these states from others, and thereby provide the sort of information rulers need when assessing the threat environment. Disputes that occur without costs, in contrast, carry more limited informational content since all types of states can participate in these engagements.

The theory suggests that the effect of information about the threat environment is mediated by states’ civil-military institutions, such that states facing coup risk will be less likely to behave aggressively in subsequent periods when the previous conflict was most informative. Note that in order for rulers to take advantage of the Circling of the Wagons effect, they must actually make the threat environment worse for the state. Rulers cannot simply fabricate a threat, since the military’s specialization in assessing and combating foes means that these forces will know better. In other words, the military will not be deterred from a coup by threats that do not actually exist. This means that aggressive behavior intended to induce military loyalty necessarily involves observable coercion,

such that rulers' actions will be manifest in the record of disputes that occur between states. This leads to the following hypothesis.

**Hypothesis 1.** *States at risk of a coup are less likely to become involved in disputes following particularly costly contests.*

A major challenge to the validity of the costly disputes analysis is the possibility that the effects of fighting exhaust states, leaving them unable to compete again even if they would otherwise wish to fight repeatedly. Costly conflicts also change the characteristics of the militaries that engage in them, making forces that have recently fought a hard conflict unlike those that have not. Consequently, I analyze the actions of third-parties. While direct involvement in conflict is perhaps the best way to learn about the relative capabilities and resolve of an opponent, states can also gain information about the threat environment indirectly by observing the actions of other states that fight. While these third-party conflicts provide information, they do not impose the same kinds of costs that a state must pay to engage itself in fighting. As a result, we can observe the effects of the information gained through fighting while limiting the influence of war exhaustion and military flux.

**Hypothesis 2.** *States at risk of a coup are less likely to become involved in disputes following costly contests among potential opponents and third-parties.*

In order to establish the robustness of the informational mechanism, I consider another source of information based on the decisiveness of outcomes in contests between states. Losing in a dispute indicates that states are either incapable or unresolved. Losing quickly is an even stronger indicator about the type of state faced during a recent conflict (Filson and Werner 2002). This is an especially useful dynamic in the context of the theory. If the uncertain belief that the threat is large is the driver of aggressive behavior, then information suggesting that an opponent is militarily incapable or irresolute will shift  $q$  upward, such that it is more likely that  $q > \bar{q}$ , the circumstance under which  $R$  loses the incentive to behave aggressively.

**Hypothesis 3.** *States at risk of a coup are less likely to become involved in disputes following particularly decisive contests.*

## 2.9 Empirical Analysis

Unfortunately, it is hard to compare the behavior of rulers of states that have recently fought to rulers in states that infrequently compete. Conflicts occur only in places where there exists a willingness and opportunity to fight (Most and Starr 1990; Starr 2005). In addition, conflicts shape social, economic, and political institutions within states, meaning that states that compete are likely transformed in a number of meaningful ways. While these dynamics are interesting, the difficulties associated with controlling for unobserved heterogeneity make this a challenging context in which to test the informational effects predicted by the theoretical model. In order to address this concern, I look for the dynamics predicted by the model among states that have already engaged in at least one militarized dispute. Sampling in this way biases against the findings predicted by the model, since I am losing the ability to account for the factors that led to an initial dispute (Gartzke and Simon 1999; Gartzke and McMahon 2014).

I analyze a sample inclusive to all pairs of states — “dyads” — in the world that participated in at least one militarized dispute between 1950 and 2001.<sup>7</sup> Examining dyads rather than monads is crucial because the information provided by fighting is relevant to particular opponents. Consequently, assessing behavior among dyads allows me to focus on the informational dynamics predicted by the theory. Since states may fight multiple times during the same calendar year, I utilize dyad-months as the unit of analysis. Disaggregating the data in this way allows for maximum variation in the dependent variable and reduces the amount of overlap when conflicts occur in close succession. Because I am interested in observing the recurrence of disputes, dyads do not appear in the dataset until after they have participated in at least one dispute. In all, the dataset includes 573 dyads. While the theory is potentially applicable to external threats of domestic origin (e.g. rebel groups, popular uprisings), these tests examine only variation in international disputes. Limiting the scope of the study is necessary so as not to mix levels of analysis in the statistical tests. The role of domestic threats is left for future research.

The purpose of the analysis is to identify the factors that affect the chances of

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<sup>7</sup>The time period is limited by the availability of data on civil-military relations and militarized disputes.

dispute recurrence. Hazards models provide an appropriate way to evaluate claims in this context, when the likelihood of an outcome varies as a function of time conditional on some regressors of interest. Among the different types of hazards models, the Cox model is a preferable estimator since it does not require one to make potentially incorrect assumptions about the shape of the baseline hazard (Cameron and Trivedi 2009, 592-600). The Cox method is, however, a less efficient estimator than other common types of hazards models like the Weibull and Exponential.<sup>8</sup> Equation 2.6 shows the Cox model specified with both time varying and time invariant regressors:

$$h_i(\tau) = h_0(\tau)\exp(\beta_1\text{Time Invariant Regressors}_{is} + \beta_2\text{Time Varying Regressors}_{it}), \quad (2.6)$$

where  $h_i(\tau)$  denotes the hazard rate for dyad  $i$  after  $\tau$  months since the end of the most recent dispute, and represents the likelihood that a dispute will recur in that month if peace has survived to that point. Time invariant regressors, indexed by  $s$ , contain information about the most recent dispute and do not vary across calendar time. Alternatively, time varying regressors, indexed by  $t$ , measure attributes like capabilities that do change with calendar time.

I identify disputes — the “hazards” in this analysis — using the Militarized Interstate Disputes (MID) data from Maoz (2005). Yet identifying the hazard itself is not sufficient for hazards models, which also require information about the “time to failure” to compute estimates. The MID PEACE MONTHS variable is utilized for this purpose. The measure denotes the number of months that have elapsed since the end of the previous dispute. Because the hazard is coded as “1” for any month in which a MID took place, it is necessary to take steps to avoid confusing individual disputes that take place over multiple months with series of unique disputes. In order to do this, I drop the non-first months of each dispute.<sup>9</sup> There are cases where disputes occur concurrently. I treat these overlapping disputes as one conflict period, which lasts from the beginning of the first concurrent dispute to the end of the longest or latest dispute. I include a variable to represent the NUMBER OF CONCURRENT DISPUTES in the previous conflict period within all models to account for these multiple, overlapping contests. The causes of the

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<sup>8</sup>This inefficiency biases against the statistical significance of results.

<sup>9</sup>The MID PEACE MONTHS variable is still coded based on the actual end date of the previous dispute.

right-censoring for the data in 2001 are orthogonal to the risk of the hazard, meaning that estimates are not biased by censoring.

The hypotheses posit that the effect of coup risk on dispute propensity is conditional on the informational context in which decisions are made. Multiplicative interaction terms are commonly used to test conditional effects of this kind (Brambor, Clark and Golder 2006). In order to test the predictions made by the model, I need to measure the effect of information provided by the most recent conflict, conditional on concerns within civil-military relations, or, more precisely:

$$\text{Interaction}_{it} = \text{Information}_{is} \times \text{Civil-Military Strife}_{it}. \quad (2.7)$$

I measure information in two different ways. The first measure is based on the costs that states sustain during disputes. Costs are informative in the sense that only certain types of states are willing to suffer costs or are capable of inflicting costs on their opponents during a given contest. I develop a proxy for these costs based on the battle deaths that states incurred in their most recent dispute (Gartzke and McMahon 2014). The MID dataset includes a variable that codes the fatality level of each dispute based on a seven point scale. This scale ranges from “0”, for disputes with no battle deaths, to “6”, for disputes that have more than 1,000 battle deaths. In order to gain a better understanding of the number of fatalities, I fix the number of deaths at the mid-point value for each category, e.g. for the 1-25 battle death category, deaths are fixed at 13. I use the Correlates of War Interstate War dataset to identify precise fatality figures for conflicts that involve more than 1,000 deaths (Sarkees 2000).<sup>10</sup> The fatality data are right-skewed, so I log transform these figures to produce the PRECISE FATALITY LEVEL, LN variable used in the analysis. Because the length of a contest determines the opportunities that states have to inflict costs on each other, I also include the duration of states’ most recent dispute, measured in days, in each regression (Maoz 2005).

The second measure of information is based on the decisiveness of states’ most recent dispute. More specifically, the measure is based on 1) whether the state’s oppo-

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<sup>10</sup>There are some cases in which a war from the COW data does not have a corresponding entry in the MID data. In this case, I code the fatality variable as missing. These cases account for approximately one percent of the disputes in the data.

ment lost or yielded and 2) whether this outcome occurred quickly. Disputes in which belligerents lose or acquiesce quickly are particularly revealing, since they signal a lack of military strength or resolve by the disadvantaged party. I code the outcomes of disputes using information provided by the Maoz (2005) data, which also details the duration (in days) of these contests. States that lost or yielded to their opponent after 30 or fewer days of conflict are coded as “1” for their status as QUICK LOSERS and “0” otherwise. Duration (in days) is included in these tests as well to control for any residual effects associated with the length of a previous conflict.

There are undoubtedly many other ways for sides to transmit information about their resolve or capabilities. To the extent that I am not capturing the transmission of information with these two measures, the significance of my results are likely to be biased toward zero.

In order to identify states with the most potential for civil-military strife, I observe whether a state has had a coup d’etat in some recent period of time. I conduct the analysis with a variety of COUP LAG variables based on one, three, five, or eight years since the most recent coup. Coups are identified using a dataset from Powell and Thyne (2010). In the first series of tests that utilize non-directional dyads, I code whether at least one state in the dyad has experienced a coup or not within the specified time period. Because conflicts require the consent of both parties, observing whether either state in a dyad is willing to counter the threat of another is sufficient to evaluate escalatory behavior (see Slantchev and Tarar 2011).<sup>11</sup> Dyads with at least one coup during the lagged period are coded as “1”, otherwise, the dyad is coded as “0”. In tests utilizing directional dyads, I am able to code for whether the potential initiators and targets have had a coup during some period of time, respectively.

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<sup>11</sup>One confounding dynamic is the possibility that states are more willing to reinitiate a dispute after their opponent has suffered a coup. Yet this possibility biases against the direction of the relationship between civil-military strife and dispute propensity that is suggested by the theory.

**Table 2.1:** Operational Definitions for Variables

Variable	Operational Definition	Time Vary?	Source
COUP ATT. $\times$ FATALITY LEVEL, LN	Interaction term.	Yes	Author generated.
COUP ATT. $\times$ STATE B FAT. LEV., LN	Interaction term.	Yes	Author generated.
COUP ATT. $\times$ STATE B QUICK LOSER	Interaction term.	Yes	Author generated.
DIFF. IN CAPABILITIES <sub>t-1</sub>	Absolute difference in CINC scores for two states in dyad.	Yes	Singer (1987).
DIFF. IN POLITY2	Absolute difference in Polity2 scores for states in dyad.	Yes	Marshall and Jaggers (2009).
DURATION OF LAST DISPUTE (DAYS)	How many days did last dispute last?	No	Maoz (2005).
DYADIC FATALITY LEVEL, LN	Battle deaths (log) for dyad in its previous dispute.	No	Maoz (2005), (Sarkees 2000).
ENDED IN DRAW	Did last dispute end in a draw?	No	Maoz (2005).
IMPOSED SETTLEMENT	Was a settlement imposed on one party in last dispute?	No	Maoz (2005).
LOW POLITY2 SCORE	What is lowest Polity2 score in dyad?	Yes	Marshall and Jaggers (2009).
MID INITIATION	Initiation of subsequent MID.	Yes	Maoz (2005).
MID ONSET	Occurrence of subsequent MID.	Yes	Maoz (2005).
MID PEACE MONTHS	Months since end of last dispute period.	Yes	Maoz (2005).
NEGOTIATED SETTLEMENT	Was a settlement negotiated to end last dispute?	No	Maoz (2005).
NUMBER OF CONCURRENT CONFLICTS	Number of MIDs that occurred during last conflict period.	No	Maoz (2005).
PRECISE FATALITY LEVEL, LN	Nat. log of combined bat. deaths for dyad in last dispute.	No	Maoz (2005), (Sarkees 2000).
RECENT COUP (3 YEARS)	Did a state in dyad suffer a coup in last 3 years?	Yes	Powell and Thyne (2010).
RECENT COUP $\times$ FATALITY LEV, LN	Interaction term.	Yes	Author generated.
STATE B FATALITY LEV, LN	Sum of State B's fatalities during last conflict period.	Yes	Maoz (2005), (Sarkees 2000).
STATE B IS QUICK LOSER	Did state lose or yield within 30 days in last dispute?	No	Maoz (2005).
SUCCESS. COUP IN PREV. 3 YEARS	Was there a successful coup for state in dyad in last 3 years?	Yes	Powell and Thyne (2010).
SUCCESS. COUP IN PREV. 3 YEARS <sub>A</sub>	Was there a successful coup in State A during last 3 years?	Yes	Powell and Thyne (2010).
SUCCESS. COUP IN PREV. 3 YEARS <sub>B</sub>	Was there a successful coup in State B during last 3 years?	Yes	Powell and Thyne (2010).
THREE YEAR COUP ATTEMPT LAG	Did a state in dyad suffer a coup attempt in last 3 years?	Yes	Powell and Thyne (2010).
THREE YEAR COUP ATTEMPT LAG <sub>A</sub>	Did state A suffer a coup attempt in last 3 years?	Yes	Powell and Thyne (2010).

There are a number of other factors that may drive the recurrence of disputes, such as states' material capabilities, relative levels of democracy for states in the dyad, as well as the settlement type of previous disputes and their outcomes. I control for these factors by including a variety of covariates in different model specifications. The operational definitions for all of the variables used in the analysis are listed in Table 2.1. The third column denotes whether the variables are variant across calendar time or not.

**Table 2.2:** Cox Hazards Analysis of Dispute Recurrence and All Coups, 1950-2001

	(1)	(2)	(3)
RECENT COUP $\times$ FATALITY LEV, LN	-0.0433* (0.021)	-0.0404 <sup>†</sup> (0.021)	-0.0401 <sup>†</sup> (0.021)
RECENT COUP (3 YEARS)	0.0596 (0.093)	0.0827 (0.090)	0.0773 (0.086)
PRECISE FATALITY LEVEL, LN <sup>‡</sup>	-0.0115 (0.015)	-0.0098 (0.016)	-0.0138 (0.016)
NUMBER OF CONCURRENT CONFLICTS <sup>‡</sup>	-0.1423 (0.121)	-0.1362 (0.121)	-0.1187 (0.121)
IMPOSED SETTLEMENT <sup>‡</sup>	-0.4765** (0.164)	-0.4381** (0.162)	-0.1988 (0.192)
NEGOTIATED SETTLEMENT <sup>‡</sup>	-0.2206* (0.093)	-0.2133* (0.093)	-0.1881* (0.094)
DURATION OF LAST DISPUTE (DAYS) <sup>‡</sup>	0.0021*** (0.000)	0.0020*** (0.000)	0.0021*** (0.000)
LOW POLITY2 SCORE		0.0081 (0.009)	0.0092 (0.009)
DIFF. IN CAPABILITIES <sub>t-1</sub>			-0.2630 (0.686)
ENDED IN DRAW <sup>‡</sup>			0.2605* (0.121)
<i>N</i>	172146	170543	169986

Levels of significance: <sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

<sup>‡</sup>Variables that are time invariant since most recent dispute.

Note: Standard errors are clustered by dyad.

### 2.9.1 Coups, Fatalities, and Dispute Recurrence

Results for the test of Hypothesis 1 are presented in Table 2.2. Due to limited space, I present only the results based on the THREE YEAR COUP LAG here. The alter-

native lags are presented in Appendix B. The interaction term denoting RECENT COUP  $\times$  FATALITY LEVEL, LN reveals that information has an strong pacific effect among dyads in which one state has recently suffered from a coup d'etat. Alternatively, coup-affected dyads that have not experienced an especially informative recent dispute may be more likely to become embroiled in additional disputes, though this result is not statistically significant at conventional levels. Still, the interaction term provides support for the conditional relationship predicted by the model: where the informational environment is richer, dyads containing at least one state with contentious civil-military relations are less likely to engage in disputatious behavior. Furthermore, the result remains robust across a variety of model specifications.

**Table 2.3:** Cox Hazards Analysis of Dispute Recurrence and Coup Attempts, 1950-2001

	(1)	(2)	(3)	(4)
COUP ATTEMPT $\times$ FATALITY LEVEL, LN	-0.0485*	-0.0484*	-0.0468 <sup>†</sup>	-0.0429 <sup>†</sup>
	(0.024)	(0.024)	(0.024)	(0.024)
THREE YEAR COUP ATTEMPT LAG	0.0636	0.0624	0.0706	0.0640
	(0.115)	(0.113)	(0.111)	(0.110)
FATALITY LEVEL, LN <sup>‡</sup>	-0.0137	-0.0137	-0.0117	-0.0161
	(0.015)	(0.015)	(0.015)	(0.016)
NUMBER OF CONCURRENT CONFLICTS <sup>‡</sup>	-0.1394	-0.1391	-0.1333	-0.1160
	(0.120)	(0.121)	(0.120)	(0.121)
IMPOSED SETTLEMENT <sup>‡</sup>	-0.4733**	-0.4733**	-0.4284**	-0.1920
	(0.164)	(0.164)	(0.163)	(0.192)
NEGOTIATED SETTLEMENT <sup>‡</sup>	-0.2192*	-0.2196*	-0.2136*	-0.1879*
	(0.092)	(0.092)	(0.092)	(0.093)
DURATION OF LAST DISPUTE (DAYS) <sup>‡</sup>	0.0021***	0.0021***	0.0020***	0.0021***
	(0.000)	(0.000)	(0.000)	(0.000)
SUCCESSFUL COUP IN PREV. 3 YEARS		0.0060	0.0381	0.0310
		(0.100)	(0.099)	(0.093)
LOW POLITY2 SCORE			0.0079	0.0091
			(0.009)	(0.009)
DIFF. IN CAPABILITIES <sub>t-1</sub>				-0.2621
				(0.684)
ENDED IN DRAW <sup>‡</sup>				0.2608*
				(0.122)
<i>N</i>	172146	172146	170543	169986

Levels of significance: <sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

<sup>‡</sup>Variables that are time invariant since most recent dispute.

