A Tale of Two Dilemmas: International Security and Coups d'état

Identifying the international determinants of coups has emerged as an exciting vein of research. However, while the literature has given some attention to militarized interstate disputes and external threats, these geopolitical explanations generally neglect the role of a state's military capability with respect to the international environment. I argue that the interplay between the security and guardianship dilemmas of international relations and domestic politics, respectively, encourages coup attempts among states possessing weak levels of relative power. Due to the security dilemma, geopolitical weakness creates a salient reason for putschists to instigate a coup. However, attempting to keep up with their external security environment by improving capability risks the armed forces becoming a greater threat to the state due to the guardianship dilemma. I demonstrate my theory using a rational choice approach and empirically verify my claims with a variety of statistical techniques.

Keywords: military coups, international security, international relations

Subject classification codes: include these here if the journal requires them

Introduction

We should expect geopolitics to impact the likelihood of a coup. Heads of state assume primacy in matters of foreign policy and militaries specialize in violence to protect the country from external threats. But should the international security environment increase or decrease the probability of a coup attempt? Contemporary scholarship offers compelling but contradictory explanations. In this essay, I present a new theoretical argument which reconciles existing accounts.

I argue that the relationship between external security and coups can be explained by the heretofore unconsidered interplay between the security dilemma and the guardianship dilemma. The security dilemma pushes states to increase their military capabilities vis-à-vis others. Weaker states in this framework are at a disadvantage. Low capability creates an incentive for guardians to stage a coup to correct this shortcoming.

If such a state increases its capability to stymie this motive, the armed forces become more powerful. Consequently, the guardianship dilemma worsens as the armed forces become better able to instigate a putsch. On the other hand, if a weak state decreases its capability, other countries become more of a threat and thus the military has an even stronger motive to coup. While stronger states have some leeway because they can theoretically coup-proof without losing their advantage, weaker states are caught between the devil and the deep blue sea. Low levels of relative military capability, therefore, increase the likelihood of coup attempts.

This essay proceeds as follows. First, I will conduct a literature review that lays out the present debate between external security and coups. Second, I will briefly introduce the reader to the security and guardianship dilemmas. Third, I will present my theory using a partial equilibrium microeconomic framework. Fourth, I will conduct a statistical analysis to demonstrate the external validity of my theory, providing both associational and inferential evidence which controls for alternative explanations. Lastly, I will discuss my results.

Conflict and Coups: A Brief Literature Review

Typically, scholarship has explained coups d'état via domestic determinants. Poverty and poor development (Londregan and Poole 1990; O'Kane 1993; Alesina et al 1996, Galetovic and Sanhueza 2000; Miller 2012; Schiel 2019), economic liberalization and interdependence (Clark 2007; Powell and Chacha 2016), regime type (Lindberg and Clark 2008; Svolik 2009; Schiel 2019) civil institutions, political legitimacy, and a history of previous coups (Londregan and Poole 1990; Belken and Schofer 2003) all account for some of the explanation. However, an emerging literature investigates the onset of coups with respect to external conflict. In assessing this debate, I want to juxtapose two particular arguments, which I will refer to, respectively, as the neo-

Tillyan and neo-Laswellian theses. I do not claim that these scholars necessarily endorse these positions; however, their respective logics provide a useful dichotomy to articulate the two competing rationales of how international security impacts coups d'état.

The neo-Tillyan thesis posits that international conflict should decrease the likelihood of coups. An extension of the bellocentrist hypothesis that war makes the state (Tilly 1975, 42), it follows that conflict will increase internal cohesion, improve civilian-military relations, and thus forestall coups. We can further disaggregate this argument into demand-side and supply-side incentives (see Piplani and Talmadge 2016; Aslan 2018), though the authors themselves may not explicitly conceptualize them as such. On the demand-side, cohesion reduces desire for a coup. Desch (1999, 13-14, 19) finds that severe external threats lead to stable civilian-military relations. McMahon and Slantchev (2015) present a similar argument but premise their explanation on the uncertainty of the threat's severity as a driver of cohesion. Andreski (1980, 4) addresses the pragmatic concern that during wartime a coup increases the likelihood of defeat. On the supply-side, interstate conflict prevents a military's ability to stage a coup. Staniland (2008, 334) claims that "the pressures of international competition discipline military adventurism and provide a mission toward which resources must be devoted". Likewise, Piplani and Talmadge (2016, 1373-74) argue that ongoing external conflicts inhibit opportunities for military officers to stage coups. In support of the diversionary war thesis, Arbatli and Arbatli (2016, 126-128) find that militarized disputes lower the likelihood of subsequent coups, and Kim (2018b) also finds some evidence that MIDs and war reduce coup likelihood, though he cautions that "the evidence is somewhat weak" (937). Regardless, the literature has demonstrated many findings that accord with the Neo-Tillyan account that conflict decreases coup attempts.

We now turn to the neo-Laswellian thesis. The contrasting argument that coups and military conflict share a positive relationship, i.e. conflict will lead to more coups, is often associated with the diversionary war literature (see Oakes 2012 for an impressive review). Harold Laswell, in his two seminal articles on the "garrison state", predicts the overwhelming of civilian rule by a military elite due to the prospect of external threat (1937, 1941). Instead of fostering cohesion, external threats create militarized environments that impede democratization and invite takeover by authoritarian or military regimes (Hintze 1975; Rasler and Thompson 2004). Other recent studies find that external threats create supply-side incentives for coup plotters due to the substantial commitment leaders must make to the armed forces (Florea 2017, 12; Bell and Sudduth 2017, 1433; Kim 2018a, Kim 2018b). Moreover, the literature on military spending and coups suggest that armed forces will threaten the state to satisfy their corporate motives (Collier and Hoeffler, 2007; Kim, Kim, and Lee 2013; Conrad, Kim, and Souva 2013; Leon 2014). This tension lies at the heart of the "guardianship dilemma" or "civilian-military problematique" (Feaver 1996; Feaver 1999), which I will define momentarily.

Scholars have made recent progress considering the role of international actors. Aslan (2018)'s study of Turkey and Pakistan explores socialization and professional military education driven by interaction with the United States. Others have found that coups elicit substantial reaction from the international community (Shannon, Thyne, Hayden, and Dugan 2015) that impacts leader duration (Thyne, Powell, Parrott, and Van Meter 2018). In addition, the recent work of Florea (2017) and Kim (2018a, 2018b) regarding a positive association between external threats and coups represent substantial progress.

While we have made some steps forward, the role of relative power has not yet received a systematic theoretical treatment. India-Pakistan represents an exemplary case of why this omission is problematic. Without question, this rivalry represents an anchor case of a high external threat environment (Thompson, 2001; Goertz, Diehl, and Balas 2016, 33). However, neither the neo-Tillyan nor the neo-Laswellian thesis alone can explain why Pakistan has experienced many coups and India not a single attempt. If external threats lead to more coups, as in the neo-Laswellian conception, then India sharply diverges from the theory. On the other hand, if external threats lead to fewer coups, Pakistan's repeated coup attempts pose a problem for the thesis. If neither theory can appropriately explain this important case, we should consider revising the current debate. I argue that by focusing on relative military capability we can resolve this theoretical discrepancy. In the next section, I will present my theory that explores this aperture in the literature.

Integrating the Security and Guardianship Dilemmas

In this section, I will lay out my theoretical explanation for how relative military capability[1] affects the likelihood of a coup attempt. First, I will briefly describe the theoretical basis. Second, I will present a rational-choice framework which uses a supply-demand model in the military's "market" for relative capability to show how this dynamic can inadvertently lead to more coups. Lastly, I will discuss the hypotheses generated by this theoretical argument.

The security dilemma is the condition of political life that any action taken by a state to increase its own security undermines the security of other states in the

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[1] For convenience's sake, I will sometimes refer to this as "relative power" or simply "capability" or "power".

international system (Herz 1950, 1959; Butterfield 1952; Jervis 1978, 2011; Glaser 1997, 2011). Correspondingly, it is also true that decreasing one's security increases the security of others around them. However, it is assumed in virtually all theoretical paradigms that states increase their security due to the minimal assumption that states want to survive. The guardianship dilemma, also known as the "civilian-military problematique" (Feaver 1999) is the following conundrum: a state needs a military to defend itself against threats. However, the more capability the military acquires to accomplish this mission increases the probability it could overthrow the state's leadership. Therefore, a constant tension exists between the state and the armed forces meant to protect the state (Huntington 1957; Janowitz 1960; Stepan 1971 represent more classic works; more contemporary works include Feaver 1996, 1999; Desch 1999; McMahon and Slantchev 2015).

While scholars have not directly articulated the interplay between these two dilemmas, tracing the logic of their implications puts them in dialogue with one another. The security dilemma pushes states to seek superior relative power. Therefore, states must improve their military capability. While increasing power may reduce demand for a coup, this act exacerbates the guardianship dilemma as the armed forces become better able to stage a coup due to improved capability. On the other hand, if a leader decreases its military capability the armed forces may have less ability to stage a coup, but problematically they have greater motivation to do so.

Why cannot leaders with weaker relative power simply coup-proof their militaries to avoid a coup? Doing so becomes particularly problematic for two reasons. First, the literature demonstrates consensus that coup-proofing reduces military effectiveness. Examples of coup-proofing strategies include counterbalancing through the creation of parallel military units, ethnic stacking, rotation of senior commanders,

failure to promote via merit, and isolating officers that may pose a future threat. Quinlivan (1999) argues that parallel military structures undermine military effectiveness because they are both expensive to maintain and tend to concentrate capital away from the regular army. Brooks (2007) notes that military officers may be placed in career-ending assignments and that senior officer rotation keeps troops from forming close bonds with their commanders. Pollack (2002) notes that religious recruitment in Syria fostered tactical incompetence. Pilster and Böhmelt (2011)'s quantitative study finds that coup-proofing obstructs coordination and diminishes initiative and results in subpar battlefield performance. Similarly, Talmadge (2015) finds that, for instance, South Vietnamese coup-proofing led to poor outcomes against its better organized opponent in North Vietnam, among other case studies. Bausch (2018) uses experimental methods to demonstrate that coup-proofing via officer rotation or selection based on loyalty lowers military effectiveness. Even coup-proofing via reduction of military expenditures may lower effectiveness because it deprives the military of materiel to accomplish mission objectives.

Second, given the consensus on military effectiveness, it should not surprise us that coup-proofing often tends not to achieve its goal, i.e. it does not effectively prevent coups. Albrecht (2015a) finds that coup-proofing does not necessarily achieve its aims and remarks that "international factors might aggravate such domestic crises or more directly create incentives for coup plotters" (p. 674). In a related article, the same author finds that while social bonds may tie officers to the leadership, that "the loyalty of even comparatively professionalized militaries declines when incumbents, and their would-be successors, have alienated themselves from their militaries" (Albrecht 2015b, p. 49). Pilster and Böhmelt (2015) find that coup-proofing reduces coup onset only in limited quantities and that over-proofing increases the likelihood of coup onset. Sudduth (2017)

makes the counterintuitive discovery that coup-proofing actually decreases as risk of a coup increases.

Given the extensive literature on the military defending its corporate interests (see Collier and Hoeffler, 2007; Kim, Kim, and Lee 2013; Conrad, Kim, and Souva 2013; Leon 2014), we should also expect the armed forces to react negatively when their primary responsibilities as warfighters are threatened. After all, they are the ones who will suffer in any future battle. Here we might consider the 2013 coup in Egypt. Much attention has been paid to the fact that Egypt has dramatically increased its military spending following the coup as a response to the fact its relative power has become more contested in the Middle East with conflicts in Syria and Yemen and after lower spending levels in previous years (Wuite 2018; Springborg and Williams 2019). We should not be surprised that militaries care about their relative capabilities to external threats and will act if this interest is threatened.

In short, the security dilemma punishes coup-proofing in weaker states. Weaker states have already fallen behind in terms of military capability. One might argue that stronger states have more leeway in this regard. Returning to the case of India-Pakistan may help elucidate this dynamic. Wilkinson (2015) argues that coup-proofing is one of the primary reasons that the India has not experienced a coup attempt. Therefore, a country like India can engage in coup-proofing without necessarily losing their advantage. Even in the United States, military officers frequently rotate from assignment to assignment and, unless granted a waiver by Congress, retired military officers must wait at least seven years to receive an appointment as Defense Secretary (Herb and O'Brien 2017). Enjoying superior military capability means that coup-proofing does not necessitate that a state will fall behind others.

Let us now explore relative military capability as a causal mechanism that impacts the likelihood of a coup attempt. I demonstrate this dynamic in Figure 1 using a supply-demand framework in the market for capability. The Y-axis reflects the price of a coup, P, while the X-axis indicates the quantity of relative military capability produced, Q. I present five scenarios that demonstrate how the market for relative military capability influences a coup attempt.

[Insert Figure 1 about here]

The downward sloping curves – e.g. D1 and D2 in the figure below – reflect demand for relative capability. The demand curves slope downward because, as the price of capability increases, actors will demand it less. For coup plotters, as capability increases, they will have less demand for a coup because their corporate interests are satisfied. The D2 curve represents an exogenous shift that increases demand. The upward sloping curves – e.g. S1, S2, and S3 – represent the ability of the armed forces to supply a coup. The supply curves slope upward because, as the price of capability increases, actors will want to produce more of it. Again, for plotters, as capability rises, they will be in a better position to initiate an attempt. So, those who want to supply a coup will desire more to do so. The S2 curve represents an exogenous shift that decreases supply while the S3 curve represents an increase the ability to supply a coup. Intersection of any two curves indicates a possible equilibrium, E, as indicated in the figure. For instance, E1 indicates the military's equilibrium price of a coup when they face the demand curve, D1, and the supply curve, S1.

For a coup attempt to occur, plotters must *agree* to and have the *ability* to initiate the attempt. While it is likely unknown how many alleged plots have existed in

the world, if conspirators are to manifest their plot at a minimum they need to agree that the plot is worth it and have the ability to act on their designs. The horizontal line, T, indicates an exogenous threshold of *agreement* for a coup by the armed forces. This threshold for a coup to occur is manifested by a variety of factors and one can think of this threshold as controlling for the effect of other causes of a coup attempt, e.g. general factors such as regime type and economic development or particularities of a given country, e.g. the popularity of a leader. As a partial equilibrium framework, this figure illustrates how supply-and-demand for relative capability may lead to a coup, *ceteris paribus*. The use of a coup threshold thus aids this illustration.