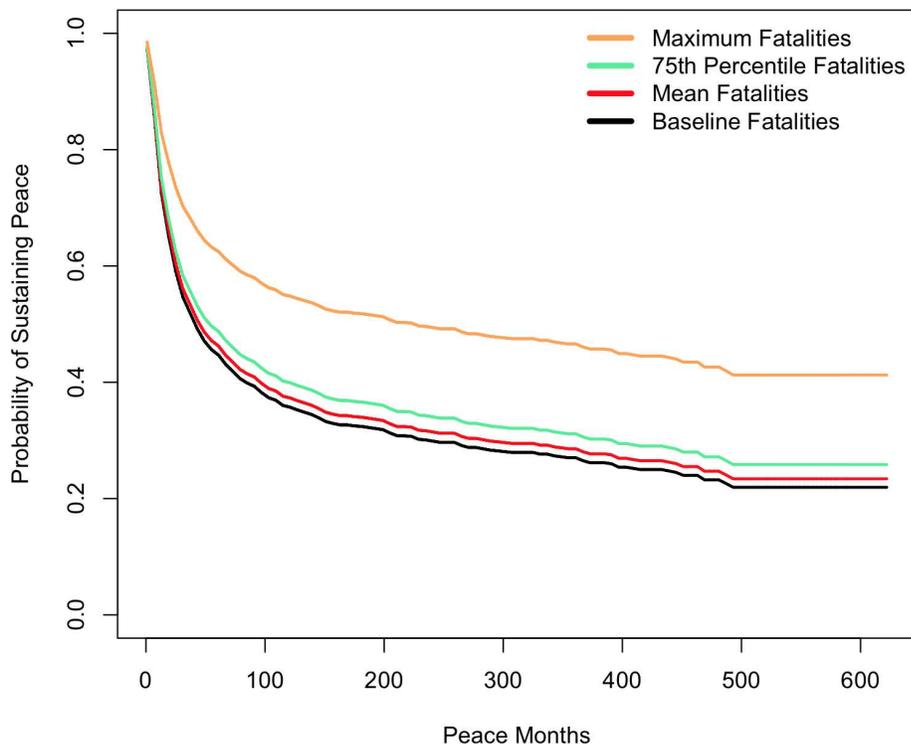
Note: Standard errors are clustered by dyad.

While key results presented in Table 2.2 are based on an analysis of states that have experienced any type of a coup (successful or failed) in the previous three years, one must wonder about successful coups, which lead to the replacement of the regime. A lower conflict propensity among states that have both suffered a deadly dispute and experienced a regime change precipitated by a coup could reflect some artifact of regime changes that occur in post-conflict environments. For example, perhaps the military installs a regime that is less willing to expose the armed forces to the costs of conflict. In order to determine whether this possibility is driving the results presented so far, I conduct an analysis based on coups that were attempted, but failed to replace the state's leadership. Since coup attempts and successes can sometimes occur in close succession, I also control for the presence of a successful coup within the previous three years.

The results of the tests based on the THREE YEAR COUP ATTEMPT LAG variable are presented in Table 2.3, and corroborate earlier findings. Dyads containing at least one state at risk of a coup — as demonstrated by a recent coup attempt — are less likely to engage in disputatious behavior when the previous dispute is especially informative. This pacifying effect becomes stronger as the number of fatalities in a most recent dispute increases. In order to illustrate this effect, I compute estimates for dyads that recently experienced a coup attempt, but that vary in the extent of the battle deaths suffered in a recent dispute. All other covariates, except those required for computing the interaction terms, are held constant at their baseline values.

The estimates are presented in Figure 2.1, which shows that among states with recent coup attempts, the likelihood of dispute recurrence declines with the number fatalities suffered in the previous dispute. Compared to the case in which a dyad had suffered an attempted coup but no fatalities, dyads in which at least one state experienced a coup and the sample mean of approximately 13 battle deaths in its most recent dispute are ten percent less likely in any period to experience another dispute. Compared to the case of zero fatalities and no coups, coup attempt dyads with the mean fatality level were about four percent less likely to suffer a dispute recurrence. Now consider what happens when the number of fatalities in a recent dispute grows. In contrast to the case of no coup attempt and no fatalities, a dyad with a coup attempt and the 75th percentile of fatalities (approximately 64 battle deaths) is ten percent less likely to experience a subsequent

dispute. If the comparison case has a coup attempt but no fatalities, coup-attempt dyads with 64 battle deaths are 16.5 percent less likely to engage in another dispute in any subsequent time period.



**Figure 2.1:** Fatality Level and Dispute Recurrence in Dyads with Recent Coup Attempts

## 2.9.2 Third-Party Disputes

While these results provide support for the theory, further analysis is necessary. Fighting can exhaust states, reducing their ability to compete repeatedly. The effects of war fatigue may be felt especially strongly in places where civil-military relations are contentious. If engaging in costly disputes puts additional strain on civil-military institutions, rulers of coup-prone states may be particularly cautious following conflicts in which the armed forces have suffered. The effects of conflict can also shape politics in other ways, whether through social, economic, or political dynamics (Buono de Mesquita, Siverson and Woller 1992; Tilly 1992).

I therefore develop a research design to isolate the effect of information about the strategic environment based on third party disputes. Consider a dyad composed of states A and B. While the best way to learn about an opponent's type is to compete directly, information may also be gleaned from conflicts between a potential opponent and third-parties. The logic of signaling remains the same in these third-party disputes: the willingness to fight intensely separates types, revealing information about the states involved. State A can use the information provided by state B if the latter engages in a costly conflict with a third party, state C. Importantly, because this form of indirect learning does not involve the participation of state A, there is no war exhaustion and other conflict-related maladies are minimized. One challenge is that conflicts between states B and C are less relevant to state A. The circumstances of conflict often vary considerably across different cases. However, to the extent that the peculiarities of conflict between two states limit the flow of germane information to other parties, the predicted effects should be harder to observe, thereby reducing the chances of identifying significant relationships.

In order to evaluate these third party effects, I build a dataset that utilizes directed-dyad-months as the unit of analysis. Directed-dyads allow me to observe whether state A is more or less likely to *initiate* a dispute against state B given the casualties incurred by state B in its recent disputes against other parties, and alternatively, to evaluate state B's behavior conditional on state A's third party conflicts. The key independent variable in each test is an interaction term measuring:

$$\text{Interaction}_{it} = B\text{'s Costs in Third Party Conflict}_{is} \times A\text{'s Civil-Military Strife}_{it}, \quad (2.8)$$

where Costs in Third Party Conflict is the sum of battle deaths for state B in its most recent conflict periods against all states, and Civil-Military Strife is again a dichotomous indicator of whether a state has suffered a coup attempt during some recent period of time.<sup>12</sup> Most notably, the PRECISE FATALITY LEVEL, LN for the most recent dispute between states in each dyad is included in each model. This helps to ensure that variation

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<sup>12</sup>As is mentioned previously, observing coup-attempts rather than an indicator inclusive to coup successes helps minimize the possibility that conflict behavior following a coup is driven by a change in leadership forced by the military.

in the conflict behavior of state B is not due to its previous encounter with state A.

**Table 2.4:** Cox Hazards Analysis of Coup Attempts and the Initiation of Subsequent Disputes, 1950-2001

	(1)	(2)	(3)	(4)
COUP ATTEMPT $\times$ STATE B FAT. LEV, LN	-0.0668* (0.0270)	-0.0678* (0.0271)	-0.0583* (0.0285)	-0.0589* (0.0283)
THREE YEAR COUP ATTEMPT LAG <sub>A</sub>	0.2759 (0.1709)	0.2597 (0.1705)	0.2637 (0.1735)	0.2598 (0.1735)
STATE B FATALITY LEV, LN <sup>‡</sup>	0.0023 (0.0108)	0.0031 (0.0109)	0.0003 (0.0120)	0.0020 (0.0122)
NUMBER OF CONCURRENT CONFLICTS <sup>‡</sup>	0.6663*** (0.1898)	0.6671*** (0.1917)	0.7566** (0.2339)	0.7405** (0.2300)
DYADIC FATALITY LEVEL, LN <sup>‡</sup>	-0.0058 (0.0152)	-0.0065 (0.0152)	-0.0170 (0.0166)	-0.0194 (0.0167)
IMPOSED SETTLEMENT <sup>‡</sup>	-0.8086*** (0.1649)	-0.8053*** (0.1645)	-1.3765*** (0.2560)	-1.3777*** (0.2884)
NEGOTIATED SETTLEMENT <sup>‡</sup>	-0.3437** (0.1104)	-0.3503** (0.1105)	-0.3356** (0.1202)	-0.3323** (0.1188)
DURATION OF LAST DISPUTE (DAYS) <sup>‡</sup>	0.0009* (0.0004)	0.0009* (0.0004)	0.0010* (0.0005)	0.0010* (0.0005)
SUCCESSFUL COUP IN PREV. 3 YEARS <sub>A</sub>		0.0934 (0.1912)	0.1431 (0.1980)	0.0922 (0.1792)
SUCCESSFUL COUP IN PREV. 3 YEARS <sub>B</sub>		0.1104 (0.1268)	0.1095 (0.1299)	0.1253 (0.1296)
DIFF. IN POLITY2			-0.0016 (0.0069)	0.0001 (0.0071)
DIFF. IN CAPABILITIES <sub>t-1</sub>				-1.0382 (0.9458)
ENDED IN DRAW <sup>‡</sup>				0.0201 (0.1675)
<i>N</i>	344282	344282	294438	293324

Levels of significance: <sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

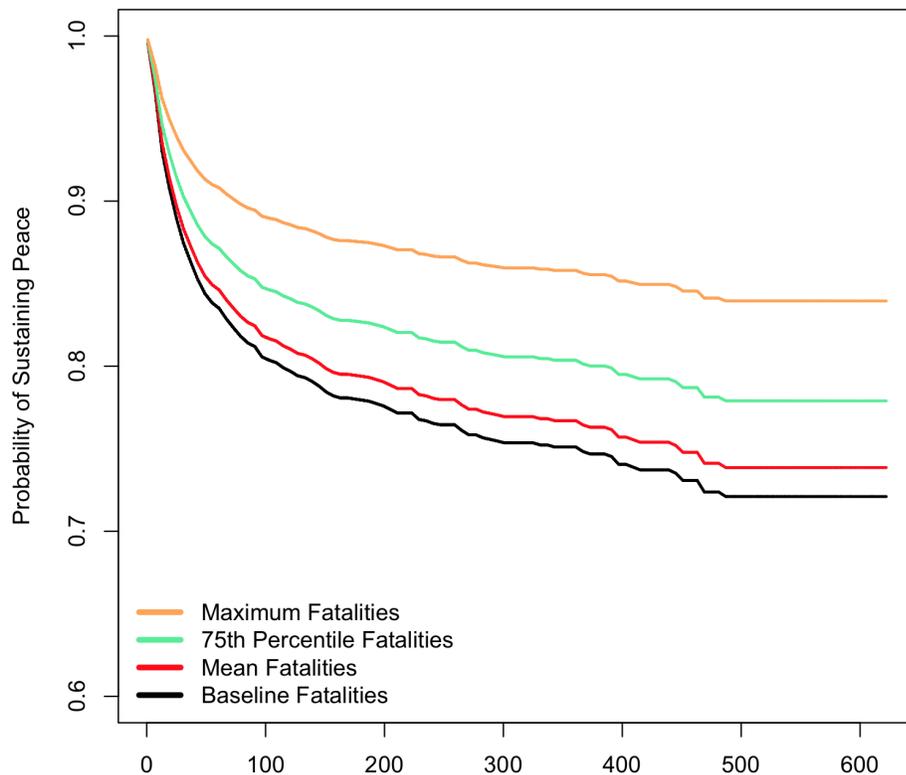
<sup>‡</sup>Variables that are time invariant since most recent dispute.

Note: Standard errors are clustered by dyad.

The results presented in Table 2.4 provide additional support for the predictions of the model. Information about opponents revealed in conflicts against third-parties makes states with recent coup attempts *less* likely to initiate a subsequent dispute. This effect is illustrated in Figure 2.2.<sup>13</sup> The finding is significant in that it shows that coup-prone states become less aggressive in foreign policy as more information is revealed

<sup>13</sup>As with Figure 2.1, all covariates not needed to compute the marginal effect for the interaction term are held at their baseline values.

about the type of opponent they may face, even if 1) the fighting does not directly involve these regimes and 2) the conflict against a third-party is costly for their opponent. One might reasonably expect that these costs could increase the vulnerability of opponents, making them easier targets and raising the likelihood of the initiation of subsequent disputes. However, consistent with the informational story, the results instead suggest a negative effect of third-party conflicts for these coup-prone states. To be more precise, states with recent coup-attempts facing opponents that have suffered the sample mean number of battle deaths in third-party conflicts (301 fatalities) are 28.5 percent less likely to reinitiate a dispute than a state that has suffered a recent coup but is facing an opponent without any battle deaths in its recent disputes. States facing an opponent with the 75th percentile number of third-party fatalities (8014 battle deaths) and a recent coup attempt are almost 41 percent less likely to reinitiate a dispute than a recent coup-attempt state facing a no fatality opponent.



**Figure 2.2:** Third-Party Fatalities and Dispute Recurrence in States with Recent Coup Attempts

### 2.9.3 Conflict Decisiveness

So far, the results of the empirical tests suggest that information revealed about the strategic environment — as measured through the costliness of contests — leads to a decline in the disputatiousness of coup-prone states. Yet the costs incurred during conflict are only one way in which uncertainty about the strategic environment may be resolved. In order to assess the strength of the informational mechanism, I evaluate an alternative measure of information based on the decisiveness of disputes. If Hypothesis 3 is supported, states at risk of a coup are less likely to behave aggressively toward opponents following contests in which these foes have lost or yielded quickly. Because I am interested in differentiating between which state in a dyad has lost in a previous dispute, I again conduct tests on directed dyads. Furthermore, since the phenomenon of interest is still a conditional one, I utilize an interaction term which measures the effect of facing a state which lost quickly in a dyad's last dispute, conditional on whether the potential initiator has experienced a recent coup-attempt:

$$\text{Interaction}_{it} = \text{Facing a Quick Loser}_{is} \times \text{Civil-Military Strife}_{it}. \quad (2.9)$$

The results presented in Table 2.5 provide some additional support for the informational mechanism. States that have recently experienced a coup attempt are approximately *half* as likely to initiate a subsequent dispute against opponents that suffered a quick defeat in their most recent contest compared to states with recent coup attempts that are not facing a quick loser.<sup>14</sup> In other words, if the decisiveness of a dispute is informative, coup-prone states that receive this information are less aggressive in the periods that follow. This is an especially important result, since it shows that coup-prone states are less disputatious toward opponents that have proven themselves easy to defeat, exactly the behavior that the theoretical model would predict.

An alternative explanation might be that decisive disputes reduce the need to fight again by highlighting the clear advantage of the winning side. If this is true, we should also expect states that have *not* had a recent coup attempt to be less likely to engage again

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<sup>14</sup>This marginal effect is determined by exponentiating the coefficient for the interaction:  $\exp(-0.6795) = 0.503$ .

in disputes with foes that have lost quickly. The positive and significant coefficient for the STATE B IS QUICK LOSER variable suggests the opposite. It is only among states that have suffered a recent coup attempt that the realization of a markedly weak or irresolute opponent results in a lower dispute propensity. This finding could perhaps reflect some other feature of the calculus associated with engaging in disputes. The result is critical, however, since it shows that another plausible mechanism for information revelation is correlated with a reduction in the frequency of disputes among coup-prone states. In this, the analysis corroborates the results based on the costliness of disputes, and provides additional empirical support for the theoretical dynamics outlined in the formal model.

**Table 2.5:** Cox Hazards Analysis of Coup Attempts and Quick Losers, 1950-2001

	(1)	(2)	(3)	(4)
COUP ATTEMPT×STATE B QUICK LOSER	-0.6148 <sup>†</sup> (0.3464)	-0.6207 <sup>†</sup> (0.3513)	-0.6795 <sup>†</sup> (0.3704)	-0.6858 <sup>†</sup> (0.3703)
STATE B IS QUICK LOSER	0.1933* (0.0964)	0.1963* (0.0966)	0.1895 <sup>†</sup> (0.1056)	0.1900 <sup>†</sup> (0.1058)
THREE YEAR COUP ATTEMPT LAG <sub>A</sub>	0.0892 (0.1541)	0.0687 (0.1527)	0.1261 (0.1514)	0.1214 (0.1524)
NUMBER OF CONCURRENT CONFLICTS <sup>‡</sup>	0.6633*** (0.1918)	0.6647*** (0.1940)	0.7526** (0.2342)	0.7380** (0.2298)
DYADIC FATALITY LEVEL, LN <sup>‡</sup>	-0.0069 (0.0145)	-0.0072 (0.0146)	-0.0191 (0.0158)	-0.0208 (0.0159)
IMPOSED SETTLEMENT <sup>‡</sup>	-0.8145*** (0.1659)	-0.8111*** (0.1655)	-1.3806*** (0.2561)	-1.3955*** (0.2565)
NEGOTIATED SETTLEMENT <sup>‡</sup>	-0.3214** (0.1095)	-0.3273** (0.1095)	-0.3132** (0.1191)	-0.3065** (0.1184)
DURATION OF LAST DISPUTE (DAYS)	0.0011* (0.0005)	0.0012* (0.0005)	0.0012* (0.0005)	0.0013* (0.0005)
SUCCESSFUL COUP IN PREV. 3 YEARS <sub>A</sub>		0.1122 (0.1901)	0.1653 (0.1982)	0.1093 (0.1797)
SUCCESSFUL COUP IN PREV. 3 YEARS <sub>B</sub>		0.0978 (0.1265)	0.0978 (0.1291)	0.1059 (0.1284)
DIFF. IN POLITY2			-0.0026 (0.0068)	-0.0006 (0.0070)
DIFF. IN CAPABILITIES <sub>t-1</sub>				-1.0389 (0.9177)
<i>N</i>	344282	344282	294438	294240

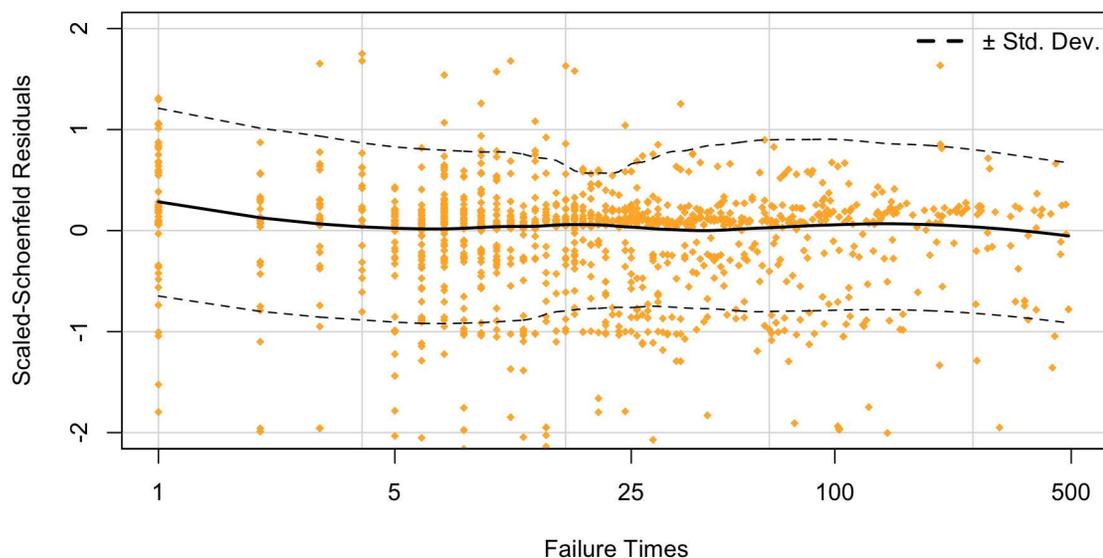
Levels of significance: <sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

<sup>‡</sup>Variables that are time invariant since most recent dispute.