If the equilibrium price, E, is above the threshold, T, plotters *agree* on a price of a coup. Correspondingly, if E is less than T, plotters cannot agree. Additionally, note that as that as Q decreases, plotters' *ability* to carry out a coup shrinks. Even if plotters agree on an attempt, less capability still hurts their ability to organize this effort. As the state increases capability, the military becomes better able to muster an attempt but still remains conditional on suppliers and demanders agreeing on the equilibrium price of the coup higher than the threshold.

[Insert Figure 1 about here]

We will now work through the model to better understand these dynamics. Let's begin with Figure 1a. In this instance, D1 and S1 reflect the respective demand and supply curves. Plotters agree on the price of a coup where supply equals demand, at the equilibrium price, E1. In this case the price of a coup falls below the threshold, T. E1 is thus not sufficiently high such that plotters deem a coup worth the cost of an attempt.

Let's move onto Figure 1b. An event occurs, e.g. onset of a militarized interstate dispute or a rival increases military spending, that increases demand for military capability because the country fears the prospects of future conflict, causing a

rightward shift from D1 to D2. This act creates a new equilibrium point E2 where the state will increase the amount of capability supplied. Unfortunately, this increase in demand causes E = T and now the armed forces can *agree* on initiating a coup attempt. Additionally, increasing capability gives the armed forces greater *ability* to attempt a coup.

Now let's consider how decreasing capability can lead to a putsch in Figure 1c. Let us return our demand curve to D1 and assess a leftward shift from S1 to S2. A leftward shift indicates that, at a given price of a coup, it has become more difficult to produce relative power, e.g. a leader decides to coup-proof its military or perhaps recession has lowered the amount of tax revenue to devote to defense. Note that as capability declines, we shift the equilibrium from E1 to E3, again creating a scenario where we intersect with T and produce a satisfactory price for a coup. Note that while plotters agree on the price of a coup, the probably that they will be able to muster the attempt has decreased because decreasing military capability has diminished their ability to coordinate, organize, et cetera. This, of course, is the logic of coup-proofing. As the figure shows, however, such an act has a pernicious cost as it brings potential plotters into agreement for a coup.

Now let's examine Figure 1d. If both demand for capability increases and it also becomes easier to supply capability, the equilibrium moves to E4. The price of a coup remains the same as E1, but the amount of capability has increased. Even though plotters cannot agree on a satisfactory price because they are below the agreement threshold, the military now has greater ability to initiate an attempt. If demand for capability increases in the future such that plotters can agree on a coup, plotters will be well-positioned to initiate the attempt.

Finally, in Figure 1e, a leader responds to increased demand for capability but the ability to supply capability decreases. The new equilibrium, E5, once again results in the same amount of capability supplied as E1. However, now plotters agree that a coup is necessary. If shifting demand is countered by a shift that decreases supply, e.g. a territorial conflict has erupted while a country is mired in a recession that has hurt the defense industrial base, the state finds itself in a terrible position where plotters may band together to act upon their aims.

All leaders must navigate cautiously in the waters of civilian-military relations and desire to keep the armed forces from agreeing on a satisfactory price for a coup. The central problem for the state is that demand for military capability is determined by the security dilemma. If leaders reduce military capability when demand is high, it ensures that the military will prefer a coup, despite the fact their ability to supply a coup has weakened. Weakness *relative* to external threats stimulate demand for more capability. The state can only control how much capability it supplies and even this control is constrained by a state's latent power, i.e. the economic base necessary to increase capability, technological factors, et cetera. Due to the security dilemma, weaker countries face incentives to increase their quantity of relative capability. In the context of the model, the security dilemma sets a high demand for these countries. This tendency increases the price of a coup. Thus, leaders in weaker states in particular must increase capability not only to survive but also to avoid a coup. However, officers will possess better *ability* to supply a coup attempt in the future, creating a precarious predicament for the state, especially if the demand for capability increases or the coup threshold lowers.

Contrastingly, actions that reduce plotters *ability* to attempt a coup, e.g. purposively through coup-proofing or exogenously through recession which limits

revenue, also help plotters *agree* that a coup is worthwhile. For a weaker state in a

security dilemma, it is unlikely that they can reduce military capability to a point such

that it will totally minimize ability to attempt a coup, as this condition would imperil

state survival. Because security dilemmas tend to increase demand for more relative

capability, weaker states will find that this condition pushes them to increase the ability

of plotters to attempt coups.

 The theoretical argument thus generates the following hypotheses:

H_1 (Central Argument): Increasing relative military capability makes a coup less likely. Attempts will be more likely at lower levels and this likelihood should decline as relative military capability increases.

 We might also expect low relative military capability to interact with other

geopolitical considerations. If a country is in an interstate rivalry, this condition may act

as a permissive condition for coups. For instance, spatial rivalries create territorial

issues that have long-run salience for weaker countries, e.g. the Kashmir dispute

between India-Pakistan. Stronger countries, however, are less likely to have the same

reaction. We can test this possibility by restricting the sample to only rivalries, where

we would expect the results from H_1 to hold regardless. Thus:

H_{2a} (Auxiliary Argument #1): Even in the presence of interstate rivalry, increasing relative military capability makes a coup less likely.

 Additionally, a new militarized interstate dispute may increase the security

dilemma and thus the demand for relative power. At lower levels of military capability,

we might expect a MID to act as a triggering phenomenon for a coup attempt.

Therefore:

H_{2b} (Auxiliary Argument #2): If a MID occurs, lower levels of relative military capability should increase the marginal effect of a MID's likelihood of a coup.

 In the next section, I will evaluate the theory with respect to these hypotheses.

Data and Large-N Empirical Assessment

The purpose of this section is to describe the data used in this study and present an empirical assessment of the above claims. I will take a two-pronged approach. First, I describe the empirical world and that we observe a statistically meaningful association between these phenomena. I will also present a statistical model that includes common control variables in the literature to assure the reader that other covariates cannot fully account for our observations and assess the extent of the relationship to provide confidence in both the generalizability of the model as well as the substantive effect of relative military capability on coups.

Dependent Variable

I will begin the descriptive section with my universe of cases as all countries during the years 1960-2006. For the dependent variable, I utilize the Powell and Thyne (2011)'s conception of a coup attempt, defined as "illegal and overt attempts by the military or other elites within the state apparatus to unseat the sitting executive." (Powell and Thyne 2011, 252)[2].

Independent Variable of Interest

The central explanatory variable concerns military capability. I argue that coup attempts are more likely to occur when relative military capability is low and decrease as relative capability increase. To pinpoint my measurement to military factors, I follow Parent and Rosato (2015)'s conception of relative military capability. Using data from the Correlates of War Project for military expenditures and military personnel, respectively,

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[2] Though the focus of this study is on coup attempts, it is worth considering coup success. A coup is considered "successful" if the plotters seize and hold power for at least seven days.