Note: Standard errors are clustered by dyad.

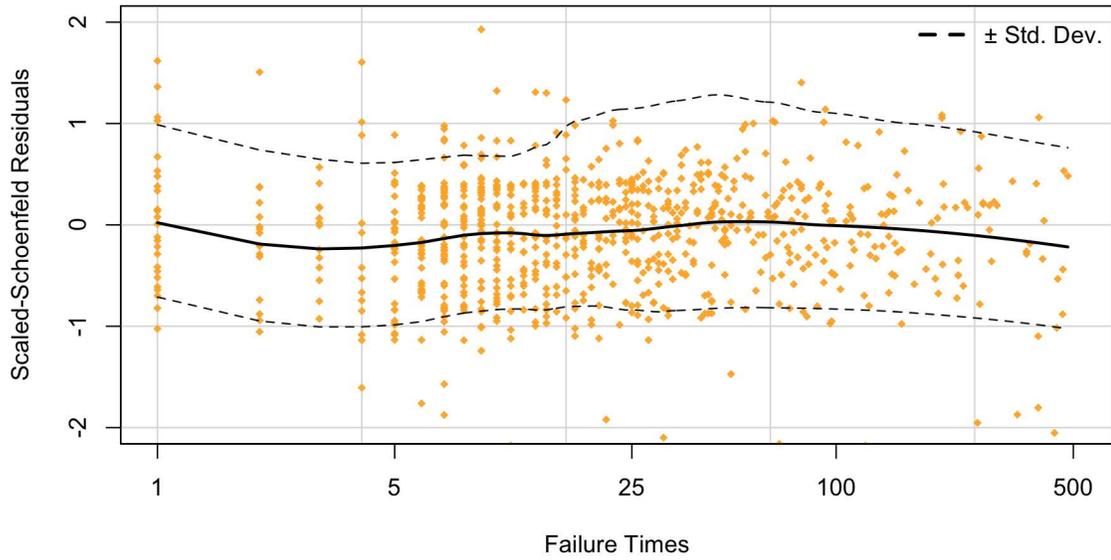
## Robustness Checks: Proportional Hazards

In constructing these empirical tests, I made a key assumption about the functional form of each model. I now check the robustness of the main results with respect to this concern. While the Cox model is useful for its flexibility, estimates depend on the assumption of proportional hazards. That is, the regressors must have the same proportional effect on the likelihood of a MID relative to the baseline hazard across the domain of potential failure times (Fisher and Lin 1999). There are a variety of methods that allow researchers to test for violations of the proportionality assumption, and I utilize one of the most common: scaled-Schoenfeld residuals (Schoenfeld 1982). This method is particularly useful because it allows for a visual display of potential violations of the proportionality assumption for each regressor.

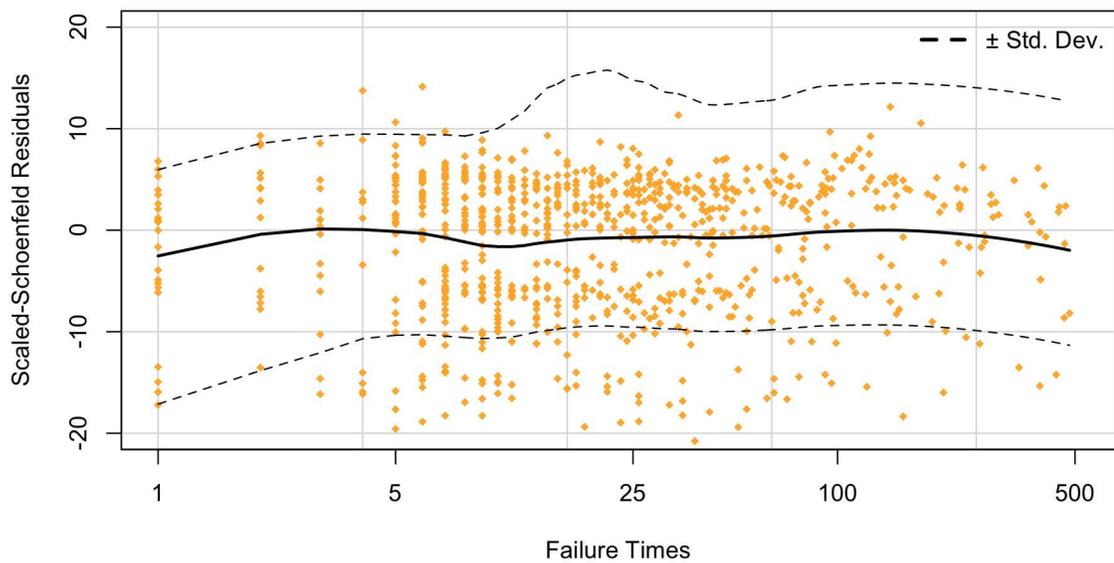


**Figure 2.3:** Proportional Hazards: Coup Attempt  $\times$  Fatality Lev, ln (Table 2.3, Model 4)

Due to space limitations, I present only the plots for the main interaction terms from the fully-specified models in Table 2.3, the analysis of coup attempts; Table 2.4, the analysis of third party effects; and Table 2.5, the analysis of quick losers. Each figure illustrates the scaled-Schoenfeld residuals relative to the domain of failure times. If the proportionality assumption is violated, the plot will reveal that these residuals vary



**Figure 2.4:** Proportional Hazards: Coup Attempt  $\times$  State B Fatality Lev, ln (Table 2.4, Model 4)



**Figure 2.5:** Proportional Hazards: Coup Attempt  $\times$  State B Quick Loser (Table 2.5, Model 4)

significantly as a function of time. In order to identify trends in the residuals, I fit a lowess line along with a one standard deviation confidence interval.<sup>15</sup> As both Figures 2.3 and 2.4 reveal, the confidence intervals for the lowess estimates overlap the “0” line all the way across the domain of potential failure times.<sup>16</sup> As such, one cannot reject the null hypothesis that the effect of the regressors is independent of time (conditional on the baseline hazard), thereby supporting the claim that the proportional hazards assumption has *not* been violated for these variables.

## 2.10 Conclusion

Rulers need militaries for protection against external threats, but must then worry about falling victim to their own guardians. Because the risk of military disloyalty is inherently linked to the threat environment facing states, one must wonder how rulers may manipulate this environment in order to enhance regime security. I show that civil-military strife does affect the behavior of regimes in the international sphere, albeit in a counterintuitive way. Aggressive actions are necessary to lock-in the large threats that help to ensure military loyalty, but this is only useful when rulers are uncertain about the nature of the threat. If threats are small for certain, rulers prefer to avoid aggressive actions that inflate the threat in order to economize on defense and avoid the need to strengthen a competitor for political power. Alternatively, definite large threats require no additional aggressive behavior on the part of rulers, who must simply prepare to face these threats.

In this, I highlight a novel mechanism through which domestic political instability is linked to international behavior. Unlike studies of diversionary war, the military’s loyalty is tied neither to popular opinion nor assessments of the ruler’s competence. The military is willing to defect only when the external threat is not too imposing, even if it

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<sup>15</sup>In this context, a one standard deviation confidence interval is equivalent to a 68 percent confidence interval. Even with such a high tolerance for Type 1 error, it is not possible to reject the null hypothesis that the lines are significantly different from zero for any of the key independent variables.

<sup>16</sup>Figure 2.3 is based on the fully specified model 4 in Table 2.3, Figure 2.4 is based on analysis from the fully-specified model 4 in Table 2.4, and Figure 2.5 is based on the fully specified model 4 in Table 2.5. The test of the proportional hazards assumption for the RECENT COUP  $\times$  FATALITY LEV, LN variable in Table 2.2 is not illustrated due to limitations on space, though it also satisfies the proportionality assumption.

would otherwise wish to replace the government. Focusing on civil-military dynamics is important for two reasons. First, military disloyalty is the preeminent irregular threat to the survival of political leaders around the globe (Goemans, Gleditsch and Chiozza 2009). Second, contentious civil-military relations can create a situation in which rulers have both limited access to accurate strategic assessments and a willingness to undertake aggressive actions in order to mitigate the effects of uncertainty about the threat environment. In this, the informational asymmetries that result from civil-military strife within states can influence the risk of conflict between states.

## 2.11 Appendix A: Proofs

**Proof of Lemma A.** When  $G$  does not launch a coup, his payoff reflects the probability of receiving his status quo benefit after the threat is defeated:  $p(m, T; \theta)b_i$ . If  $G$  is disloyal, in contrast, his payoff depends on whether the coup is successful or not. If the coup fails,  $G$  is eliminated and receives 0. If the coup succeeds,  $G$  gets control of the state's resources, normalized to 1, minus the costs of a coup,  $c$ .  $G$ 's expected payoff from a coup is therefore  $p(m, 1; \theta)p(m, T; \theta) - c$ . By subgame perfection,  $G$  stays loyal if:

$$p(m, T; \theta) [p(m, 1; \theta) - b_i] < c,$$

is disloyal if the strict inequality is reversed, and is otherwise indifferent.

Solving for  $T$  shows that  $G$  is disloyal if  $T < T_i^*(m, \theta)$ , in which  $T_i^*(m, \theta)$  is defined in (2.3). This demonstrates the sufficiency of the claim. I can now show that  $T_i^*(m, \theta)$  is increasing in  $\theta m$ . Let  $x \equiv \theta m$  and observe that

$$\frac{dT_i^*}{dx} = \left(\frac{1}{c}\right) \left[1 - (b_i + c) - \frac{1}{(1+x)^2}\right],$$

meaning that

$$\text{sgn}\left(\frac{dT_i^*}{dx}\right) = \text{sgn}\left(1 - (b_i + c) - \frac{1}{(1+x)^2}\right),$$

which is positive whenever  $x^2 + 2x - \frac{b_i+c}{1-(b_i+c)} > 0$ . This quadratic yields a vertical parabola that opens upward. The smaller root of the quadratic is negative. This implies

that the inequality is satisfied when:

$$x > \frac{1}{\sqrt{1 - (b_i + c)}} - 1.$$

Since  $T_i^*(m, \theta) \geq 0$ ,

$$x \geq \frac{b_i + c}{1 - (b_i + c)} > \frac{1}{\sqrt{1 - (b_i + c)}} - 1.$$

Because  $b_i + c < 1$  for all  $b_i$  under Assumption 4, the second inequality is always satisfied if  $T_i^*(m, \theta)$  is non-negative. This shows that  $T_i^*(m, \theta)$  is increasing in both  $m$  and  $\theta$  when  $T_i^*(m, \theta) \geq 0$ .

In order to prove necessity, I must show that there is no equilibrium in which  $G$  is disloyal with positive probability while indifferent. Consider first a case in which an indifferent  $G$  launches a coup with positive probability, or even for certain. Note that the ruler strictly prefers to avoid a coup, since maintaining  $G$ 's loyalty always makes him better off:  $p(m, T; \theta) - m > p(m, T; 1)p(1, \theta m; 1) - m$ . If  $G$  is indifferent, it must be true that  $T_i^*(m, \theta) = T > 0$ . Because  $T_i^*(m, \theta)$  is increasing in  $m$ ,  $R$  prefers to decrease  $m$  by some trivial amount to ensure that  $T_i^*(m) < T$ , thereby maintaining  $G$ 's loyalty. However, this contradicts the requirement of subgame perfect equilibrium that  $R$  play an optimal strategy. As a result, there can be no equilibrium in which an indifferent  $G$  launches a coup with positive probability.

**Proof of Lemma B.** The ruler's payoff for avoiding a coup is  $U = p(m, T; \theta) - m$ , which she receives when the loyalty threshold  $T \geq T_i^*(m, \theta)$  obtains. Solving for  $T_i^*(m, \theta) \geq 0$  yields  $(1 - (b_i + c))\theta^2 m^2 - (b_i + c + cT)\theta m - cT \leq 0$ . The discriminant for this quadratic is  $(b_i + c - cT)^2 + 4cT > 0$ . Assumption 4 ( $\bar{b} + c < 1$ ) means that the smaller of the two roots is negative, so let the amount of resources allocated by  $R$  at the loyalty threshold,  $S_i^*(T)$ , be the larger root given by (2.4). Because  $S^*(T)$  is positive, the constraint  $T \geq T_i^*(m, \theta)$  holds for all  $\theta m < S_i^*(T)$ .

$R$ 's utility is concave in  $m$  and strictly increasing in  $\theta$ :

$$\frac{dU}{dm} = \frac{\theta T}{(\theta m + T)^2} - 1 \quad \text{and} \quad \frac{dU}{d\theta} = \frac{mT}{(\theta m + T)^2} > 0.$$

The solution for the first-order condition for  $m$  is then

$$\tilde{m}(\theta) = \max \left( 0, \sqrt{\frac{T}{\theta}} - \frac{T}{\theta} \right),$$

which means that the unconstrained maximum, the optimal level of resources for facing the external threat, is at  $(\tilde{m}(\bar{\theta}), \bar{\theta})$ . Let the loyalty of  $G$  with this “defense optimal” amount of resources be  $S(T) = \bar{\theta} \tilde{m}(\bar{\theta})$ . If  $S(T) \leq S_i^*(T)$ , then the level of disloyalty with the defense optimal allocation does not exceed the level at which a coup is triggered. In this case, the unconstrained maximum is the solution to the maximization problem for  $R$ .

Alternatively, in the case where  $S(T) > S_i^*(T)$ , providing the defense optimal amount of resources would trigger a coup. Because  $R$  strictly prefers to avoid coups, the loyalty constraint will bind, and  $R$  allocates the maximum amount of resources she can without triggering a coup, which is  $\theta m = S_i^*(T)$ . The ruler’s payoff under  $S_i^*(T)$  is therefore

$$U = \frac{S_i^*(T)}{S_i^*(T) + T} - \frac{S_i^*(T)}{\theta}.$$

This payoff is strictly increasing in  $\theta$ . As a result,  $R$  selects  $\bar{\theta}$  when  $S(T) > S_i^*(T)$  as well, even though she will need to handicap the general by allocating fewer resources for defense ( $m$ ) in order to ensure that the loyalty threshold is not violated.

**Proof of Lemma C.** It has already been established that so long as the ruler knows  $T$ , she never allocates any  $m_i^*(T)$  that would trigger a coup. It is therefore appropriate to consider only the ruler’s utility for avoiding a coup, which is  $p(m, T; \theta) - m$ , or, equivalently:

$$U = \frac{\theta m}{\theta m + T} - m.$$

Consider  $\theta$  first.  $R$  always prefers to hire  $G$  with  $\bar{\theta} > 1$  and to face the threat alone if the maximum competence general is  $\bar{\theta} \leq 1$ .

When resources are unconstrained ( $S(T) \leq S_i^*(T)$ ), the envelope theorem shows that

$$\frac{dU(m_i^*(\bar{\theta}), \bar{\theta})}{d\bar{\theta}} = \frac{\partial U(m_i^*(\bar{\theta}), \bar{\theta})}{\partial \bar{\theta}} = \frac{m_i^*(\bar{\theta})T}{(\bar{\theta}m_i^*(\bar{\theta}) + T)^2} > 0.$$

Recall that the ruler's competence is normalized to 1, which means that her payoff when the loyalty constraint does not bind for hiring a general of  $\theta = 1$  is equivalent to the payoff she receives for not hiring a general. This implies that when  $\bar{\theta} < 1$ ,  $R$  is strictly better off by facing the threat with her own competence whether the constraint binds or not. Furthermore, if the loyalty constraint would bind ( $S(T) > S_i^*(T)$ ), then  $R$  would be worse off by hiring a general of competence  $\theta = 1$ , since maintaining  $G$ 's loyalty would require her to constrain  $m$  below the defense optimal amount without yielding additional competence for facing the external threat.

When  $\bar{\theta} > 1$ ,  $R$  prefers to hire the general so long as he will remain loyal. However, a high enough  $\bar{\theta}$  will cause  $S(T) > S_i^*(T)$ , forcing  $R$  to constrain  $m$  to keep  $G$ 's loyal. I now show that  $R$  would still prefer to hire  $G$  in this case, when  $S(T) > S_i^*(T) \implies m_i^*(T) = S_i^*(T)/\bar{\theta}$ . The decision to hire a general yields

$$\frac{S_i^*(T)}{S_i^*(T) + T} - \frac{S_i^*(T)}{\bar{\theta}} > 0.$$

The inequality holds if  $\bar{\theta} > S_i^*(T) + T$ . The fact that  $S(T) > S_i^*(T)$  further implies that  $\sqrt{\bar{\theta}T} > S_i^*(T) + T$ , which reduces to  $\bar{\theta} > (S_i^*(T))^2/T + 2S_i^*(T) + T > S_i^*(T) + T$ . So whenever the loyalty constraint is binding, the ruler's payoff when hiring a general must be strictly positive.

Now consider the decision not to hire a general with optimal allocation  $m = \sqrt{T} - T$

$$\frac{\sqrt{T} - T}{\sqrt{T}} - \sqrt{T} + T = 1 + T - 2\sqrt{T} > 0.$$

Because  $T \geq 1$ , not hiring the general means that the optimal allocation is zero, thereby yielding the ruler a payoff of zero. This means that  $R$  is always willing to hire a general, even if she must place constraints on the resources that flow to the military in order to ensure his loyalty.

Consequently,  $R$  hires a general if  $\bar{\theta} > 1$ , but not if  $\bar{\theta} \leq 1$ , and that this choice is

independent of  $T$  so long as  $T \geq 1$ , which it is by construction. It is therefore appropriate to consider  $R$ 's utility for inflating the threat in terms of the resources that must be devoted to face threats of differing severity.

Under Assumption 5, military allocations are strictly increasing in the size of the threat:  $m_i^*(T_E) > m_i^*(T_B) > 0$ .  $R$ 's utility will therefore always be greater when she faces a baseline threat, since:

$$\frac{\bar{\theta}m_i^*(T_B)}{\bar{\theta}m_i^*(T_B) + T_B} - m_i^*(T_B) > \frac{\bar{\theta}m_i^*(T_E)}{\bar{\theta}m_i^*(T_E) + T_E} - m_i^*(T_E) \iff U_B > U_E.$$

Because  $R$ 's utility is strictly greater whenever she is faced with the smaller, baseline threat, she will never inflate the threat with complete information about the threat environment. Since  $m_i^*(T_B)$  is the utility maximizing amount of resources for facing  $T_B$ , just like  $m_i^*(T_E)$  is for threats of size  $T_E$ ,  $R$  devotes  $m = m_i^*(T_B)$  resources when  $T = T_B$  and  $m = m_i^*(T_E)$  resources when  $T = T_E$ .

**Proof of Lemma D.** In order to identify the conditions under which  $R$  would choose to inflate the threat environment, it is first necessary to establish what happens if  $R$  has no control over it.

NO COUP. Suppose that  $G$  remains loyal no matter how large or small the threat is. Put differently, what if there is no possibility of a coup in equilibrium. For this to be the case,  $m$  cannot exceed the allocation that preserves  $G$ 's loyalty when  $T = T_B$  because if  $m > m_i^*(T_B)$ , then  $G$  would launch a coup if the threat is actually baseline. Alternatively, allocating any  $m < m_i^*(T_B)$  would decrease  $R$ 's payoff under both  $T_B$  and  $T_E$ , since she could improve her chances of defeating the external threat by increasing  $m$  to  $m_i^*(T_B)$  (under Assumption 5) while still avoiding any chance of a coup.

The highest expected payoff that the ruler can obtain without risking a coup is then

$$U_{-c}(q) = q \left( \frac{\theta m_i^*(T_B)}{\theta m_i^*(T_B) + T_B} \right) + (1 - q) \left( \frac{\theta m_i^*(T_B)}{\theta m_i^*(T_B) + T_E} \right) - m_i^*(T_B). \quad (2.10)$$

Because  $U_{-c}$  is a linear function of  $q$  and  $T_B < T_E$ ,  $R$ 's utility when making the allocation

that certainly avoids a coup ( $m_i^*(T_B)$ ) is strictly increasing in the probability that the threat is indeed baseline:

$$\frac{dU_{-C}}{dq} = \frac{\theta m_i^*(T_B)(T_E - T_B)}{(\theta m_i^*(T_B) + T_B)(\theta m_i^*(T_B) + T_E)} > 0.$$

It is now necessary to demonstrate that when  $\theta \leq 1$ , the ruler is better off by not hiring a general. Consider the ruler's utility from facing the threat alone  $U_A$ , and compare it to the case where the general is hired and remains loyal for certain. Put differently,  $U_A > U_{-C}$ , which is true whenever

$$q[p(m, T_B; 1) - p(m, T_B; \theta)] + (1 - q)[p(m, T_E; 1) - p(m, T_E; \theta)] > 0.$$

This inequality holds when the bracketed terms are both positive, so it will be sufficient to show that they are. Because the probability of defeating the threat,  $p(m, T; \theta)$ , is increasing in the general's competence,  $\theta$ , the bracketed terms are positive for any  $\theta > 1$ , zero when  $\theta = 1$  and negative when  $\theta < 1$ . This means that  $U_A > U_{-C}$  whenever  $\theta \leq 1$  for all  $m > 0$  and  $q \in (0, 1)$ .

**PROBABILISTIC COUP.** Suppose instead that the general remains loyal under the elevated threat ( $T_E$ ), but launches a coup if the threat is baseline ( $T_B$ ). This requires that  $T_B < T_i^*(m, \theta) \leq T_E$ . Because  $T_i^*$  is increasing in  $\theta$  and  $m$  (see Lemma A and its proof), the optimal allocation is therefore a  $m_c \in (m_i^*(T_B), m_i^*(T_E)]$ .

The ruler's expected payoff in an equilibrium in which there exists a positive probability of a coup is

$$U_C(q) = q \left[ \left( \frac{1}{1 + \theta m} \right) \left( \frac{m}{m + T_B} \right) - m \right] + (1 - q) \left( \frac{\theta m}{\theta m + T_E} - m \right). \quad (2.11)$$

The unconstrained first order condition is then

$$\begin{aligned}
\frac{\partial U_C}{\partial m} &= \frac{q(T_B - \theta m^2)}{(1 + \theta m)^2(m + T_B)^2} + \frac{(1 - q)\theta T_E}{(\theta m + T_E)^2} - 1 \\
&= q \left[ \frac{T_B - \theta m^2}{(1 + \theta m)^2(m + T_B)^2} - \frac{\theta T_E}{(\theta m + T_E)^2} \right] + \frac{\theta T_E}{(\theta m + T_E)^2} - 1 \\
&\equiv q\zeta + \frac{\theta T_E}{(\theta m + T_E)^2} - 1 = 0.
\end{aligned} \tag{2.12}$$

The derivative attains its maximum at  $m = 0$  since it is strictly decreasing in  $m$ . The derivative is strictly positive only if  $qT_E + (1 - q)\theta T_B > 1$ . This condition holds because  $T \geq 1$  by assumption. Since  $\lim_{m \rightarrow \infty} \frac{\partial U}{\partial m} = -1$  there is a unique  $m_C(q) > 0$  that satisfies the first order condition. It is now possible to assess whether the constraints are satisfied by this solution.

It is first necessary to show that  $m_C(q)$  is decreasing. By the implicit function theorem, equation (2.12) implies that

$$\frac{dm_C}{dq} = - \frac{\partial^2 U_C}{\partial m \partial q} \bigg/ \frac{\partial^2 U_C}{\partial m \partial m_C}.$$

As a result,

$$\frac{\partial^2 U_C}{\partial m \partial m_C} < 0 \Rightarrow \text{sgn} \left( \frac{dm_C}{dq} \right) = \text{sgn} \left( \frac{\partial^2 U_C}{\partial m \partial q} \right) = \text{sgn}(\zeta) = \text{sgn} \left( 1 - \frac{\theta T_E}{(\theta m + T_E)^2} \right),$$

where the last step also follows from (2.12) and the fact that  $q > 0$ . This means that

$$\text{sgn} \left( 1 - \frac{\theta T_E}{(\theta m + T_E)^2} \right) = -1 \Leftrightarrow m < \sqrt{\frac{T_E}{\theta}} - \frac{T_E}{\theta} \equiv \tilde{m}.$$

Of course,  $\tilde{m}$  is the defense optimal, unconstrained maximum for  $T_E$  in the complete information case.

The resource allocation  $m_C$  can't exceed  $\tilde{m}$ . First consider the bracketed term in (2.12), which represents  $R$ 's utility in the event that the threat is actually  $T_B$  and a coup occurs. This term strictly decreases in  $m$  since

$$\frac{T_B - \theta m^2}{(1 + \theta m)^2 (m + T_B)^2} - 1 < 0. \quad (2.13)$$

So  $R$ 's utility declines in  $m$  when a coup occurs. To show for certain that this derivative is negative, consider that it must be whenever  $T_B - \theta m^2 < (1 + \theta m)^2 (m + T_B)^2$ . The right side of the inequality is strictly increasing in  $m$ , while the left hand side is strictly decreasing. Consequently, because the inequality is satisfied whenever  $m = 0$ , it must be satisfied for any  $m > 0$ .

Consider next the second term of the payoff in (2.12), which is the complete information payoff for facing the elevated threat. Since it is already established that  $\tilde{m}$  represents the unconstrained optimum,  $R$  could do better by reducing  $m$  to  $\tilde{m}$ . As a result,  $m_C < \tilde{m}$ , which implies that  $\text{sgn}(\zeta) = -1$  and therefore that  $m_C(q)$  is strictly decreasing.

When the threat is elevated for certain (i.e.  $q = 0$ ), the ruler's payoff in (2.12) is the same as in the complete information case when  $T = T_E$ . In this context,  $m_C(0) = m_i^*(T_E) > m_i^*(T_B)$ , where we know the inequality from Assumption 5. The general launches a coup if  $T = T_B$ , but not if  $T = T_E$ , thereby satisfying the constraints. Furthermore, because the optimal (though potentially constrained) allocation for facing  $T_E$  is  $m_i^*(T_E)$ , it must be that

$$U_C(0) = \frac{\theta m_i^*(T_E)}{\theta m_i^*(T_E) + T_E} - m_i^*(T_E) > \frac{\theta m_i^*(T_B)}{\theta m_i^*(T_B) + T_E} - m_i^*(T_B) = U_N(0),$$

This implies that when  $q = 0$ , the ruler prefers to allocate the amount of resources that is appropriate for facing the elevated threat. In other words, she is willing to allocate an  $m$  that would lead to a coup if the threat is actually baseline (of course, at  $q = 0$ , the risk of a coup does not factor into this payoff).

*Case 1:*  $m_C(q) \geq m_i^*(T_E)$ . In this case, the solution for resources must be constrained at  $m_i^*(T_E)$ . Otherwise,  $G$  would launch a coup whether the threat is baseline or elevated (since  $m_C(q) > m_i^*(T_E) \implies T_i^*(m, \theta) > T_E > T_B$ ). Because  $R$ 's payoff is concave in  $m$ , it is increasing for all  $m < m_C(q)$ . Furthermore, because  $m_C < \tilde{m}$ ,  $m_C(q) \geq m_i^*(T_E)$  is only possible when  $m_i^*(T_E)$  is the constrained solution for resources when the ruler has complete information about the threat, implying that  $m_i^*(T_E) = S_i^*(T_E)/\theta$ . In order

to show that  $U_C$  is decreasing, consider that

$$\begin{aligned} \frac{dU_C}{dq} &= \frac{\partial U_C}{\partial m_i^*(T_E)} \frac{dm_i^*(T_E)}{dq} + \frac{\partial U_C}{\partial q} = \frac{\partial U_C}{\partial q} \\ &= \frac{m_i^*(T_E)}{(1 + \theta m_i^*(T_E))(m_i^*(T_E) + T_B)} - \frac{\theta m_i^*(T_E)}{\theta m_i^*(T_E) + T_E} < 0. \end{aligned}$$

The first step reflects the fact that, at the constrained solution,  $\frac{dm_i^*(T_E)}{dq} = 0$ . By letting  $m \equiv m_i^*(T_E) > 0$  for simplicity, the inequality above can be written as

$$\frac{1}{(1 + \theta m)(m + T_B)} < \frac{\theta}{\theta m + T_E}, \quad (2.14)$$

Because  $m_i^*(T_E)$  is the constrained solution to the complete information case, it follows that  $S(T_E) > S_i^*(T_E) > 0$ . This implies that  $S(T_E) > 0$ , and means that  $\theta > T_E$  must obtain, which further implies that

$$\frac{1}{(1 + \theta m)(m + T_B)} < \frac{1}{(1 + mT_E)(m + T_B)} \quad \text{and} \quad \frac{\theta}{\theta m + T_E} > \frac{T_E}{mT_E + T_E} = \frac{1}{1 + m}.$$

It is therefore possible to show that (2.14) is satisfied whenever

$$\frac{1}{(1 + mT_E)(m + T_B)} < \frac{1}{1 + m} \quad \Leftrightarrow \quad 1 + m < (1 + mT_E)(m + T_B).$$

The second inequality must hold because  $mT_E > 0$  and  $T_B > 1$ , which means that  $(1 + mT_E)(m + T_B) > m + T_B > m + 1$ . Consequently, for  $m_C \geq m_i^*(T_E)$ ,  $U_C$  is strictly decreasing in  $q$ .

*Case 2:*  $m_C(q) \in [m_i^*(T_B), m_i^*(T_E)]$ . In this case, the constraint that kept the general loyal when  $T = T_E$  will no longer bind. Because this implies that  $\frac{\partial U_C}{\partial m} = 0$  at the optimum, the envelope theorem can be used to obtain

$$\begin{aligned} \frac{dU_C}{dq} &= \frac{\partial U_C}{\partial m} \frac{dm}{dq} + \frac{\partial U_C}{\partial q} = \frac{\partial U_C}{\partial q} \\ &= \frac{m_C}{(1 + \theta m_C)(m_C + T_B)} - \frac{\theta m_C}{\theta m_C + T_E} < 0. \end{aligned}$$

When the constrained solution to the complete information case is  $m_i^*(T_E)$ , then  $\theta > T_E$

obtains, and the discussion after (2.14) applies. However, when  $m_i^*(T_E)$  is the unconstrained solution to the complete information case, the following applies instead.

It is already established that the first term in (2.11) (the ruler's payoff in the event of a coup) strictly decreases in  $m$  while the second term (the ruler's payoff for facing the elevated threat) strictly increases in  $m$ . Since  $m_C(q)$  is decreasing in  $q$ , increasing the weight on the first, bracketed term decreases  $m_C$ , which then decreases  $U_C$  as well. It is necessary to show that

$$\frac{m_C}{(1 + \theta m_C)(m_C + T_B)} - m < \frac{\theta m_C}{\theta m_C + T_E} - m.$$

Because  $m_C < \tilde{m}$ , it must be true that the right side of the inequality is strictly increasing in  $m$ . Alternatively, it is easy to see that the left side is strictly decreasing in  $m$ . Because both sides equal zero at  $m = 0$ , the inequality must be satisfied for any  $m > 0$ . This implies that  $U_C$  is strictly decreasing in  $q$  for this region. It is important to mention that since this is true of any  $m > 0$ , it also includes the case where  $m_C(q) < m_i^*(T_B)$ . Because  $G$  does not launch a coup when  $m_C(q) < m_i^*(T_B)$ , however, this cannot occur. In this scenario,  $R$  would be better off by allocating the optimal resources for the  $U_{-C}$  case.

The optimal payoff,  $U_C(m_C(q))$ , is therefore strictly decreasing in  $q$ . At  $q = 1$ , however,  $R$  prefers not to allocate so many resources as to risk a coup:

$$U_C(1) = \frac{\tilde{m}}{(1 + \theta \tilde{m})(\tilde{m} + T_B)} - \tilde{m} < \frac{\theta m_i^*(T_B)}{\theta m_i^*(T_B) + T_B} - m_i^*(T_B) = U_N(1).$$

This inequality reflects the fact that

$$\frac{\tilde{m}}{(1 + \theta \tilde{m})(\tilde{m} + T_B)} - \tilde{m} < \frac{\tilde{m}}{\tilde{m} + T_B} - \tilde{m} < \frac{\theta \tilde{m}}{\theta \tilde{m} + T_B} - \tilde{m} \leq \frac{\theta m_i^*(T_B)}{\theta m_i^*(T_B) + T_B} - m_i^*(T_B),$$

in which the final inequality is due to  $m_i^*(T_B)$  being the optimum allocation under complete information.

INFLATE. It has now been established that  $U_C(0) > U_{-C}(0)$  and  $U_C(1) < U_{-C}(1)$ , with  $U_{-C}$  strictly increasing and  $U_C$  strictly decreasing in  $q$ . Since both functions are continuous, when  $R$  has no control over the threat, there exists an intersection at a  $q^* \in (0, 1)$  beyond which  $R$  devotes  $m_i^*(T_B)$  and runs no risk of a coup but may be underprepared to

face an elevated threat, and below which  $R$  devotes some  $m_c \in (m_i^*(T_B), m_i^*(T_E)]$  which results in a coup if  $T = T_B$  but helps to protect the regime against large threats.

It is now possible to establish the conditions under which  $R$  would prefer to inflate the threat. First observe the case in which  $q \leq q^*$ . Since  $U_C$  is strictly decreasing in  $q$ , inflating the threat to make it large (in which  $q \rightarrow 0$ ) increases the utility of the ruler. This guarantees that the ruler can avoid a coup and also that the regime will be best prepared to face the external threat. Thus, the ruler inflates the threat for all  $q \leq q^*$ .

Next consider the case in which  $q > q^*$ . The ruler would prefer facing the large threat for certain when the risk of facing the elevated threat with the baseline amount of resources (allocated under  $U_{-C}$ ) becomes too grave. In order to show this, recall that since  $U_{-C}$  is increasing in  $q$  it must be that  $U_{-C}(1) > U_{-C}(q^*)$ . Lemma C establishes that the ruler is always better off facing the baseline threat rather than the elevated threat in the complete information case, which implies that  $U_{-C}(1) > U_C(0)$ . Because  $U_C$  is decreasing in  $q$ ,  $U_C(0) > U_C(q^*)$ , and  $U_{-C}(1) > U_C(0)$ , there exists a threshold  $\bar{q}$  within  $1 > \bar{q} > q^*$  at which the ruler would prefer to inflate the threat, thereby locking in the elevated threat for certain and yielding  $R$  a payoff of  $U_C(0)$ . This threshold ( $\bar{q}$ ) will therefore exist at the point where  $U_{-C}(q) = U_C(0)$ .

The ruler inflates the threat for any  $q \leq \bar{q}$ , which makes the threat  $T_E$  for certain, and means that the ruler will allocate the resources appropriate for facing the elevated threat under complete information,  $m = m_i^*(T_E)$ . Because  $R$  was willing to devote the  $m = m_i^*(T_B)$  level of resources for any  $q > q^*$ , she must be willing to allocate this amount of resources for any belief  $q > \bar{q}$  as well (since  $U_{-C}$  is increasing in  $q$  and  $\bar{q} > q^*$ ). Consequently,  $R$  devotes  $m_i^*(T_B)$  resources when  $q > \bar{q}$ , and  $m_i^*(T_E)$  resources when  $q \leq \bar{q}$ .

## 2.12 Appendix B: Varying Coup Lags

The results presented above are based on variables that denote whether a state has suffered at least one coup, coup attempt, or successful coup in the previous *three* years. I now replicate the analysis with coup lags at intervals of one, three, five, and eight years, respectively. For each test, I use models that are fully specified with the covariates from Tables 2.2 – 2.5.

**Table 2.6:** Fatality Level and All Coups Tests with Varying Coup Lags, 1950-2001

	(1)	(2)	(3)	(4)
	1 Year Lag	3 Year Lag	5 Year Lag	8 Year Lag
RECENT COUP $\times$ FATALITY LEV, LN	-0.0109 (0.027)	-0.0401 <sup>†</sup> (0.021)	-0.0179 (0.018)	-0.0061 (0.018)
RECENT COUP LAG	-0.0593 (0.127)	0.0773 (0.086)	0.0292 (0.085)	0.0694 (0.084)
PRECISE FATALITY LEVEL, LN <sup>‡</sup>	-0.0206 (0.015)	-0.0138 (0.016)	-0.0167 (0.016)	-0.0196 (0.017)
NUMBER OF CONCURRENT CONFLICTS <sup>‡</sup>	-0.1180 (0.121)	-0.1187 (0.121)	-0.1179 (0.121)	-0.1109 (0.120)
IMPOSED SETTLEMENT <sup>‡</sup>	-0.2112 (0.193)	-0.1988 (0.192)	-0.2117 (0.192)	-0.2260 (0.193)
NEGOTIATED SETTLEMENT <sup>‡</sup>	-0.1825 <sup>†</sup> (0.093)	-0.1881* (0.094)	-0.1852* (0.094)	-0.1849* (0.093)
DURATION OF LAST DISPUTE (DAYS) <sup>‡</sup>	0.0021*** (0.000)	0.0021*** (0.000)	0.0021*** (0.000)	0.0021*** (0.000)
LOW POLITY SCORE	0.0086 (0.009)	0.0092 (0.009)	0.0090 (0.009)	0.0097 (0.009)
DIFF. IN CAPABILITIES <sub><i>t</i>-1</sub>	-0.2918 (0.691)	-0.2630 (0.686)	-0.2676 (0.680)	-0.1933 (0.679)
ENDED IN DRAW <sup>‡</sup>	0.2687* (0.121)	0.2605* (0.121)	0.2662* (0.121)	0.2663* (0.121)
<i>N</i>	169986	169986	169986	169986

Levels of significance: <sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

<sup>‡</sup>Variables that are time invariant since most recent dispute.