I determine each country's share of each variable relative to the international system. For example, the United States has the highest military spending in 1960. Therefore, it receives a score of 100. All other countries' totals are divided by U.S. military spending in 1960 to determine their relative military expenditures. I do the same procedure for military personnel. I then average the relative spending and personnel variables together to form the relative military capability variable. I will refer readers to the Appendix for robustness checks of the independent variable of interest[3]. My results do not substantively change.

Control Variables

Below includes my list of control variables in the multivariable model. These controls are largely derived from existing work, from landmark studies such as Powell (2012) and Florea (2017). My statistical models, therefore, build upon the existing literature and use the most current and accepted of control variables.

First, I will control for other international factors. For interstate conflict, I include controls for the onset of a new militarized interstate dispute (MID) to control for triggering effects of conflict; whether a MID is ongoing to control for long-term effects of existing conflict; the number of MIDs in which a country is involved to measure the intensity of existing conflict; and the time from the last MID to coup. Because the onset of a MID as an event may act as a triggering phenomenon of a coup, we would expect

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[3] In the Appendix, I test alternative specifications of capability. First, I include a rate of change variable in the model to control for whether changes in the *rate* of change in military capability matters. This variable tends to be also significant and conforms to the theory's expectations. Second, I substitute National Material Capability (NMCI) for my indicator. Again, my substantive results do not change.

lower capability to increase a MID's effect on the likelihood of a coup attempt.

Correspondingly, higher relative military capability should dampen the marginal effect

of conflict because states are more secure.

For rivalry, I follow Florea (2017) and adopt the four subtypes – spatial,

positional, ideological, and interventionist. Spatial rivalries concern territory, positional

rivalries concern hierarchical competition regarding status and influence, ideological

rivalries concern countries in competition over ideology, and the final subtype concerns

external military interventions by one country into another. I also include control

variables for an ongoing interstate war. Finally, data from the Correlates of War Project

codes whether the country belongs to a defensive pact, which is relevant because such

members may be able to better coup-proof, as suggested by Florea (2017)[4]. As an

enduring phenomenon, we might expect rivalry to have an effect as a permissive or

structural condition. Therefore, I will include a model where I subset on only the

presence of a rivalry to conflict for this possibility.

Next, I control for domestic explanations. Given the findings of Thyne (2017)

with regard to civil war, I include a control variable for an ongoing civil war. Change in

military expenditures as a percentage of GDP and the military spending per soldier

represent and whether the military relies on conscription acts as for the interests of the

military. Domestic instability comes from the NAVCO dataset of anti-government

resistance. GDP per capita (logged) and Change in GDP control for economic factors

while a dummy variable of whether the target is a a military regime comes from

Geddes, Wright and Frantz (2014). I also use accepted controls for coup-proofing, using

[4] The author credits anonymous reviewers for the inclusion of this variable. I, too, extend credit
   to these reviewers.

data on counterbalancing from Pilster and Bömhelt (2011) as well as conscription (Asal, Conrad, and Toronto 2018).

Empirical Analysis

I will first present descriptive associations of the data along with inferential test statistics to determine if our empirical associations possess statistical significance.

First, I assess H_1 by examining the frequency between coup attempts and relative military capability. As a form of categorization, I use the 'univar' command to assess the summary statistics and divide the sample as to whether a country-year observation is below the median level of military capability in the dataset. Table 1 displays the results. Over sixty percent (204/337) of coup attempts occur in countries below the median. The resulting odds ratio indicates that country-years with below-median relative capability are 1.56 times more likely to experience an attempt. The χ^2 statistic is significant at the $p < .000$ level, indicating that we can reject the hypothesis of statistical independence between the two phenomena.

[Insert Table 1 about here]

Next, I subset the above table to include only spatial rivalries, to provide an associational test of H_{2a} as Florea (2017) finds that spatial rivalries generate coups. Table 2 contains these results and yield an odds ratio of 1.67 that below median relative power will bring an attempt, a 21% increase from the odds ratio in Table 1 and an indication that coup attempts are even more common among weaker powers in rivalries.

Recall that the theory projects a differential effect where weaker countries will experience more coup attempts than stronger ones. To check whether this association does indeed exist, I analyze 57 rivalry dyads based on Thompson (2001) from the set of

enduring rivalries and strategic rivalries according to a few criteria. First, the table is bound by some data limitations because there is no reliable dataset with observations of coup attempts in the pre-1945 era. Second, some rivalries last longer than others. Therefore, I only include dyads where there is an enduring or strategic rivalry (or some combination) that lasts for a significant length of time (i.e. over 20 years) or has been ongoing since the country's founding. Third, some countries resurface as they belong to multiple rivalries. This feature represents a layered view of international relations such that the more powerful country in one dyad may be a weaker country in another, in keeping with the argument's predictions.

Table 3 shows the disparity in coups between countries in a rivalry. The left-hand column indicates the country with more relative power and the adjacent column indicates the country in the less advantageous position. The list is derived from Thompson (2001)'s list of rivalries. To determine which country is stronger, I analyze ratios of military spending, military personnel, and CINC scores. If necessary, I also consider whether a country has a close military relationship with the United States and its own geopolitical situation, e.g. frequent border conflicts with neighboring states. My notes on the cases are contained in the replication data.

[Insert Table 3 about here]

The table demonstrates strong support for the theory. In 57.9% (33/57) of rivalry dyads, the weaker country experienced more coup attempts and in only 24.56% (14/57) did the stronger country experience more coups, a 135% increase. Fittingly, being the weaker power produces an average of 1.38 more coup attempts. Given that coups themselves are rare events, this is a significant increase. In order to test whether this

relationship is statistically significant, I follow the strategy of Galbraith, Priest, and Purcell (2007) by conducting a Wilcoxon signed-directional test on the dyads. This method of analysis is most frequently utilized in small to medium N samples because the researcher need not make a parametric assumption regarding the data. Thus, it is appropriate for our purposes. This analysis demonstrates that the observed relationship of weaker countries experiencing more coups is statistically significant, as seen in the table, at the $p < .01$ level . Weaker countries are much likelier to experience coups compared to the stronger members of a dyad and strongly bolsters the claim of my theory and affirms H_1. and H_{2a}.

Next, I check H_{2b} to observe the association between relative capability and the onset of a MID. First, I graph this association in Figure 2, a time-series plot that presents the probability of a coup with respect to the number of years before and after a MID. As the graph shows, the probability of a coup increases dramatically when a MID occurs. On average, the likelihood of a coup before a MID is approximately two percent. However, when a MID occurs, the likelihood spikes. Moreover, this probability falls in the subsequent year. This result conforms to the theoretical expectations that MIDs represent a triggering mechanism for coups as opposed to a long-run, structural determinant.

[Insert Figure 2]

I next use a contingency table to further quantify this relationship with respect to military capability. Table 4 contains the results. Being below the median value of military capable when a militarized interstate dispute occurs yields an odds ratio that a coup is 2.52 times likelier to occur. This frequency is much higher than the typical odds, and in conjunction with Figure 3, suggests a triggering effect between the two

phenomena and encourages us to include an interaction term in our large-N
multivariable model.

[Table 4]

For the multivariable analysis, I use a Random Effects GLS model (ala Singh
2014) with robust standard errors and cubic splines of coup years to control for the
effect of time in binary data (Beck, Katz, and Tucker 1998; Carter and Signorino 2010).
I opt for the usage of a random effects versus fixed effects model because the between
effect, as opposed to the within effect, is more important in the model for substantive
and methodological reasons. A fixed effects estimator only measures the within effect
of our parameters. As noted by Kim (2018b) with respect to geopolitical competition
between countries, long-run parameters such as relative power tend not to demonstrate
significant within-variation. Thus, a fixed effects model will not pick up the effect of
the covariates. Additionally, the between effect, e.g. how the United States differs from
Syria, is the most salient and interesting aspect of this study. Therefore, a random
effects model is more appropriate for our purposes.

I use several variations of the models. In Models 1-3, I replicate all three sets of
covariates from Florea (2017). In Model 4, I include an interaction term between
military capability and MID onset. In Model 5, I restrict the sample to only include
rivalries and allow spatial rivalry to remain as a dummy variable, thus shifting the
reference category from non-rivalries to non-spatial rivalries. In Model 6, I add a
squared term of relative military capability to test for the possibility of a curvilinear
relationship to the dependent variable using the full set of covariates.

Table 4 displays these results. For conceptual clarity of military capability's
effect, I report the odds ratios of the variables. An odds ratio lower than 1 indicates that
the variable reduces the likelihood of a coup attempt while values higher than 1 indicate

the event increases the probability. All of the models demonstrate that relative

capability discourages coup attempts. In Models 1-3, increasing capability generally

makes coups roughly 1.43 times less likely ($1/.7 = 1.43$). While the onset of a new MID

seems to substantially increase the likelihood of an attempt by 2.5 times, the presence of

an ongoing MID decreases this likelihood by a similar amount ($1/.4 = 2.5$). Ongoing

interstate war, spatial rivalry, higher military spending per soldier and domestic

instability also increase the likelihood of an attempt. GDP per capita, as one might

expect, tends to lower this probability. These results support the overall thesis that

external threat exacerbates coup attempts.

[Insert Table 4 about here]

In Model 4, I test H$_{2b}$. The interaction term[5] between military capability and

MID onset is statistically significant. I graph the marginal effects between relative

power and MID onset in Figure 3. The left-most graph indicates that low levels of

power increase the marginal effect of MID onset but that at higher levels this marginal

effect is indeterminate, as the confidence interval overlaps with positive and negative

values at higher levels of capability. The right-most graph indicates that the onset of a

new MID does not substantially change military capability's effect on an attempt

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[5] In the Appendix, I also report an interaction term of relative power and an ongoing MID,

respectively. While the interaction is significant, the graphs of these relationship reveal

indeterminate effects. Please see the appendix for these results. I also test interactions with

ongoing war and instability but neither of these interactions are significant.

because the confidence intervals never cross zero. Therefore, military capability

continues to reduce the likelihood of a coup whether or not a new MID occurs.

[Insert Figure 3 about here]

Based on this comparison, we can draw the conclusion that the effect of the

interaction term is driven by low relative power's increasing the marginal effect of

MIDs. In the context of the theory advanced by this study, this result matches our

expectations. When relative power is low, we would expect onset of a new conflict to

act as a stressor on civilian-military relations.

In Model 5, I restrict the sample to include only rivalries. Because spatial rivalry

is significant in Models 1-4, I allow it to remain as a dummy variable, thus testing

whether spatial rivalry is significant compared to the reference category of non-spatial

rivalries. While spatial rivalry becomes insignificant, relative power remains significant,

though the odds ratio decreases, increasing military capability is still 1.22 times less

likely to produce a coup attempt. While this effect is not quite as strong as Table 2

would suggest, it nevertheless confirms that relative capability reduces the likelihood of

coups even within rivalries.

In Model 6, I allow for the possibility that a curvilinear relationship exists

between capability and a coup attempt. The significance of the squared term tells us that

a curvilinear relationship likely exists. To determine the nature of the relationship, I

graph the predicted probability of a coup attempt with respect to relative military power.

In Figure 4, I plot this relationship. The left-most plot shows that at low levels of

military power, the probability of a coup is at its highest and this effect declines as

power increases. The right-most plot is the same graph but restricted to bottom 25% of capability to better focus on the curvilinear relationship.

[Insert Figure 4 about here]

Overall, the results provide support for the claim that relative power influences coup attempts. At low levels of relative military power, coups are more likely. As capability increases, the probability of a coup attempt declines. Moreover, low capability increases the effect of a MID onset on an attempt. Restricting the sample only to rivalries does not substantively change our results and allowing for the possibility of a curvilinear relationship reveals a relationship approximating an exponential decay in the predicted probability of an attempt[6].

Discussion and Conclusion

The pursuit of relative power creates a difficult problem for leaders in weaker positions. The security dilemma increases demand for a coup attempt and makes coup-proofing problematic largely due to the fact that most coup-proofing strategies reduce military effectiveness. Leaders are thus pushed to increase military capability, but strengthening the armed forces increases their latent capability to supply a coup attempt.

I would like to now deal with some possible concerns, implications, and limitations of the study.

First, while I reviewed the literature that coup-proofing does not often discourage coups, until now I have asserted that low relative military power discourages

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[6] As opposed to a U-shaped relationship.

the state from coup-proofing. One possible empirical objection would be that embattled leaders often violate this logic. While this does not violate the theory, per se, it does question the empirical implications of the security dilemma logic. My empirical results suggest, however, that this is not the case. Testing reveals that having below median military capability renders a state 1.58 times likely to coup-proof below the median and the observations in the lowest quantile of capability are 2.61 times more likely to coup-proof below this level. Additionally, I conduct Mann Whitney U tests which show that we should expect to observe more coup-proofing than we empirically observe among weaker countries. These results are strongly significant[7]. These results ensure that the empirical outcomes regarding coup-proofing among weaker states are consistent with our theoretical expectations.

Second, the large-N empirical results in the above section demonstrate that low relative power indeed increases the likelihood of a coup. Because the theory checks out vis-à-vis coup attempts, one might argue that incentivizing embattled leaders by increasing military capability not only increases their ability to wage a coup *attempt* but also aids plotters to more *successfully* orchestrate a coup. Because the pursuit of relative power, caused by the security dilemma, exacerbates the guardianship dilemma and affects the balance of power *domestically* between the armed forces and the chief executive, higher *absolute* levels of military spending or military personnel, should increase the likelihood of coup success given that an attempt occurs. This suggests the following possible hypothesis:

H3 (Possible implication of argument): Higher levels of military spending or military personnel increase the likelihood of coup success given that an attempt occurs.

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[7] Z=15.131 and 18.272, respectively. For the sake of conserving space, I include these analyses

in the Appendix, using both cross tabulations and the 'ranksum' command in STATA 14.

There are a few points we should make. Increasing the military's ability to supply a coup attempt is conceptually distinct from the ability to supply a *successful* coup attempt. A coup, once initiated, becomes a complicated phenomenon. Singh (2014), for instance, conceptualizes an attempted coup as an intra-military coordination game decided in favor of whomever can more expediently postulate the outcome of an attempt as a fait accompli. For this reason, most coups involve efforts to capture the broadcast station and declare victory via the airwaves. While it is possible that more military capability may assist in this effort, e.g. better technology may facilitate communication,

It is also worth considering the empirical difficulty of evaluating H₃. First, as Singh (2014) again notes, variables important to such an analysis, e.g. media liberalization are generally unavailable or lacking (p. 64). Second, the author discusses the problematic methodological usage (p. 75-76) of the Heckman probit-probit estimator (Van de Ven and Van Pragg 1981) which has been used by many of the recent studies on coup outcomes (Powell 2012; Pilster and Böhmelt 2015; Florea 2017). Moreover, my intent is not to stake out a new claim on coup success but rather explore whether factors that lead to coup attempts may also affect success and provide a basis for future avenues to research. Therefore, despite methodological difficulties, testing the possible implications is something of a public good and worth the challenge.