Note: Standard errors are clustered by dyad. This table replicates the fully specified model 3 from Table 2.2 using different lags for the variables that denote when a coup occurred.

**Table 2.7:** Fatality Level and Coup Attempt Tests with Varying Coup Lags, 1950-2001

	(1)	(2)	(3)	(4)
	1 Year Lag	3 Year Lag	5 Year Lag	8 Year Lag
RECENT COUP ATTEMPT $\times$ FATAL. LEV, LN	-0.0050 (0.030)	-0.0429 <sup>†</sup> (0.024)	-0.0059 (0.020)	-0.0067 (0.019)
COUP ATTEMPT LAG	-0.1236 (0.157)	0.0640 (0.110)	0.0132 (0.103)	0.0540 (0.093)
PRECISE FATALITY LEVEL, LN <sup>‡</sup>	-0.0212 (0.015)	-0.0161 (0.016)	-0.0206 (0.016)	-0.0199 (0.016)
NUMBER OF CONCURRENT CONFLICTS <sup>‡</sup>	-0.1164 (0.122)	-0.1160 (0.121)	-0.1166 (0.121)	-0.1114 (0.121)
IMPOSED SETTLEMENT <sup>‡</sup>	-0.2091 (0.194)	-0.1920 (0.192)	-0.2164 (0.194)	-0.2260 (0.194)
NEGOTIATED SETTLEMENT <sup>‡</sup>	-0.1847* (0.093)	-0.1879* (0.093)	-0.1825* (0.092)	-0.1851* (0.092)
DURATION OF LAST DISPUTE (DAYS) <sup>‡</sup>	0.0021*** (0.000)	0.0021*** (0.000)	0.0021*** (0.000)	0.0021*** (0.000)
SUCCESSFUL COUP IN PREV. 3 YEARS	0.0166 (0.160)	0.0310 (0.093)	0.0063 (0.090)	0.0300 (0.086)
LOW POLITY SCORE	0.0086 (0.009)	0.0091 (0.009)	0.0090 (0.009)	0.0096 (0.009)
DIFF. IN CAPABILITIES <sub>t-1</sub>	-0.2922 (0.692)	-0.2621 (0.684)	-0.2633 (0.681)	-0.2001 (0.681)
ENDED IN DRAW <sup>‡</sup>	0.2716* (0.121)	0.2608* (0.122)	0.2696* (0.121)	0.2659* (0.122)
<i>N</i>	169986	169986	169986	169986

Levels of significance: <sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

<sup>‡</sup>Variables that are time invariant since most recent dispute.

Note: Standard errors are clustered by dyad. This table replicates the fully specified model 4 from Table 2.3 using different lags for the variables based on when a coup attempt or successful coup occurred.

**Table 2.8:** Third Party Fatalities Tests with Varying Coup Lags, 1950-2001

	(1)	(2)	(3)	(4)
	1 Year Lag	3 Year Lag	5 Year Lag	8 Year Lag
COUP ATTEMPT $\times$ STATE B FAT. LEV, LN	-0.0324 (0.0363)	-0.0589* (0.0283)	-0.0430 <sup>†</sup> (0.0262)	-0.0067 (0.0232)
COUP ATTEMPT LAG <sub>A</sub>	0.2168 (0.2566)	0.2598 (0.1735)	0.1225 (0.1505)	0.0685 (0.1550)
STATE B FATALITY LEV, LN <sup>‡</sup>	-0.0019 (0.0121)	0.0020 (0.0122)	0.0025 (0.0122)	-0.0000 (0.0133)
NUMBER OF CONCURRENT CONFLICTS <sup>‡</sup>	0.7404** (0.2284)	0.7405** (0.2300)	0.7425** (0.2315)	0.7446** (0.2331)
DYADIC FATALITY LEVEL, LN <sup>‡</sup>	-0.0192 (0.0167)	-0.0194 (0.0167)	-0.0200 (0.0167)	-0.0208 (0.0167)
SUCCESSFUL COUP <sub>A</sub>	0.1345 (0.2384)	0.0922 (0.1792)	0.0655 (0.1538)	0.1217 (0.1225)
SUCCESSFUL COUP <sub>B</sub>	0.0818 (0.1942)	0.1253 (0.1296)	0.1598 (0.1207)	0.2416* (0.1162)
IMPOSED SETTLEMENT <sup>‡</sup>	-1.3839*** (0.2915)	-1.3777*** (0.2884)	-1.3683*** (0.2877)	-1.3884*** (0.2879)
NEGOTIATED SETTLEMENT <sup>‡</sup>	-0.3232** (0.1184)	-0.3323** (0.1188)	-0.3325** (0.1183)	-0.3329** (0.1175)
DIFF. IN POLITY2	-0.0004 (0.0070)	0.0001 (0.0071)	0.0001 (0.0071)	0.0007 (0.0071)
DIFF. IN CAPABILITIES <sub>t-1</sub>	-1.0283 (0.9401)	-1.0382 (0.9458)	-1.0785 (0.9418)	-0.9214 (0.9418)
STATES DRAW <sup>‡</sup>	0.0220 (0.1677)	0.0201 (0.1675)	0.0170 (0.1677)	0.0089 (0.1681)
DURATION OF LAST DISPUTE (DAYS)	0.0010* (0.0005)	0.0010* (0.0005)	0.0010* (0.0005)	0.0011* (0.0005)
<i>N</i>	293324	293324	293324	293324

Levels of significance: <sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

<sup>‡</sup>Variables that are time invariant since most recent dispute.

Note: Standard errors are clustered by dyad. This table replicates the fully specified model 4 from Table 2.4 using different lags for the variables based on when a coup attempt or successful coup occurred.

**Table 2.9:** Quick Loser Tests with Varying Coup Lags, 1950-2001

	(1)	(2)	(3)	(4)
	1 Year Lag	3 Year Lag	5 Year Lag	8 Year Lag
COUP ATTEMPT $\times$ STATE B QUICK LOSER	-0.3426 (0.5092)	-0.6858 <sup>†</sup> (0.3703)	-0.5963 <sup>†</sup> (0.3056)	-0.4089 <sup>†</sup> (0.2336)
STATE B IS QUICK LOSER	0.1544 (0.1042)	0.1900 <sup>†</sup> (0.1058)	0.2005 <sup>†</sup> (0.1070)	0.2243* (0.1106)
COUP ATTEMPT LAG <sub>A</sub>	0.1369 (0.2388)	0.1214 (0.1524)	0.0370 (0.1311)	0.1276 (0.1272)
NUMBER OF CONCURRENT CONFLICTS <sup>‡</sup>	0.7402** (0.2280)	0.7380** (0.2298)	0.7402** (0.2312)	0.7477** (0.2329)
DYADIC FATALITY LEVEL, LN <sup>‡</sup>	-0.0209 (0.0159)	-0.0208 (0.0159)	-0.0210 (0.0159)	-0.0216 (0.0159)
SUCCESSFUL COUP <sub>A</sub>	0.1432 (0.2390)	0.1093 (0.1797)	0.0853 (0.1538)	0.1372 (0.1232)
SUCCESSFUL COUP <sub>B</sub>	0.0767 (0.1944)	0.1059 (0.1284)	0.1417 (0.1194)	0.2340* (0.1150)
IMPOSED SETTLEMENT <sup>‡</sup>	-1.3962*** (0.2584)	-1.3955*** (0.2565)	-1.3935*** (0.2564)	-1.4005*** (0.2566)
NEGOTIATED SETTLEMENT <sup>‡</sup>	-0.3011* (0.1183)	-0.3065** (0.1184)	-0.3099** (0.1178)	-0.3078** (0.1175)
DIFF. IN POLITY2	-0.0008 (0.0069)	-0.0006 (0.0070)	-0.0005 (0.0070)	0.0005 (0.0071)
DIFF. IN CAPABILITIES <sub>t-1</sub>	-1.0442 (0.9219)	-1.0389 (0.9177)	-1.0652 (0.9157)	-0.8977 (0.9176)
DURATION OF LAST DISPUTE (DAYS)	0.0013* (0.0005)	0.0013* (0.0005)	0.0013** (0.0005)	0.0013** (0.0005)
<i>N</i>	294240	294240	294240	294240

Levels of significance: <sup>†</sup> $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

<sup>‡</sup>Variables that are time invariant since most recent dispute.

Note: Standard errors are clustered by dyad. This table replicates the fully specified model 4 from Table 2.5 using different lags for the variables based on when a coup attempt or successful coup occurred.

## **2.13 Acknowledgements**

I would like to thank Phil Arena, Jeffrey Dixon, Jesse Driscoll, Erik Gartzke, Scott Gates, Dotan Haim, David Lake, Branislav Slantchev, Peter White, as well as participants at the 2014 Meeting of the Peace Science Society, the 2015 Meeting of the International Studies Association, and the UCSD IR Workshop for their helpful comments. I am grateful for support from the Institute on Global Conflict and Cooperation, as well as the National Science Foundation for providing a Graduate Research Fellowship. This chapter is currently being prepared for submission for publication.

## **Chapter 3**

# **Choosing the Guardians: Politically-Motivated Appointments and Military Performance**

### 3.1 Abstract

The rulers of political regimes often recruit and promote military personnel on the basis of their political, economic, or social ties to the government in order to mitigate the risk of a coup d'état. Scholars frequently claim that such practices have deleterious effects on the performance of the armed forces, thereby leaving the state exposed to other threats. I consider the competing imperatives that exist for the political leaders of coup prone states, and show that politically-motivated appointments allow rulers to increase the fighting ability of the armed forces in which they are implemented. Where rulers can reduce the willingness of military personnel to intervene in politics, they are freed from the need to implement measures that constrain the military's capacity to act. Military organizations that are led and manned by politically-reliable personnel can therefore be endowed with more coercive power than forces that lack political ties, a claim that I evaluate in the context of Iraqi actions during the Iran-Iraq War of 1980-88.

### 3.2 Introduction

When I saw hundreds of professional soldiers being dismissed, I was worried about our army's fighting abilities, but the October war and the campaign against the Kurds showed how wrong I was.

– An Iraqi Soldier in Hirst (1976)

While national security is a public good, those who provide it comprise a non-representative sample of states' residents. This pattern is so prolific that Enloe (1978, 267) observes an "almost universal tendency of militaries—the alleged quintessence of state authority—to fail to mirror the populations they are intended to protect." In many states, the distribution of military personnel is biased toward constituencies with links to the government. Rulers "stack" the military, and especially its leadership, with individuals who have social, economic, or political ties to the regime, and use these relationships to ensure that the persons with control over their states' coercive power are also among those most willing to remain loyal. After all, maintaining the fidelity of those who guard the state is crucial for regime security. Militaries remain a preeminent threat to political regimes; coups d'état led by the armed forces have replaced more political leaders than

all other forms of political instability combined over the last century (Goemans, Gleditsch and Chiozza 2009). However, while stacking may increase the military's incentive for loyalty, conventional wisdom holds that selecting personnel on the basis of their ties to the regime *hurts* the performance of the armed forces, and can leave the regime exposed to other types of threats.<sup>1</sup>

Yet when considered in the context of other imperatives, the tradeoff between a military capable of defending the state and a military comprised of personnel with special loyalties to the state fails to obtain. In fact, among coup prone states, ensuring that the military is well-connected to the regime allows political leaders to empower the armed forces and promote their effectiveness. By reducing the disposition of the military to intervene, political leaders can trust the armed forces with more coercive power. Where rulers cannot make politically-motivated appointments, in contrast, they must find other ways to reduce the chances of being overthrown. These strategies often involve limiting the ability of the armed forces to succeed in a coup, usually by constraining the flow of resources to the military, dividing its forces, and reducing their autonomy. While this may mitigate the risk of a coup, it does hurt the military's ability to fulfill its mission as guardian of the state.

The more that members of the military benefit from life under the status quo, the less constraints on the capabilities of the armed forces are necessary to ensure their loyalty. This would be a moot point if the gains in capabilities allowed by possessing a military with stronger ties to the political leadership are outweighed by the incompetence of personnel chosen on the basis of those ties. Previous research tends to posit this potential problem as a root cause of the perceived capability degrading effects of stacking. However, evidence suggests that this line of thinking imposes a false choice on political leaders, who can select on the basis of both political ties and competence. In most cases, this is exactly what we should expect, given that political ties and access to benefits like education, healthcare, as well as other social, political, and economic opportunities — key determinants of the quality of agents — are so often synonymous. Political ties and competence should therefore be positively correlated, allowing rulers the opportunity to

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<sup>1</sup>See, for example: Huntington (1957); Reiter and Stam (2002, 1998, 266); Brooks (1998); Gaub (2013); Hertog (2011); Brown, Fariss and McMahon (2015).

have their politically-reliable military and capable personnel too.

The claim that military stacking should improve the performance of the armed forces seems to contrast with evidence provided in previous research. Is it possible to reconcile these findings? The answer is yes. I argue that the conventional wisdom errs when evaluating the effect of stacking by comparing the performance of militaries with stacked forces to militaries in states that face little to no coup risk, such as consolidated democracies. This is akin to assessing the effect of a medicine on a sick patient by comparing his or her health outcome to that of a healthy individual. The outcome for the treated patient may be worse than the non-treated healthy individual, but this would tell us little about the actual effectiveness of the drug. I argue that the effect of stacking is best evaluated in the context of a common baseline—states that face coup risk. Once the appropriate counterfactual is set, it is clear that the military organizations with the closest ties to the political regime are usually the best trained and equipped. In other words, the best military forces are the ones that are the most stacked. It is therefore incorrect, for example, to suggest that stacking is a cause of the oft-cited difference in military performance between democracies and non-democracies. In fact, the argument and evidence show that stacking helps coup prone states — which tend to be non-democracies — do better relative to democracies than they would otherwise.

I evaluate these claims by examining subnational variation in Iraq during the 1980s. This strategy holds constant a number of potential confounds that are likely to bias a cross-national sample, while still allowing for the examination of the characteristics and performance of different military organizations within the state. The 1980s were a key period in Iraq's history, and provide a useful context in which to consider the decisions that rulers make when worried about both coup risk and external threats. The Ba'athist government that President Saddam Hussein controlled had taken power in a 1968 coup, and was therefore particularly cognizant of the threat from within. The 1980-1988 Iran-Iraq War also posed a threat to the survival of the Iraqi regime. While Ayatollah Ruhollah Khomeini had not started the war, his Iranian regime became intent on defeating the Iraqi state and removing the Ba'athists from power. In order to improve the fighting efficiency of the armed forces during a time characterized both by great strategic need and the risk of a coup, Hussein actually *increased* the extent of its stack-

ing by empowering the Iraqi Republican Guard. These forces proved effective on the battlefield relative to the non-stacked, regular military, and were maintained following the war as a pivotal feature of Iraqi defense policy.

### **3.3 The Benefits and Perils of Military Power**

Studies of international relations emphasize the advantages of maintaining a powerful military capability. The might of a state's armed forces determines its ability to bring coercive power to bear on others, which is seen as important by both realists, who explore the distribution of capabilities in the international system (Waltz 1979; Mearsheimer 2001), and rationalists, who focus on the relative bargaining power of states (Fearon 1995). While striving to obtain too much military might may threaten opponents and lead to war (Jervis 1978), the coercive power that militaries provide is typically described as an effective tool for achieving strategic objectives. Even if political regimes desire not to actively wield their military capabilities in order to achieve foreign policy goals, maintaining a strong military can serve as a deterrent to potential aggressors (Huth and Russett 1984, 501). Military power can also give states the capacity to defend against domestic enemies, helping to prevent rebellion and control mass unrest (Fearon and Laitin 2003; Svolik 2013).

In contrast to research on conflict, the literature on civil-military relations provides a more cautionary perspective on military strength (Finer 1988; Nordlinger 1977). Much to the chagrin of political leaders, the knowledge and skills possessed by military personnel, and the weapons systems they operate, can be used to defeat enemies on the battlefield or to overcome the obstacles to a military coup d'état. As with conventional military operations, if a coup is to succeed, opposing forces must be pacified, strategic chokepoints must be controlled, and key objectives, like capturing or killing an adversary's senior leadership, must be accomplished. Military forces are more able to conduct these operations decisively as they grow in strength. Of course, not all aspects of military power are fungible in this way. Some regimes substitute third-party security guarantees and weapons of mass destruction for the type of conventional, indigenous military might that is most threatening to regimes (Brown, Fariss and McMahon 2015).

Among traditional military forces, weapons like fighter jets and submarines that are useful for coercion in conventional conflicts are less valuable in the context of most coups d'etat.<sup>2</sup> Yet the balance of coercive power in most states consists of forces that can fulfill both types of missions on some level. Infantry and tanks that are designed to overpower an enemy's defenses and seize its territory can be used to defeat the regime's defenses and pacify its supporters.

Armed forces created to defend the regime may therefore use their capabilities to threaten it, creating a "Guardianship Dilemma" that rulers have often failed to resolve (McMahon and Slantchev 2015; Feaver 1999). Since 1950, 471 coups d'etat have been launched in attempts to replace states' political leaders. More than half of these attempts have succeeded (Powell and Thyne 2010). Even when militaries do not actually try to overthrow political leaders, the risk of a coup can be used by the armed forces as leverage for extracting more resources from the government (Collier and Hoeffler 2006). Rulers have responded to the threat posed by their own guardians by manipulating the characteristics of the armed forces in order to make them more reliable. The successful implementation of these measures is key for explaining why some rulers can survive in hostile political environments. Hafez al-Assad, Saddam Hussein, and Muammar Gaddafi, for example, ruled their respective states for decades after taking power in military coups largely because they were able to implement institutional reforms of the armed forces.<sup>3</sup>

Yet scholars have long argued that political interference in military affairs comes at the cost of degraded military capabilities (e.g. Huntington 1957; Pilster and Böhmelt 2011; Quinlivan 1999). This implies an unfortunate tradeoff for regimes; efforts to improve regime security against a coup diminish their capacity to defend against other threats. The tradeoff is thought to work in the opposite direction as well. Rulers may empower their armed forces to deal with imposing external threats (Talmadge 2013). They

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<sup>2</sup>Air force planes and navy ships are sometimes used during coups, such as the 1973 Chilean coup that replaced Salvador Allende (*The Bloody End of a Marxist Dream* 1973). These weapons systems are most useful in coups in which a disloyal segment of the military must fight against elements of the armed forces that remained loyal, or in coups that trigger external intervention from a conventionally-armed third-party. They are not as generally useful, however, as ground troops who can seize government buildings and capture key personnel (see Pilster and Böhmelt 2012, 360).