I now turn to testing. In this analysis, I use both the Heckman probit-probit estimator as well as Singh (2014)'s strategy of using a Random Effects GLS logit model subset on coup attempts as a robustness check. The results are presented in Table 6. While military spending is insignificant, military personnel is positively signed and significant at the $p < .05$ level when we include covariates that indicate whether spending or personnel increased that year and is still significant at the $p < .10$ level

when these covariates are omitted. Interestingly, increases in military personnel from year to year lower the likelihood of success. Note, as well, that in the attempt equation that military capability is negative and significantly signed much as the previous results suggest[8]. Note that in the RE GLS results, while military personnel is significant, it does not increased the odds of success by very much. However, increases in military personnel the year of a coup drastically reduce the likelihood of success, making it 2.17 less likely to achieve their result.

[Insert Table 6 about here]

This result synergizes quite well with both the theory as well as existing work such as Singh (2014). Most coups are bloodless and do not involve a lot of fighting and, therefore, may not require a lot of materiel. This fact should make military spending less important for fostering a successful outcome. However, if military coups are indeed properly analogized as coordination games, then changes in the quantity of personnel should matter a great deal. Larger militaries should be able to exert more of an influence on the state. Moreover, increasing military personnel in a given year has a negative effect on coup success. This result suggests that acquiescing to the military's immediate need for troops has an influence on stifling successful coups. In a what-have-you-done-for-me-lately world, the yearly increase of military personnel seems to matter a great deal. Again, this pattern fits the theory's expectations. If a leader is going to have a large military, leaders should be warned against actions which curb its power.

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[8] Remember that in Table 4 I presented the odds ratios. The reporting odds ratio is not available with the 'heckprob' command in STATA to my knowledge.

Only recently have scholars of coups begin to integrate the international environment into their analysis. Because the security dilemma represents a bedrock concept in international relations theory, it deserves a systematic treatment with the coup literature. By necessity, then, when we consider the guardianship dilemma, again a bedrock concept but in the literature of civilian-military relations, we find that these two concepts possess theoretical overlap. In the theory section of this paper, I illustrated how these two dilemmas interact. Although intense security dilemmas exacerbate the guardianship dilemma, running the risk of a coup attempt by empowering the military may at times represent a rational decision by leaders.

Ultimately, the theoretical model described in this essay plays itself out in the empirical world as well. My work thus complements prior scholarship on the link between external threats and rivalry with coup attempts, as these determinants certainly add to the intensity of the security dilemma. Moreover, I don't seek to dismiss existing domestic explanations. But despite the voluminous literature on power between nations, we still have much work ahead of us.

As I conclude this essay, I should remark that this study indeed represents a first step, staking out an innovative and fresh theoretical perspective for future study. Deeper explorations of this dynamic, e.g. the usage of longer and more detailed case studies than can permit of a single article, deserve consideration. Data availability has restricted my analysis to an abbreviated sample, but the theory itself has no temporal scope. Expanding the temporal analysis would allow more within-variation of relative power between countries and may allow us to draw comparison between past and present, e.g. while Europe has experienced few coups post-1945, how well does this trend hold in prior eras? We can also use the theory to explore counterfactuals. For instance, if the roles were reversed and the Soviet Union had outpaced the United States in terms of

military capability, would the United States have experienced a coup attempt at its nadir? My theory allows us to explore such conjectures with systematic rigor and clarity.

Because of my emphasis on relative power, I've proxied security dilemmas largely through a combination of material capability. Others might also consider alternative measurements that include offense/defense balance or nuclear proliferation, especially the latter given the literature on how such proliferation may alter states' foreign policy (Bell 2015). Regardless of the path selected, the integration of the security and guardianship dilemmas articulated in this study charts a course toward an exciting and fresh field of inquiry for both theorists and empirical researchers.

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Tables

Table 1. Cross-tabulation of Relative Military Capability and Coup Attempts

	Coup Attempt		
Below Med. Capab.	No	Yes	Totals
No	1,330	28	1,358
Yes	5,743	309	6,052
Totals	7,073	337	7,410
Pearson's $\chi^2(1) = 23.6724$, $p < .000$			

Table 2. Cross-tabulation of Relative Military Capability and Coup Attempts Among Spatial Rivalries

	Coup Attempt		
Below Med. Capab.	No	Yes	Totals
No	1,409	88	1,497
Yes	669	70	739
Totals	2,708	158	2,236
Pearson's $\chi^2(1) = 9.7309$, $p < .000$			

Table 3. Frequency of coup attempts among rival dyad members

Strong mem.	Weak mem.	Strong Coup freq.	Weak Coup freq.	Years
Iran	Afghanistan	0	1	1996 – pres.
Pakistan	Afghanistan	3	5	1947-1989
Algeria	Morocco	3	2	1962 – pres.
Brazil	Argentina	3	9	1817-1985
U. K.	Argentina	0	6	1965 – pres.
Argentina	Chile	10	1	1843 - 1991
Azerbaijan	Armenia	2	0	1991 – pres.
Bahrain	Qatar	0	2	1986 – pres.
Guatemala	Belize	4	0	1981-1993
Chile	Bolivia	0	12	1836 – pres.
Croatia	Bosnia	0	0	1992 – pres.
U. K.	Iraq	0	9	1958 – pres.
Mali	Bur. Faso	1	5	1960-1986
Thailand	Cambodia	4	2	1953-1987
Nigeria	Cameroon	6	1	1975 – pres.
Libya	Chad	2	6	1966-1994
China	India	0	0	1950-1987
China	S. Korea	0	1	1950-1987
S. Korea	N. Korea	1	0	1953 – pres.
China	Taiwan	0	0	1945 – pres.
Colombia	Venezuela	1	6	1831 – pres.
United States	Cuba	0	1	1959-1990
Peru	Ecuador	5	7	1830-1998
United States	Ecuador	0	4	1952-1981
Iran	Egypt	0	1	1979 – pres.
Egypt	Iraq	3	9	1945 – pres.
Israel	Egypt	0	2	1948-1989
Ethiopia	Somalia	4	3	1960-1988
Ethiopia	Sudan	2	7	1965 – pres.
Ghana	Togo	9	3	1960-1995
Greece	Turkey	2	6	1955 – pres.
Venezuela	Guyana	3	0	1966 – pres.
India	Pakistan	0	4	1947 – pres.
Iran	Iraq	0	9	1958 – pres.
Iran	Israel	0	0	1979 – pres.
Russia	Iran	0	0	1908-1987
Saudi Arabia	Iran	0	0	1979 – pres.
Israel	Iraq	0	7	1948-1991
Iraq	Kuwait	7	0	1961-1991
Israel	Jordan	0	1	1948-1994
Israel	Syria	0	7	1948 – pres.
S. Arabia	Israel	0	0	1957-1981
Russia	Japan	0	0	1895-1984
Syria	Jordan	7	1	1949-1991
Thailand	Laos	4	5	1960-1988
Tanzania	Malawi	0	0	1964-1994
Zambia	Malawai	1	0	1964-1986
Spain	Morocco	1	2	1956-1991
Russia	Norway	0	0	1956-1987
United States	Peru	0	5	1955-1992
United States	Russia	0	1	1945 – pres.
Saudi Arabia	Yemen	0	4	1962-1994