<sup>3</sup>For a discussion of Hafez al-Assad's coup-proofing efforts in Syria, see Quinlivan (1999). Hashim (2003) offers an excellent analysis of Saddam Hussein's actions in Iraq, while Lutterbeck (2013, 39-42) outlines the steps that Muammar Gaddafi took to maintain the loyalty of Libya's armed forces.

do so at their own peril, however, because as the military becomes stronger and more capable, the ease with which it can overthrow a regime also increases (Powell 2012). As Feaver (1996, 154) writes of civil-military relations: “The two central principles—the need to have protection *by* the military and the need to have protection *from* the military—are in tension because efforts to assure one side complicate efforts to assure the other.”

McMahon and Slantchev (2015) and McMahon (2014) show that the tradeoff between a military capable of protecting the state and one that is loyal to the state may not be as acute as previous research suggests because armed forces are less willing to launch a coup as external threats grow in severity.<sup>4</sup> Strong enemies diminish the military’s incentive for a coup by discounting the expected benefits associated with controlling the state. Consequently, as the external threat facing the state becomes more serious and the willingness of the military to launch a coup declines, constraints on the power of the military that limit its capacity to act are not as necessary. Rulers can therefore develop military forces that are both loyal and capable when external threats are sufficiently grave. If these threats are not so severe, or if they are less likely to be faced by the military after a coup, however, the military will have less incentive to remain loyal, such that constraints on the military’s power that lower the probability of success in a coup are required to keep the expected payoff for a coup lower than what these forces expect to receive for their loyalty.

In this, the threat posed to rulers by a military coup d’etat can be viewed as a function of two forces: the willingness of military organizations to intervene in politics, and their ability to do so.<sup>5</sup> Militaries are most dangerous to political regimes when they have strong incentives to overthrow the regime and a high probability of executing a coup successfully. In contrast, armed forces that are either unwilling or unable to overthrow the regime pose less of a threat. Militaries that are not willing to coup stay in the barracks voluntarily. Those that are unlikely to launch a coup successfully stay in the barracks for fear of failure.

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<sup>4</sup>See also Desch (1999), who argues that international threats help to promote civil-military comity, while domestic threats are harmful to the relationship between political leaders and their armed forces.

<sup>5</sup>See Powell (2012). In a related framework, Collier and Hoeffler (2007) model coup risk as a function of three constituent parts: the risk that a plot will form, the risk that a plot will lead to an attempt, and the risk that an attempt will succeed.

There are a number of ways in which rulers try to control the willingness of the military to defect, ranging from attempts to provide goods to the personnel who comprise its ranks to efforts to inculcate an apolitical military culture (Wang 1998; Huntington 1957). I focus on one strategy that has a particularly strong effect on the willingness of armed forces to intervene in politics: the manipulation of military recruitment and promotion. These efforts are important, given that the composition of the military determines states' vulnerability to external threats through its effect on the performance of the armed forces. Brooks (2007, 113) notes that "Who is chosen for what position affects everything from the discipline and skill applied to peacetime planning to the quality of chain of command in battle, processes essential to a military's organizational competence." Within this context, many scholars argue that choosing agents on the basis of political ties still has a negative affect on the competence of those forces. In explaining why democracies win wars, for example, Reiter and Stam (2002, 70) assert that "The need for officers in a non democratic state to be politically unthreatening will generate lower effectiveness throughout the military." The perceived negative effect of stacking on military performance is attributed to the tradeoff between competence and political reliability. Gaub (2013, 231) writes that "as a result of coup-proofing, officers develop lesser leadership skills because promotion and assignment is based on ethnic or religious affiliation rather than on merit." In this, existing research implies a straightforward relationship: the military's effectiveness declines with the extent to which its personnel are chosen on the basis of their ties to the regime.

Despite the supposed drawbacks associated with the politically-motivated selection of military personnel, the practice is exceptionally common. Political leaders have engaged in selective appointments throughout the world, from Afghanistan to Angola, Nepal to Niger, and Syria to Sudan, contributing to the "almost universal tendency" that Enloe (1978) mentions for militaries to be unrepresentative of states' overall populace.<sup>6</sup> If appointing agents on the basis of their ties to the regime degrades the performance of the armed forces, then the willingness of so many political leaders to engage in the practice must reflect the primacy of coup risk over other imperatives. Yet another possibility

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<sup>6</sup>See Sullivan (2007, 96) for Afghanistan, Goldsworthy (1981, Table 2) for Angola, Nepali and Subba (2005, 99) for Nepal, Decalo (1989, 363) for Niger, Zisser (2001, 13-25) and Kaufman and Haklai (2008, 752) for Syria, as well as Poggo (2002, 72) and Harkness (2012, 64) for Sudan.

exists as well, one that might explain the frequency with which regimes select political allies for military positions even in places like Iraq, Iran, and Syria where external threats to regime survival loom large. This possibility is that politically-motivated appointments do *not* degrade military performance in the way that previous research suggests, and that rulers can select on the basis of both political reliability and competence. I now explore this alternative.

### 3.4 Political-Ties and the Incentive to Stay Loyal

For the best of all worlds for any national regime is to possess distinguishable pools of mobilizable men who are predictably martial in spirit and reliable in politics.

—Enloe (1975, 230)

When the loyalty of the armed forces is in question, rulers have incentive to place the state's coercive power in the hands of those for whom regime change is unprofitable. Individuals who can gain greater advantage by overthrowing the government are inherently less trustworthy than persons who would profit little from a regime change. Unfortunately for rulers, the qualities of individual agents can be hard to gauge, especially when regimes must recruit and promote large numbers of personnel. Even where rulers can directly assess the attributes of the individuals they appoint — such as for the senior military leadership — agents' incentive to conceal their subversive intentions makes the selection process difficult. Consequently, rulers need a way to sort the pool of potential military personnel, distinguishing those who are most willing to remain loyal to the regime from those who have a stronger motivation to coup.

Regimes have solved this problem by using social, economic, and political cleavages as heuristics for the disposition of individuals within the state.<sup>7</sup> These cleavages typically reflect the underlying basis of power within the polity. Where salient, they guide the flow of resources and influence, thereby determining the degree of access that members of particular groups have to the goods that political regimes can provide. Some groups, of course, are privileged over others. In Syria, for example, political power

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<sup>7</sup>Roessler (2011) suggests that rulers use ethnicity as a cue for the likely behavior of personnel when deciding who to include or exclude from power.

is distributed along ethnoreligious lines, with minority Alawites benefitting more from the status quo than other groups. A similar dynamic existed during the Hussein era in Iraq, when Sunni Arabs — comprising only 20 percent of the country’s population — received special privileges from the regime while the Kurdish and majority Shia populations were marginalized (Swearingen 1988, 412).<sup>8</sup> The Apartheid regime in South Africa infamously privileged members of the white race when devising public policy (Thompson 2001). Elsewhere in Africa, goods have been distributed along ethnic lines in places like Rwanda, Nigeria, and Uganda (to name a few) (Horowitz 1985).

If the reliability of agents is a function of the extent to which they benefit from the status quo political arrangement, then the ascriptive characteristics of individuals, especially their group membership, serve as a useful metric for rulers who are trying to differentiate friends from foes. Groups that derive special privileges from the regime constitute the rulership’s “communities of trust” (Quinlivan 1999). Because these groups benefit from life under the regime, their members can be relied upon to a greater extent. It should therefore come as little surprise that rulers try to concentrate the state’s coercive power in the hands of these individuals. Put differently, rulers *stack* the military with individuals who share ties to the political regime. The Syrian military is dominated by Alawite officers, much as Hussein tried to ensure his armed forces were controlled by fellow Ba’athists, Sunnis, and/or members of his own tribe (al-Marashi 2002). The Apartheid regime allowed non-whites into the South African military, but only whites could serve in combat roles (Enloe 1975, 24). Ugandan dictator Milton Obote tried to ensure that his military was run by co-ethnic Northerners (Horowitz 1985).

Conventional wisdom assumes that rulers cannot select on the basis of both political ties and competence. Rulers must either select agents for their ties to the political regime, or in a meritocratic way that emphasizes the competence of military personnel.<sup>9</sup> However, if the regime has access to a pool of politically-reliable agents who also merit recruitment or promotion, then there exists no tradeoff between the two. This is important because in many states where rulers have an incentive to stack the military, the regime’s communities of trust also consist of the most well-educated and able-bodied

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<sup>8</sup>In contrast, the overthrow of Hussein’s Ba’athist regime has led to a situation in which Sunnis are now largely cut off from the vestiges of power to the benefit of other groups within Iraq.

<sup>9</sup>See Reiter and Stam (2002, 70) and Gaub (2013, 231).

residents. The benefits that flow to politically privileged groups extend to programs that promote education and healthcare.<sup>10</sup> As a result, it is possible that personnel chosen for the basis of their political affiliation are more capable than those who come from less privileged groups, such that stacking should improve the average competence of the military's personnel.

It is also possible that these soldiers would fight harder for the regime upon which their well-being depends. The Iraqi Republican Guard — whose members often shared strong connections to the regime — fought intensely against coalition forces during the 1991 War while suffering heavy casualties. These forces had been a primary target of the weeks-long air campaign by the Coalition, yet still maneuvered into the path of the United States-led force once the ground war had begun (Frostic 1994).<sup>11</sup> Alternatively, the rank-and-file members of the regular military tended not to have close ties to the regime. Even though these forces were not as heavily targeted by the air attacks, they largely abandon their objectives during the ground war rather than fight (Press 2001, 37). As one analyst later observed of the Iraqi forces, “The security services become more disciplined, motivated and reliable the closer they are to the president” (Dodge 2003, 67). The Iraqi military is explored in greater detail below.

Egorov and Sonin (2011) argue that rulers *purposefully* reduce the competence of the personnel who deal with security issues. In their model, the same skills that make agents useful if they stays loyal also make defection a lucrative strategy, given that competent agents are more likely to identify strong enemies with which they can ally. Rulers therefore have an incentive to select less competent agents in order to improve regime security. In this framework, however, the decisions of rulers to select on the basis of incompetence result only in unnecessary allocations of resources for defense and do not increase the threat of defeat by the enemy. Once the risk of facing an enemy with incompetent leadership is considered, rulers actually have a strong incentive to select capable agents in order to minimize the risk of defeat while also economizing on defense (McMahon and Slantchev 2015).<sup>12</sup> It is important to note, however, that the theoretical

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<sup>10</sup>Regime change may disrupt these dynamics in the short-run, a possibility that I address below.

<sup>11</sup>The planners of Operation Desert Storm saw the Republican Guard as the linchpin of Iraq's ground forces. Consequently, a key objective of the air campaign was to attrit the Republican Guard divisions operating in the Kuwaiti Theater of Operations.

<sup>12</sup>Rulers prefer to limit the probability of a successful coup by constraining the flow of resources to

framework that I develop does not depend on stacking having a direct effect on performance. I focus instead on the effect that stacking has in increasing the willingness of military personnel to remain loyal, a point to which I will return in the following section.

As evidence of the capability-degrading consequences of stacking, scholars show that armed forces with politicized recruitment and promotion systems perform sub optimally. In making this case, the effectiveness of politicized militaries is typically compared to that of armed forces in states with civil-military comity. However, I argue that this is the wrong comparison to make when assessing the relationship between stacking and military performance, and has led scholars to miscalculate its true effect.

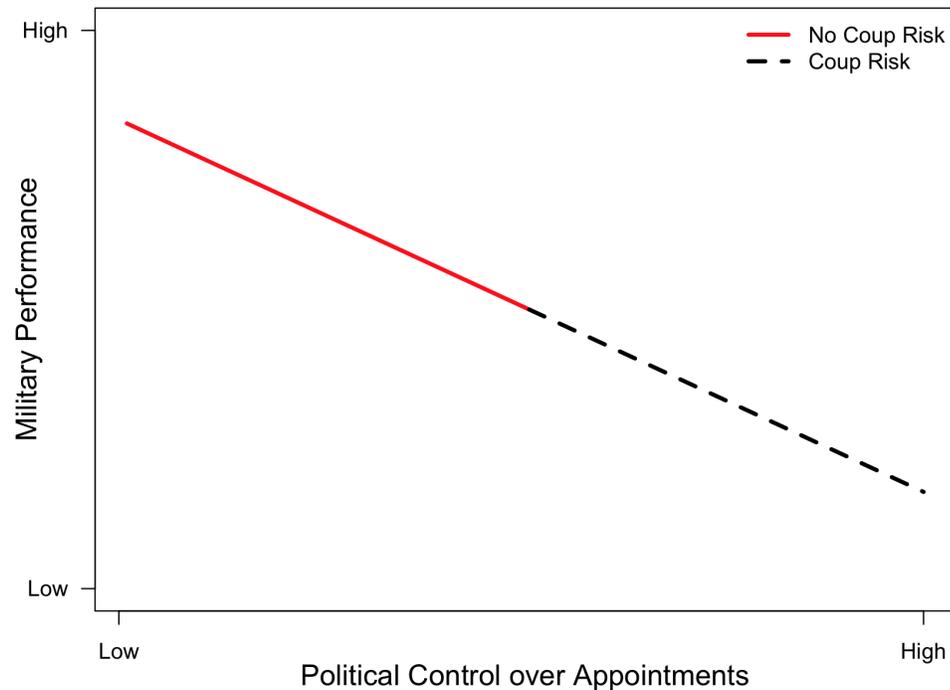
In order to assess the effect of a phenomenon on an outcome of interest, one needs to know what the outcome would look like if the phenomenon was absent, or if it was to assume different values. For researchers to determine whether a medicine works, for instance, they must compare the health outcomes of patients who took the drug to similar patients who were left untreated. This “untreated” group provides a counterfactual, the comparison case that is similar to the treated case except for receiving the treatment of interest. The similarity of the treated group to the control group is necessary for making comparisons, since it is under these circumstances that differences in outcomes can be attributed to the treatment rather than heterogeneity between the groups.<sup>13</sup> However, existing research on the politicization of military appointments has tended to compare states with stacked militaries to the ideal case of a state with a professionalized military that is optimized for international conflict (e.g. Reiter and Stam 2002, 1998). Figure 3.1 illustrates the basic form of the relationship given by the conventional wisdom. Because coup prone states exert more political control over the selection of military personnel than states facing less risk of a coup, the armed forces of these states are relatively worse off when it comes to their fighting performance.

This approach is akin to assessing the usefulness of a medicine by comparing health outcomes for the treated group of sick patients to the outcomes for a control

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armed forces, rather than appointing incompetent generals who will squander the resources they are given.

<sup>13</sup>Even if it was possible to control for the preexisting differences between dissimilar groups, one would then have to assume that the treatment would have the same effect on both groups in order to make an accurate inference. This is a tenuous assumption to make in many cases. For example, if a medicine affects sick patients differently than healthy ones, the difference in the health outcomes between the two groups will not be meaningful even if the pre-treatment heterogeneity is incorporated into the analysis.



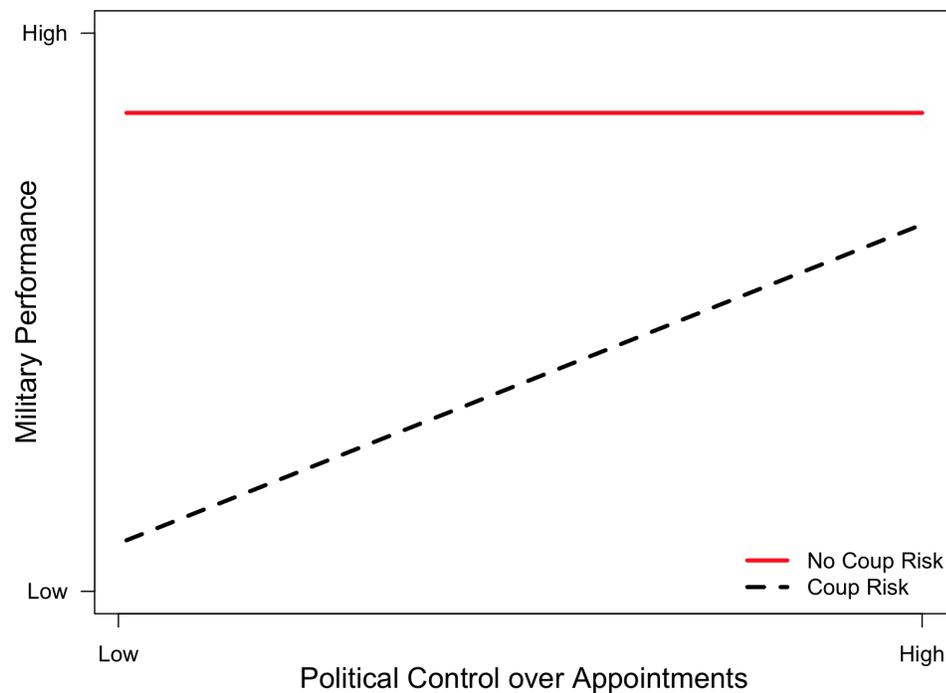
**Figure 3.1:** Conventional Wisdom on Stacking and Military Performance

group comprised of healthy individuals. Even if the medicine has its intended, health-improving effects, the well-being of the sick individuals may not improve beyond the control group of healthy subjects. It would be wrong under these circumstances to conclude that the medicine has a negative effect on the wellbeing of those who take it. In much the same way, it is misguided to suggest that the sub optimal performance of armed forces led and manned by personnel with political ties is evidence that such stacking is a cause of poor performance. Figure 3.2 illustrates a possible relationship in which stacking improves the fighting performance of militaries in coup prone states, even if this performance does not exceed the effectiveness of militaries in states without coup risk.<sup>14</sup>

The coup prone states that employ politicized militaries are different in a variety of meaningful ways from the ideal case to which they are often compared. This matters for theoretical as well as empirical reasons. From a theoretical standpoint, the

<sup>14</sup>It is important to emphasize that I make no claim about the military effectiveness of states that do not face coup risk. I use the red line to illustrate how military performance in states without coup risk could exceed that of coup prone states, even if stacking allows regimes that are threatened by coups to improve the fighting ability of their armed forces.

decisions that security-seeking rulers make when they fear a coup must be considered in the context of the imperatives that exist in this environment. In particular, stacking should be considered against the alternative policies that rulers employ to control the risk of a coup, since it is these measures that rulers will implement in the absence of stacking. Furthermore, to determine the effect of stacking on military performance empirically, one must compare how military performance differs due to the presence or absence of stacking under the same conditions. Because stacking occurs when rulers are concerned about the possible disloyalty of their armed forces, this is the most useful context in which to assess its effect.



**Figure 3.2:** Possible Alternative Relationship Between Stacking and Military Performance

### 3.5 The Military's Ability to Act

When militaries have incentive to launch a coup, rulers must limit the *ability* of the armed forces to overthrow the regime. Coups are launched when willing protag-

onists believe that there is some chance that their plot will be successful. While the spoils of replacing the political leadership are sometimes great, the consequences of failure in a coup are almost always grave, and can involve imprisonment, exile, or worse. For example, approximately 7,000 arrests were made following the July 20, 1944 plot by officers within the German Wehrmacht to assassinate Adolph Hitler and remove the Nazi party from power. At least 150 of the people arrested were executed or committed suicide (Lockenour 1998, 471). Because the outcomes associated with failure are undesirable, potential plotters have greater incentive to undertake anti-government activity as the probability of a successful coup increases, and the risks of failure decline. There are a number of factors that contribute to this success function, but all matter to the extent that they determine the coercive power that potential plotters can bring to bear against the regime.