Vietnam	Thailand	0	4	1954-1989
South Africa	Zambia	0	2	1965-1991
N. Vietnam	S. Vietnam	0	4	1954-1975
N. Yemen	S. Yemen	4	3	1967-1990

Wilcoxon signed-directional test results: $Z = -2.717$, $p < .01$

Table 4. Cross-tabulation of Relative Military Capability and Coup Attempts when MIDs onset

Below Med. Capab.	Coup Attempt		
	No	Yes	Totals
No	1,445	64	1,509
Yes	465	52	517
Totals	1,910	116	2,026

Pearson's $\chi^2(1) = 24.1378$, $p < .000$

Table 5. Random Effects GLS Regression

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Rel. Mil. Capability	0.717***	0.699***	0.700***	0.819**	0.797**	0.653***
	(0.0722)	(0.0741)	(0.0738)	(0.0818)	(0.0869)	(0.0762)
Rel. Mil. Capability (squared)						1.004***
						(0.00137)
MID onset	2.787***	2.626***	2.574***	3.927***	4.482***	2.574***
	(0.794)	(0.782)	(0.749)	(1.402)	(1.822)	(0.747)
Rel. Mil. Capab.*MID onset				0.778**		
				(0.0893)		
Ongoing MID involvement	0.409**	0.435**	0.435**	0.383***	0.612	0.435**
	(0.148)	(0.159)	(0.158)	(0.138)	(0.334)	(0.158)
No. of MIDs	0.921	0.930	0.933	0.993	0.919	0.933
	(0.125)	(0.119)	(0.119)	(0.129)	(0.116)	(0.119)
Time from MID to coup	1.377***	1.440***	1.432***	1.439***	3.762***	1.431***
	(0.164)	(0.190)	(0.187)	(0.189)	(1.441)	(0.187)
Intrastate war	1.082	0.985	1.012	1.085	1.710	1.004
	(0.444)	(0.359)	(0.369)	(0.400)	(0.902)	(0.366)
Interstate war	3.372**	3.324**	3.284**	3.611**	3.319**	3.299**
	(1.971)	(1.971)	(1.948)	(2.207)	(1.898)	(1.966)
Spatial Rivalry	2.437**	3.263***	3.218***	3.334***	0.908	3.222***
	(0.933)	(1.342)	(1.306)	(1.347)	(0.731)	(1.309)
Positional Rivalry	1.315	1.342	1.313	1.216	1.411	1.325
	(0.685)	(0.664)	(0.640)	(0.585)	(0.852)	(0.644)
Ideological Rivalry	1.096	1.228	1.225	1.184	1.153	1.207
	(0.663)	(0.723)	(0.710)	(0.705)	(0.849)	(0.694)
Interventionist Rivalry	0.474	0.456	0.461	0.452	0.543	0.461
	(0.200)	(0.202)	(0.208)	(0.206)	(0.437)	(0.207)
Milex/Milper (logged)	1.536**	1.727**	1.734**	1.652**	1.771	1.806**
	(0.308)	(0.401)	(0.410)	(0.381)	(0.618)	(0.431)
Ch. Mil. Exp	1.000	1.000	1.000	1.000	0.999	1.000
	(0.00108)	(0.000922)	(0.000942)	(0.000985)	(0.000764)	(0.000933)
Ch. GDP	0.203	0.222	0.232	0.228	3.112	0.231
	(0.279)	(0.340)	(0.362)	(0.358)	(5.762)	(0.361)
GDP per capita (logged)	0.447**	0.454**	0.449**	0.445**	0.996	0.452**
	(0.142)	(0.154)	(0.153)	(0.152)	(0.362)	(0.153)
Coupproofing	0.846	0.938	0.921	0.918	0.803	0.917
	(0.265)	(0.301)	(0.295)	(0.298)	(0.387)	(0.295)
Instability	1.356***	1.340***	1.338***	1.319***	1.334***	1.338***
	(0.117)	(0.117)	(0.117)	(0.115)	(0.0992)	(0.117)
Mil. Regime		1.789	1.791	1.897	1.890	1.793
		(0.628)	(0.626)	(0.671)	(1.108)	(0.627)
Conscription		0.408	0.407	0.413	0.283**	0.409
		(0.215)	(0.214)	(0.214)	(0.157)	(0.214)
Alliance			1.275	1.247	0.900	1.274
			(0.559)	(0.541)	(0.810)	(0.561)
Time since last coup	1.020	1.024	1.023	1.024	1.014	1.024
	(0.0177)	(0.0196)	(0.0193)	(0.0194)	(0.0268)	(0.0195)
Constant	1.352	0.588	0.574	0.584	0.000827**	0.510
	(2.669)	(1.295)	(1.243)	(1.280)	(0.00268)	(1.105)
Observations	3,855	3,797	3,784	3,784	1,690	3,784
Number of ccode	166	166	165	165	89	165
Chi-squared statistic	189.1	192.5	207.6	206.1	127.4	223.8

Reporting odds ratios, robust Standard errors in parentheses, cubic splines unreported
*** p<0.01, ** p<0.05, * p<0.1