Efforts by political leaders to mitigate the threat of a coup can consequently involve limitations on the coercive force that armed forces can muster. These constraints can take the form of reductions in the flow of resources to the military (Besley and Robinson 2010; McMahon 2014). If larger, more well-endowed militaries forces have an easier time overcoming the barriers that protect the regime from a coup, then reducing the size of the military or the quality of the personnel and equipment that run it is one way to reduce the chances of success for disloyal units. Unfortunately for regimes, the training and material resources afforded to militaries are also strong determinants of military victory (Desch 2002). Materially advantaged militaries that employ well-trained forces can more effectively mass and maneuver against an enemy, and can more easily conduct defense in depth.<sup>15</sup> Furthermore, training reduces the rate of attrition during military operations, while material preponderance enables militaries to suffer it without becoming disabled. As a result, limitations on the resources that flow to the armed forces not only curb the military's ability to launch a coup, but also hurt its ability to defend the regime against other threats.

In addition to across-the-board decreases in capital acquisitions or manpower and training, rulers can try to reduce the strength of disloyal forces by making it harder for coup-plotters to coordinate their activities across the military. If only a subset of the

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<sup>15</sup>On the significance of the balance of forces for operational success, see Mearsheimer (1989).

armed forces defect, then the regime faces a weaker opponent than it would if the entirety of the military was to launch a coordinated assault. At best, rulers can use the portion of the armed forces that remain loyal to defend against the plotters. The inability to marshal fellow servicemen in support of the coup is therefore a key concern for military personnel. Geddes (2004, 9) writes that “[t]he worst threat to the military as an institution is civil war in which one part of the armed forces fights another. Consequently, the most important concern for many officers in deciding whether or not to join a coup conspiracy is their assessment of how many other officers will join.”

There are two main ways to create such a coordination problem. First, rulers institute organizational barriers within their armed forces by dividing the military into distinct and often competing organizations. This strategy reduces the extent to which military personnel interact with each other and creates institutional barriers to cooperation. While militaries are rarely unified completely (e.g. Canada), the level of division and redundancy of forces within states at risk of a coup is often remarkable (Pilster and Böhmelt 2012; Belkin and Schofer 2003). Institutional barriers break up lines of communication and coordination between different military organizations, increasing the challenge posed to potential plotters who want to gain the cooperation or quiescence of other actors within the armed forces. As the military is disaggregated, coup conspirators must also deal with additional rival military organizations that could assist the regime in resisting a coup attempt. Shortly after taking power following the Iranian Revolution in 1979, Ayatollah Khomeini’s regime created a new military force. The “Army of the Guardians of the Islamic Revolution” — more commonly known simply as the Revolutionary Guard — was tasked with maintaining internal order and defending the state’s borders against foreign enemies. The organization, which would grow in size to approximately 125,000 persons, possessed capabilities to fight on land, in the air, and across the sea (International Institute for Strategic Studies 2014). What is remarkable about this force is that many of its core competencies mirrored those of existing Iranian armed forces, though it existed outside of the command structure of the regular military. The Khomeini regime had therefore incurred great expense to create an additional set of military forces within an organizationally distinct institution. This expense was justified by the hope that these loyalist forces could protect the regime by counterbalancing the

regular military in the event of a coup.

Second, rulers can impose barriers to coordinated action by manipulating the command-and-control structure of the armed forces. This usually involves limiting the authority of military commanders by requiring directives to flow through the political leadership before they are disseminated to operational units. If rulers can control the flow of information and curb the ability of military units to act independently, they can limit the potential for malicious coordination by disloyal personnel (Brown, Fariss and McMahon 2015).

Once again, however, the constraints on the military that are designed to limit its ability to launch a coup have nasty side effects. The command and control of coordinated forces is an important determinant of victory, especially at the operational and tactical levels of battle. Dividing military organizations for the purposes of coup-proofing therefore reduces the fighting efficiency of the military (Pilster and Böhmelt 2011). As Biddle (2004) argues, armed forces must operate synergistically within a dynamic environment in order to defeat opponents in modern warfare. In particular, armed forces must be able to stage combined arms operations against enemy forces. Close air support, for example, depends on communication between ground forces and air assets. Armored units must be able to operate in unison with infantry. If the armed forces are not trained or equipped to coordinate in this way, the effectiveness of the military will suffer. The delegation of tactical and operational decision making to field level commanders is also crucial, since it is these personnel who are responsible for making force employment conditions during the heat of most battles. Units within the Saudi Arabian Army were limited with respect to their autonomy during Operation Desert Storm in 1991. Even though Saudi forces achieved their initial, pre-planned objectives, their advance was then slowed considerably because ground commanders lacked the authority to make many decisions on the battlefield, and were instead reliant on elites who operated away from the front lines (Pilster and Böhmelt 2011).

### 3.6 Substitution Effects

Willingness and ability are both necessary conditions for a coup to occur. This means that the policies that control the military's willingness and ability to defect are substitutes for rulers who are trying to prevent a coup. Where rulers can remove the desire among military personnel to defect against the regime, there is no need to constrain the capabilities of the armed forces in order to mitigate the risk of a coup. Even where the incentive to overthrow the government cannot be eliminated completely, rulers can progressively relax limitations on the military's power as its personnel become more willing to remain loyal. This relationship is illustrated in Figure 3.3. As the disposition of military personnel changes, so too does the degree to which constraints must be imposed at any level of coup risk. Most coup prone states likely exist in the intermediate range of this frontier, where the inability of the rulership to guarantee the military's willingness to remain loyal means that some level of constraints is necessary.<sup>16</sup> Still, failing to implement policies that improve the willingness of military personnel to remain loyal would create a demand for more constraints on the ability of the armed forces to act.

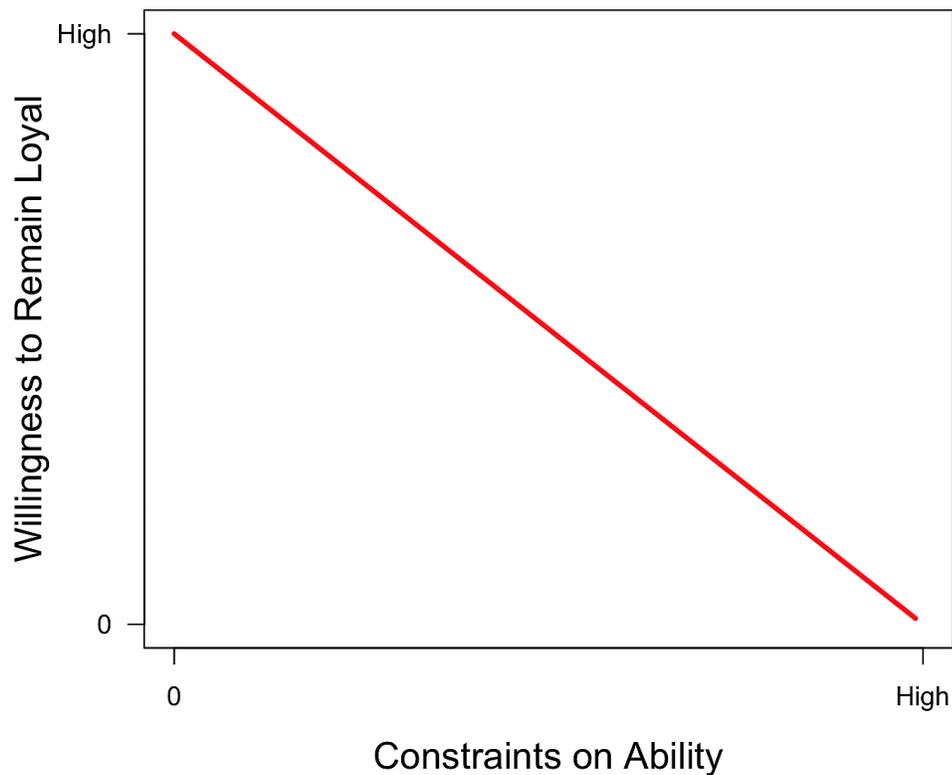
As I argue, the measures designed to reduce the military's ability to intervene in politics are also those which are most harmful to its capacity to defend the state from other threats. For the same reasons that military capabilities designed to defend against external foes also pose a risk to political leaders, constraints on those capabilities to mitigate the risk of a coup will hurt states' capacity to guard against their enemies. In contrast, the policies designed to control the willingness of personnel to intervene do not as severely disrupt the strength and competence of the armed forces. Consequently, if rulers can find ways to reduce the incentive of personnel to become disloyal, the constraints on the military that degrade its performance can be relaxed, and the effectiveness of these forces will improve *without* increasing the risk of a coup.

There are a number of ways for rulers to control the military's disposition toward

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<sup>16</sup>The plot is used for illustrative purposes only, and is not meant to imply a specific relationship between willingness and the necessity of constraints. If these factors do not substitute at a 1:1 rate, then the line will assume a different functional form. My claim is a more general one. If willingness and ability are substitutes, the relationship between the two will be negative, meaning that rulers can relax constraints on the armed forces whenever military personnel are more willing to remain loyal, and *vice versa*. In this, my argument hinges on the direction of the relationship rather than the rate at which it changes.

the regime, and rarely do rulers employ only one measure in isolation. Chief among these options is stacking, whereby rulers identify groups with strong ties to the regime, and select from among them when recruiting and promoting for position within the military. If stacking improve the willingness of personnel within the military to remain loyal, then rulers can make the armed forces stronger *than they would otherwise be*.



**Figure 3.3:** Willingness and the Necessity of Constraints on Ability

### 3.7 Iraq

Research on state security faces a fundamental challenge in that it is hard for outsiders to observe the functioning of the institutions that leaders design to protect their regimes, including the policies that are used to select personnel. This is no accident. In many states, political elites conceal the design of the regime's security apparatus and hide its activities, fearing that potential enemies may use this information to calibrate their threats. The opacity of security institutions limits the validity and reliability of measures

of states' security institutions that track behavior across states, making cross-national comparisons difficult to conduct. In order to mitigate these difficulties, I leverage within-state variation in the characteristics of security forces. This strategy allows me to control for the heterogeneity that exists across states, and therefore to examine the relationship between stacking and military performance in a common context. The approach depends on the tendency for the organizations that comprise the armed forces of coup prone states not to be uniformly stacked. These differences lead some forces to be more politically reliable than others, and, if the theory is correct, to observable disparities in the extent to which these dissimilar organizations are provided with coercive power.

I consider the effects of stacking by examining the performance of the Iraqi armed forces during a crucial period in the country's history: the 1980-1988 Iran-Iraq War. The war provides a useful case for considering the tension between the risk of a coup and the factors that affect military power. After his military performed poorly during the early phases of the conflict, President Saddam Hussein faced a situation in which the armed forces had to be strengthened in a way that would not trigger a coup. As Huggins (1994, 31) notes:

The need for the Iraqi military to develop a professional force capable of countering the Iranian onslaught became evident... However, the Iraqi regime faced a dilemma in developing a competent force for the successful execution of the war effort, without creating one that would eventually threaten the regime's very existence.

How Hussein reacted to this dilemma — largely by expanding and strengthening the Republican Guard, comprised mostly of individuals with ties to the regime — influenced not only the outcome of the war, but also strategic relations in the region for the next two decades. Much as the theoretical framework would predict, the Republican Guard was regularly privileged with equipment and training compared to the regular Iraqi Army, which was comprised of 85 percent Shia, a group that had been largely excluded from power (Pelletiere and Johnson 1991, 28). Consequently, with the Republican Guard, the coup-fearing Iraqi regime was able to develop a force that was loyal to the regime and effective on the battlefield.

### 3.7.1 Background

By 1980, Iraq and Iran had a storied history of disputes.<sup>17</sup> The countries had long quarreled over territorial issues, matters of policy, and each had frequently meddled in the internal affairs of the other. Yet despite this common discord, war had been, to this point, quite rare; the two states had not engaged each other in direct, large-scale hostilities since their independence.<sup>18</sup> Given this history, why did the states choose violence as a means for settling their disagreements from 1980 to 1988?

A likely answer can be found in the interaction of internal and external security concerns. The Shah was overthrown in Islamic Revolution of 1979, leaving the Iranian state in disarray. In particular, the existing Iranian military had strong monarchist ties, which made these forces and the new Islamist regime highly suspicious of one another. The Iraqi regime hoped to capitalize on this instability — and the weakness it might generate — by launching an attack to capture Khuzestan, an oil-rich and strategically important part of western Iran. In other words, Hussein's regime hoped to lock in gains that would reflect its (temporary) advantage in relative strength over the Iranians.<sup>19</sup> However, as would become clear, the Iraqis had overestimated their superiority.<sup>20</sup> The Iranians were able to mount an effective defense against Iraqi aggression, before pushing the fight back into Iraqi territory, thus leading to a protracted conflict that would cost between 500,000 and 1,000,000 lives (Makiya 1998, 259).

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<sup>17</sup>Iraq and Iran had been competing over territory near their shared border since at least the 16th century, when what is now Iraq was the eastern most province of the Ottoman Empire and Iran was controlled by the Persian, Shiite Safavid Dynasty.

<sup>18</sup>This does not include border clashes during the Kurdish Wars in the mid-1970s. In this case, Iran utilized a small share of its military in support of the Kurdish rebellion. While some engagements pitted Iraqi forces against the Iranian military, the scope of Iranian involvement was limited. This case does, however, highlight another important aspect of Iraqi-Iranian relations. While direct conflict has been rare, the parties have frequently sponsored militant groups intent on fighting their opponent.

<sup>19</sup>The Iraqis and Iranians frequently disagreed over territorial boundaries in this area. In particular, the Iraqis had agreed to concede parts of the Shatt al-Arab waterway to Iran in the Algiers Accords of 1975. However, this settlement was reached during a period of Iraqi weakness at the end of the civil war against the Kurds. In pursuing an advantage during a period of internal instability for his Iranian opponent, Hussein was returning the favor.

<sup>20</sup>As Hiro (1991, 2) notes, "It transpired later that the reports of Iran's military weakness were highly exaggerated."



**Figure 3.4:** Timeline of Select Ground Operations during Iran-Iraq War

Understanding Hussein's actions during the war first requires one to explore the origins of the regime itself. The Ba'ath party assumed control of Iraq following a 1968 coup. After taking office, the new political leaders had to act quickly to reform the military in order to consolidate their power. The armed forces posed a great risk to the nascent regime; in the decade preceding the 1968 putsch, Iraq had experienced 10 successful and attempted coups as well as two armed rebellions (Makiya 1998, 22).<sup>21</sup> These military reforms developed along two dimensions. First, the regime attempted to subjugate the regular Iraqi military by purging potentially disloyal personnel and removing much of its authority to act independently as a military force. Second, the regime developed (or augmented) an alternative set of armed forces, which eventually grew into a "complex labyrinth of security organizations" (al-Marashi 2002, 1). These efforts continued up to the point when Saddam Hussein became the *de jure* leader of Iraq in 1979 and afterwards.<sup>22</sup> When selecting agents to staff key parts of his regime, Hussein built power around his own minority ethno-religious group—the Sunni-Arabs—which represented less than a quarter of Iraq's population and also the Ba'athist political party from which he rose (Swearingen 1988, 412). For especially sensitive and important tasks like developing the country's WMD program, Hussein selected personnel from his own tribe in the area around his hometown of Tikrit (al-Marashi 2002, 3). His calculus was straightforward: give the most responsibility and power to agents who lack an independent base of power and who benefit from the survival of the regime.

### 3.7.2 The Republican Guard and Iraqi Army

The largest parallel-force, the Republican Guard, played a key role in Iraq's domestic politics and foreign relations during the Hussein-era. The military force was initially designed in 1969 as a Sunni-Arab counterweight to the Shia-dominated regular Iraqi military. The Guard reported directly to the state's political leaders and was therefore organizationally distinct from the other armed forces. In addition to the ethnoreligious and political ties its members held with the regime, personnel within the

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<sup>21</sup>For a more thorough analysis of Iraqi history, see Batatu (1979).

<sup>22</sup>Hussein's adeptness within the state's security apparatus (*al-Mukhabarat al-'Iraqiyya*) was a major factor in his rise to power.

Republican Guard received lucrative economic benefits compared to the regular army.

Much as the theory would predict, the training and equipment that the Republican Guard received set them apart from the regular Iraqi forces. As Cordesman (1990) notes of the Republican Guard: “These units were given extensive training in offensive operations, and mixed armor, mechanized, and special forces units.” They received modern weapons, such as T-72 tanks, assets like trucks that permitted the movement of supplies during mobile operations, and even luxuries like bottled water. These advantages resulted in a relatively elite fighting force that was crucial to Hussein for both maintaining control of Iraq and, eventually, presenting a conventional military threat (Byman, Pollack and Waxman 1998, 134).

The effectiveness of the Republican Guard would become clear as the brutal Iran-Iraq War lengthened. At the outset of the Iraqi invasion of Iran in September of 1980, however, the Republican Guard was a relatively small force. It was the Iraqi Army that conducted the first attack against Iran and sustained primary military operations. While initially successful, the Iraqi Army moved quite slowly against an Iranian opponent that was suffering in the aftermath of revolution. As the Iraqis struggled, the Iranians began to rebuff Iraqi forces and launched their own counteroffensives, which began to achieve success in late 1981 through 1982. The war then settled into a stalemate as Iraq developed a robust defensive front (Hiro 1991).

The poor performance of the Iraqi military during the early phases of the war can be partly explained by the incompetence of certain military leaders. While the rank and file of the regular Iraqi Army was overwhelmingly Shiite, Saddam had appointed its leadership on the basis of political-affiliation with the Ba’athist regime (Pelletiere and Johnson 1991, 11). Seemingly in contradiction to claims made within the theoretical framework, leaders who were appointed for their political ties proved incompetent.

These individuals, however, were culled by the Iraqi regime. Like many armed conflicts, the war between Iran and Iraq served as a type of natural-selection process for military leaders. Because it is difficult to predict how military commanders will behave under the stresses of combat, replacements of personnel are common among armed forces engaged in battle. During the first few months of World War I, for example, the French Army replaced 75 percent of its division commanders. What is important is

that the commanders in the Iraqi Army who proved incompetent were replaced by other individuals with close connections to the Hussein regime, many of whom did perform well. As Pelletiere and Johnson (1991, 59) note, “Most of Iraq’s higher level commanders appear to have been politically reliable professionals after 1982. Indeed, from 1984 on, the issue of competence seems to have been the principal deciding factor for advancement.” While the initial appointment of incompetent political-allies seems at odds with the claims made above, the response of the regime to poor performance shows that Hussein cared about competence as well as political reliability and acted accordingly.

### **3.7.3 Al Fao and Mehran**

The Republican Guard began to play a larger, more direct role in the conflict beginning in 1984 when it was deployed from Baghdad to defend against Iranian offensives in Southern Iraq (Pelletiere and Johnson 1991). It was not until 1986, however, that the Iraqi Republican Guard came into its own as a fighting force. The year began poorly for Iraqi forces at al Fao. During the night of 9 February, Iran launched a three pronged attack against the Iraqi front, an offensive that it called “Wa al Fajr-Eight”. Two of the prongs were focused near Basra, an Iraqi stronghold in the south of the country. The third Iranian force assaulted al Fao, 50 miles to the southeast.<sup>23</sup>

The al Fao peninsula abuts the Persian Gulf near the Shatt al-Arab waterway; it contains the port city of al Fao. The peninsula consists largely of marshland that is often hard to traverse. However, this territory is strategically important for three reasons. First, Iranian control over al Fao would effectively cut Iraq off from the Persian Gulf.<sup>24</sup> Second, it would put the Iranians in the position to launch offensives against Basra from the south (Herzog 1989, 262). Third, the proximity of Fao to the Kuwaiti border would allow the Iranians to threaten the crucial lines of supply and communication that flowed to Iraq through Kuwait (Cordesman 1987, 92).

The Iranian attack occurred during the middle of the night and in the midst of a terrible storm. At the time of the offensive, al Fao was being defended by the Seventh Corps of the Iraqi Army. The Iraqis comprising this force were surprised by the Iranian

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<sup>23</sup>See Hiro (1991, 167) and Cordesman (1987, 92).

<sup>24</sup>At one point, Fao had been the location of the Iraqi Navy’s principal base.

advance, became panicked, and quickly retreated while abandoning much of their equipment (Hiro 1991, 167). Reinforcements did exist in the form of the Iraqi Army's Third Corps, which was deployed farther north around the marshes near Basra. However, Iraqi commanders initially believed that the attack on al Fao was a diversion for a larger Iranian operation to take Basra. As a result, there was a 48 hour delay in deploying the Third Corps to the south. By the time these reinforcements began their trek to Fao, more than 30,000 Iranians had occupied the peninsula, seizing 320 square miles in the process (Hiro 1991, 167). More critically, the Iraqi Army was struggling to slow the Iranian advance.

During this time of great strategic need, Hussein's response was again to deploy the Republican Guard from Baghdad in a counterattack (Hiro 1991, 168). These forces were sent down one of only three roads that ran through the marshes toward Fao. Unfortunately for the Iraqis, the road was within range of Iranian guns (Pelletiere 1992, 93, 97). As the wet conditions slowed the Republican Guard, the Iranians were able to concentrate their fire against its ranks. Despite these losses, the Republican Guard was able to do something that the regular Iraqi forces had struggled to do: stop the Iranian advance, thus stabilizing the defensive front and "preventing it from crumbling away" (Pelletiere and Johnson 1991; Pelletiere 1992, 97). The actions of the Republican Guard helped to spare Basra and Umm Qasr, a strategically important city further to the west toward Kuwait. In sum, however, the Iranian operation was a major blow to the Iraqis.

The Iranian victory convinced many that the Ba'athist regime in Baghdad was finished and, perhaps more importantly, led the regime in Tehran to believe that it could win the war militarily.<sup>25</sup> Consequently, the Iraqi regime was eager for its own victory in the aftermath of al Fao. Hussein set his sights on the largely-abandoned Iranian border town of Mehran, which sits only 106 miles east of Baghdad (Cordesman 1987, 101). The Iraqi Army launched its offensive on 10 May, and quickly displaced the relatively small Iranian force defending the town. Hussein had hoped that Iraq could then trade Mehran for Fao, a proposal that the Iranians rejected. The situation quickly worsened for the Iraqis. When their forces had captured Mehran, they had failed to conquer the high grounds that surrounded the town. This was in part because Hussein was reluctant

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<sup>25</sup>See Chubin (1989, 16-17) and Pelletiere (1992, 93).

to commit his elite troops to this task (Talmadge 2013, 202). Iran was therefore able to use the heavily forested high grounds to mass its forces following the Iraqi offensive. At the beginning of July, these Iranian forces went on the offensive in operation “Karbala-One”, pushing the Iraqi Army out of Mehran and back across the border (Cordesman 1987, 103).

### 3.7.4 The Aftermath

Iraq had suffered two major defeats at al Fao and Mehran in less than half a year, leaving the regime in a state of crisis (Chubin and Tripp 1988, 119). While the Republican Guard had prevented a total collapse of the Iraqi lines, the regime realized that its military forces and strategy needed to be revitalized. In the war up to this point, the Iraqi regime had implemented a strategy of static defense, whereby regular Iraqi Army units were entrenched near the front lines and the elite Republican Guard troops served as a mobile reserve force to deploy against any Iranian breakthroughs (Pelletiere 1992, 104). This system permitted the regime in Baghdad a great deal of control over military operations. Consistent with the logic underlying the theory, Hussein worried that affording the armed forces the power to conduct operations independent of his political control was too dangerous. However, the failures of 1986 showed that static defense was not working for the Iraqis.

The commanders of Iraq’s armed forces wanted to employ their forces in a more dynamic way. They hoped that a new strategy built around combined arms operations would give them the capability to defeat the Iranians, which often sought to fight battles of attrition by launching frontal assaults.<sup>26</sup> However, combined arms warfare requires commanders to make decisions quickly in response to conditions on the battlefield, meaning that the regime in Baghdad would not be able to exert the same level of control over its armed forces. Despite his misgivings about giving this power to the armed forces, the dictates of the war forced Hussein’s hand, and he ceded additional authority to his military commanders (Chubin and Tripp 1988, 119). The way in which

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<sup>26</sup>Iran had a numerical advantage in troop strength. It used its superior numbers in attempts to attrit Iraq’s forces, often via “human wave” assaults on Iraqi positions by the Basij militia who were then followed by Revolutionary Guard forces (*Pasadaran*).

Hussein gave up this control over the armed forces is suggestive of the logic in the theory.

In order to develop a set of armed forces capable of implementing combined arms, the Iraqi regime shuttered the country's universities. It ushered their well-educated students into the Republican Guard (Pelletiere 1992, 108). The Hussein regime focused its recruitment efforts on college students for two primary reasons. First, access to the universities was determined largely on the basis of social and political ties to the Ba'athist regime. This meant that students admitted to colleges were relatively privileged under Hussein, and were therefore more politically reliable than military-aged men from underprivileged groups.<sup>27</sup> Second, it was thought that the intellect of the college students would allow them to quickly learn and implement the dynamic, coordinated elements of combined arms warfare (Pelletiere 1992, 107). In this, the regime believed that the privileged, well-educated students could make the best soldiers. The Guard, in turn, was attractive to these young Iraqis since it offered them "a personal connection at the palace — in a society like Iraq's, this was a major asset" (Pelletiere 1992, 108). As a result of the regime's efforts, the Republican Guard grew rapidly from one to four divisions (Huggins 1994, 32-33).<sup>28</sup> Furthermore, in the interest of not letting decision making authority slip too far outside of the palace, operational control of the reconstituted Iraqi armed forces was given to Hussein's cousin, Adnan Khayrallah (Pelletiere 1992, 109).

When the Iranians launched the Karbala-Five offensive against Basra in 1987 — the largest attack of the war — the Republican Guard was ready. After the regular Iraqi Army was pushed back by the Iranians, the Republican Guard was used to counterattack. The Iraqi forces crushed the Iranian advance, dealing their opponents a major blow in the process. This set the stage for a series of Iraqi offensives the following year. In a campaign it called "Tawakalna ala Allah" (in God we trust), the Iraqis launched five major assaults: al Fao, Fish Lake, Majnoon, Dehloran, and Qasir Shirin (Pelletiere 1992, 141).

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<sup>27</sup>Harb (2008, 3) writes that "Admissions policies were skewed to favor the children of regime personnel (who were admitted without any restrictions) and members of pro-regime Arab organizations and parties; other would-be students had to meet stringent entrance requirements and were pressured to join Baathist organizations."

<sup>28</sup>Interestingly, as the Republican Guard grew stronger, Hussein developed an additional security service—the Special Republican Guard—as a force to counterbalance the existing Republican Guard. After the successful defense of Basra in 1987, Hussein expanded the Republican Guard again by adding an additional nine brigades (increasing the number from 16 to 25) (Huggins 1994, 33).

Retaking the al Fao Peninsula was important to the Iraqi regime for both political and strategic reasons; Hussein wanted to show that he possessed the coercive power to defeat the Iranians. As with other military tasks of great importance, the Republican Guard was called in to fight. Of the troops that Hussein's regime committed to the Second Battle of al Fao, 60 percent came from Republican Guard units (Woods et al. 2011, 83).<sup>29</sup> In only 36 hours, these forces succeeded in forcing the Iranians from their positions. The Iranians were pushed back beyond the Shatt al-Arab waterway to near where they had been before the 1986 offensive (Segal 1988, 950). In this, the Republican Guard had regained the territory that the Iraqis had lost two years prior, a major victory for Hussein's regime.<sup>30</sup> The Republican Guard was an essential part of Iraqi successes at Fish Lake, Majnoon, and Dehloran as well (Cordesman 1990; Ibrahim 1988; Pelletiere 1992, 144). Altogether, the Iraqi victories were of great value, as they encouraged the previously recalcitrant Iranians to agree to the ceasefire that ended the war.

The growth of stacked forces in Iraq influenced relations in the Middle East for years following the Iran-Iraq War. Planners of Operations Desert Storm and Iraqi Freedom, for example, recognized the effectiveness of the Republican Guard, and designed military operations that emphasized its destruction in particular.<sup>31</sup> Despite the best efforts of Coalition forces to destroy the Guard during Desert Storm, Pardew (1991-92, 21) notes that these units "were the best-equipped, best-trained, and best-supported forces in the Iraqi Army, the symbol of Iraqi power and the foundation of Saddam Hussein's authority." When contemplating the potential for a U.S.-led invasion of Iraq in 2003 and reflecting on Iraqi performance in earlier wars, Dodge (2003, 69) notes that Iraqi defense under Hussein's Ba'athists rested largely on the forces derived from his community of trust:<sup>32</sup>

Opposition to US troops will not come from the conventional army and will not be situated in static defences vulnerable to attack from the air. It is the well armed and highly motivated Special Republican Guard and members

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<sup>29</sup>The Seventh Corps of the Iraqi Army was also heavily involved (Pelletiere 1992, 141).

<sup>30</sup>The date the Iranians were defeated at al Fao became a national holiday in Iraq.

<sup>31</sup>These strategies reflected conventional wisdom on the sources of Iraq's military might and the steps necessary to defeat Hussein's forces. Eisenstadt (1996, 16), for example, suggests that "provocations by Saddam should prompt retaliation against the three or four Republican Guard divisions that constitute the main pillar of his regime and the backbone of his offensive might. This will not be easy."

<sup>32</sup>In the context of recommendations about the use of U.S. military force against Hussein in the 1990s.

of the security services, numbering as many as 30,000, that will form the defensive cordon through which invading troops will have to fight.

While the performance of Iraq's armed forces under Saddam Hussein is sometimes derided, the state possessed relatively powerful units that could be called to defend his regime from both domestic and foreign enemies. In this way, his regime was able to overcome the tradeoff between loyalty and competence by appointing supporters to key military units.

### **3.7.5 Implications**

The behavior outlined in the Iraqi case is consistent with the theoretical expectation: the level of power afforded to different organizations is a function of the extent to which their members were privileged by Saddam Hussein's regime. This was most clear in the aftermath of the 1986 losses at al Fao and Mehran. When Hussein needed to relax the constraints on his armed forces in order to improve their performance, he concentrated this power in the hands of the Republican Guard, a force that was comprised of individuals who were privileged by the regime. The Iraqi regime was able to select these individuals on the basis of both privilege and competence, which allowed the Republican Guard to grow quickly without diminishing its fighting prowess. In contrast, Hussein was far more careful about ceding power to the regular Iraqi Army, which was comprised primarily of personnel from groups that were marginalized during his rule. As a result, the privileged forces — the Republican Guard in particular — tended to do better in combat than their counterparts during the Iran-Iraq War, and were used for especially important missions by the regime.

Because Saddam Hussein's communities of trust comprised a minority of Iraq's population, his regime was limited in the extent to which it could concentrate coercive power in the hands of supporters. As is discussed above, these limitations were manifest in the characteristics of the security forces. While some organizations like the Republican Guard were deemed to be politically dependable because they were staffed with individuals who typically shared ties to the regime, the Iraqi government was forced to fill out the ranks of its armed forces — especially the army — with troops from groups

that lacked social or economic privilege, and who were therefore thought to be less reliable. While these differences create variation that is useful for assessing the military might of stacked versus non-stacked forces, they also create other dynamics that are worthy of consideration.

When it comes to deciding which forces to employ in battle, rulers face a dilemma: politically well-connected forces are relatively effective but are often costlier to use. Fighting with stacked forces concentrates the costs of warfare within leaders' political coalition and damages the shield that they use to defend against domestic threats. Consequently, while stacked forces are useful for their effectiveness, leaders like Hussein are often loathe to commit them to combat. The Iraqi regime adopted a strategy designed to keep casualties across its military forces at a minimum; it was especially careful about the use of its elite, stacked forces like the Republican Guard.

This should not imply that stacking hurts the performance of the armed forces (relative to what it would be without stacking), only that rulers may be limited in the extent to which they can develop and employ their politically-reliable forces. In this, the issue is not that regular forces are more effective on the battlefield, just that other factors make them less costly to use. In many cases, however, this consideration is a significant one. The Republican Guard played a key role in helping the Iraqis capture Khorramshahr at the outset of the invasion in 1980, but these forces were quickly recalled from the front (Quinlivan 1999, 145). The unwillingness of Hussein to use his elite forces to seize the hills around Mehran is another example (Talmadge 2013, 202). Instead, the Republican Guard and other elite units typically served as powerful reserves, backing up the regular Iraqi Army and militia forces in their fight against the Iranians.

In this, Hussein was typically willing to utilize his Republican Guard only in important strategic situations where the regular Iraqi military had faltered against the Iranians, such as during the First Battle of al Fao and Iran's 1987 Karbala-Five offensive against Basra (see above). In this way, the battlefield effectiveness of the Republican Guard is particularly remarkable. Since the Guard was selected for the toughest missions — usually when the regular military had already failed — its ability to achieve success is a testament to its capability as a fighting force.

There is another facet of this dynamic to consider as well. Developing capable

military organizations comprised of personnel with close ties to the regime may allow the ruler to strengthen the regular military, even if its personnel are not privileged by the regime and therefore lack a special willingness to remain loyal. If the stacked force presents a barrier to the successful completion of a coup by other military organizations, those forces can be further strengthened without increasing the coup risk posed to the rulership (see Quinlivan 1999, 165). The fact that the military is divided is a hindrance to its capabilities compared to a more ideal case with a unified set of forces. Among armed forces that are already divided, however, the “safe” amount of military power that rulers can provide to any organization is increasing in the extent to which a capable counterbalancing force exists.

The relationship between stacking and military effectiveness can be complicated as a result of regime change, especially in the context of independence from colonial rule. If a new regime depends on political, social, or economic ties that differ from its predecessor, then rulers will have incentive to select from pools of individuals who may not have been systematically privileged over time, and who may therefore lack the skills and experience needed to marshal the state’s armed forces as effectively as those who were chosen by a previous regime. This is most clear on the other side of the front lines of the Iran-Iraq War. One of the first things that the regime of Ayatollah Ruhollah Khomeini did after taking control of the Iranian state in 1979 was to purge the military—especially the officer corps. The military had been a servant of the monarchy, and Khomeini doubted the loyalty of many within it. However, the Shah’s officer corps was also more experienced and better trained than the Islamists who Khomeini sought as replacements. Following the Iraqi attack in 1980, Khomeini recalled many of these purged individuals (at least those who were still alive and in Iran) and restored their positions within the military (Segal 1988).

If the dictates of state security create a demand for competent military personnel that do not (yet) exist within the ruler’s communities of trust, the regime may maintain the military’s existing personnel structure. This condition is ephemeral, however, since personnel who lack the incentive to remain loyal to the regime but possess the ability to overthrow it are particularly threatening to the rulership. Rulers therefore have incentive to cultivate their own set of competent military agents. Once the tide of the war had

turned in Iran's favor and personnel with closer ties to the regime had gained more experience, Khomeini *again* purged the military, ending the reprieve that many of the officers from the old guard had received from the new regime (Segal 1988, 952-3).

### 3.8 Conclusion

Political leaders need a coercive force for defense. In developing such a force, however, they create a new challenger for political power. This problem is so acute because the same skills and knowledge that allow the guardians of the state to succeed against potential threats also makes them more capable and cunning protagonists in a coup. When rulers face the risk of a coup, they must therefore implement a set coup-prevention measures designed to keep the government safe from within. These measures assume one of two basic forms. First, rulers can control the ability of the armed forces to defect. This is typically achieved by limiting the resources that flow to these forces, or by inhibiting their ability to coordinate and act independently. Unfortunately, the military's inability to launch a coup is related to its chances of prevailing against threats from outside of the regime. As a result, limiting the strength, cohesion, and autonomy of militaries makes it harder for the regime to defend against its other opponents. Second, the leaders of political regimes can adopt policies that affect the disposition of military personnel, thereby making these agents less willing to intervene. Because these policies do not impinge as severely on the military's ability to conduct operations, they are less harmful to its effectiveness. Consequently, shifting the portfolio of coup-prevention measures away from those that limit ability toward those that incentivize loyalty has a positive effect on the fighting performance of the armed forces.

A common, effective way to increase the military's willingness to remain loyal is stacking, the process by which military personnel — especially those in leadership positions — are chosen on the basis of their ties to the regime. If these individuals benefit from their relationship with the rulership, they will have less incentive to replace the government than other, less-privileged actors within the state. Scholars often assume that rulers must select either on the basis of competence or loyalty, meaning that selections made on the basis of political ties will necessarily result in lower effectiveness. However,

in many places, the set of politically-reliable agents also includes the most experienced and qualified military personnel. Connections to the regime also confer access to better healthcare and education, both of which help to improve the effectiveness of potential military agents. In this, appointing military personnel on the basis of their ties to the regime may help rulers to *improve* the effectiveness of the armed forces over what it would otherwise be.

Understanding the dynamics of stacking is also important for explaining why some regime changes are successful, while others fail. Existing literature suggests that a regime change may lead to a coup because the new government has interests that are contrary to those of the military. This can occur in the context of democratization (Acemoglu, Ticchi and Vindigni 2010) or more generally in the context of stacking when a new regime takes over with a different demand function for loyalists (i.e. the new regime demands Sunnis rather than Alawites) (Harkness 2010). One implication of these arguments is that where leaders are able to construct more capable forces through stacking, these regime changes are likely to be especially tenuous. If stacking not only concentrates the states' coercive power in the hands of persons who are loyal to a particular regime, but also means that these persons are more capable of organizing a coup attempt, then new political leaders are especially likely to fall victim to the armed agents from the old regime or colonial power.

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