Table 6. Heckman probit-robit / RE GLS Estimation of coup outcomes

VARIABLES	Heckman probit-probit estimator				RE GLS logit	
	success	attempt	success	attempt	success	success
Military Exp.	-4.79e-08		-5.93e-08		1.000	1.000
	(4.41e-08)		(4.24e-08)		(5.68e-07)	(5.84e-07)
Military Per. (thou.)	0.000825*		0.00114**		1.006*	1.008**
	(0.000457)		(0.000466)		(0.00349)	(0.00391)
Mil. Exp. Increase			0.121			1.768
			(0.0817)			(0.855)
Mil. Per. Increase			-0.146*			0.461**
			(0.0831)			(0.169)
Rel. Mil. Capab.		-0.0964***		-0.0963***		
		(0.0313)		(0.0313)		
MID Onset	0.417	0.477***	0.367	0.478***	7.538	5.386
	(0.234)	(0.124)	(0.232)	(0.124)	(9.835)	(6.934)
Ongoing MID inv.	-0.417	-0.420***	-0.350	-0.420***	0.189	0.264
	(0.231)	(0.155)	(0.233)	(0.156)	(0.213)	(0.297)
No. of MIDs	-0.0625	-0.00952	-0.0674	-0.00977	0.595	0.596
	(0.0909)	(0.0684)	(0.0863)	(0.0685)	(0.273)	(0.253)
Time MID to coup	0.00707	0.0598***	0.00895	0.0598***	0.987	1.002
	(0.0104)	(0.00711)	(0.0109)	(0.00712)	(0.0325)	(0.0431)
Intrastate war	0.0915	0.189	0.0780	0.190	1.034	1.004
	(0.124)	(0.132)	(0.123)	(0.132)	(0.616)	(0.622)
Interstate war	0.0537	0.626***	0.0629	0.626***	1.326	1.421
	(0.196)	(0.217)	(0.190)	(0.217)	(1.350)	(1.364)
Spatial Rivalry	0.162	0.289***	0.169	0.290***	1.702	1.803
	(0.0966)	(0.107)	(0.0959)	(0.107)	(0.611)	(0.628)
Positional Rivalry	-0.105	0.153	-0.155	0.153	0.531	0.418
	(0.112)	(0.128)	(0.112)	(0.128)	(0.299)	(0.231)
Ideological Rivalry	0.00931	-0.0893	0.0277	-0.0887	1.478	1.576
	(0.111)	(0.114)	(0.118)	(0.114)	(0.745)	(0.889)
Interv. Rivalry	-0.153	-0.306	-0.134	-0.307	0.462	0.480
	(0.174)	(0.164)	(0.172)	(0.164)	(0.326)	(0.329)
Milex/Milper (log)	-0.0185	0.0523	-0.0255	0.0522	0.817	0.755
	(0.0544)	(0.0475)	(0.0541)	(0.0474)	(0.217)	(0.205)
Ch. Mil. Exp.	-0.204**	-0.000381	-0.162	-0.000379	0.375	0.439
	(0.0792)	(0.000811)	(0.0861)	(0.000794)	(0.191)	(0.236)
Ch. GDP	0.128	-0.802	0.00490	-0.800	1.955	1.096
	(0.586)	(0.570)	(0.574)	(0.570)	(6.719)	(3.854)
GDP per capita (log)	-0.102	-0.180***	-0.0792	-0.179***	0.852	0.950
	(0.0610)	(0.0506)	(0.0616)	(0.0507)	(0.307)	(0.356)
Coupproofing	-0.122	-0.0367	-0.133**	-0.0369	0.696	0.650
	(0.0673)	(0.0775)	(0.0635)	(0.0776)	(0.253)	(0.227)
Instability	0.0221	0.104**	0.0196	0.104**	0.994	0.987
	(0.0312)	(0.0413)	(0.0312)	(0.0413)	(0.137)	(0.151)
Mil. Regime					1.770	1.790
					(0.668)	(0.664)
Conscription					1.027	0.953
					(0.465)	(0.444)
Alliance					0.586	0.597
					(0.310)	(0.328)
Time since last coup	-0.00327	0.0101**	-0.00290	0.0101**	0.977	0.977
	(0.00553)	(0.00492)	(0.00546)	(0.00492)	(0.0239)	(0.0259)
Constant	1.038**	-0.375	0.883**	-0.376	12.35	6.522
	(0.436)	(0.408)	(0.436)	(0.409)	(30.21)	(16.28)
Observations	3,855	3,855	3,855	3,855	155	155
Number of ccode	.	.	.	.	60	60
chi2	56.96	56.96	72.06	72.06	54.55	75.20

Robust standard errors in parentheses, cubic splines unreported;
Odds ratios displayed w.r.t. RE GLS
*** p<0.01, ** p<0.05, * p<0.1

Figures

Fig 1. Supply-Demand Market for Rel. Mil. Capability

Figure 2. Pr(coup) when a MID occurs
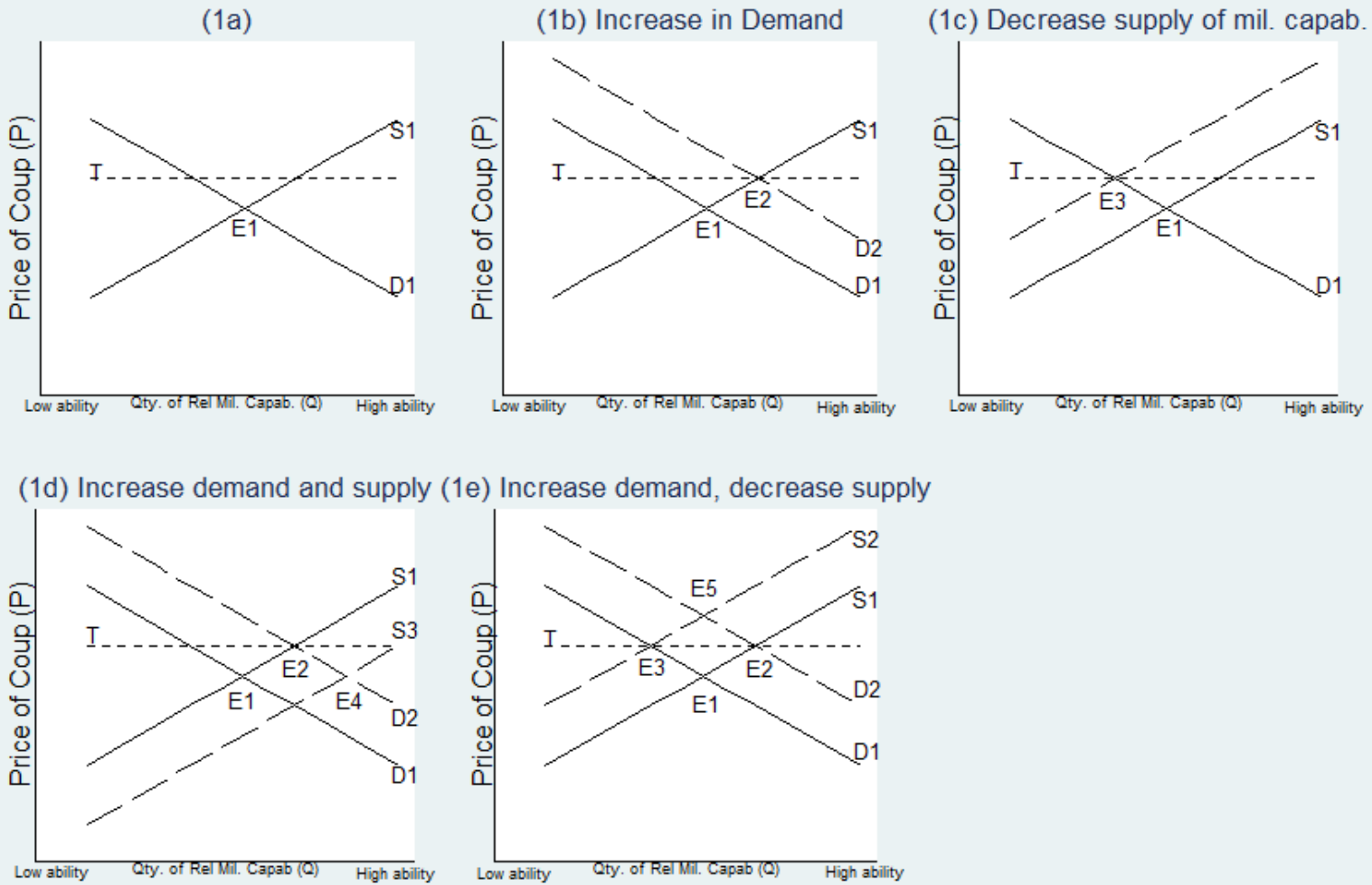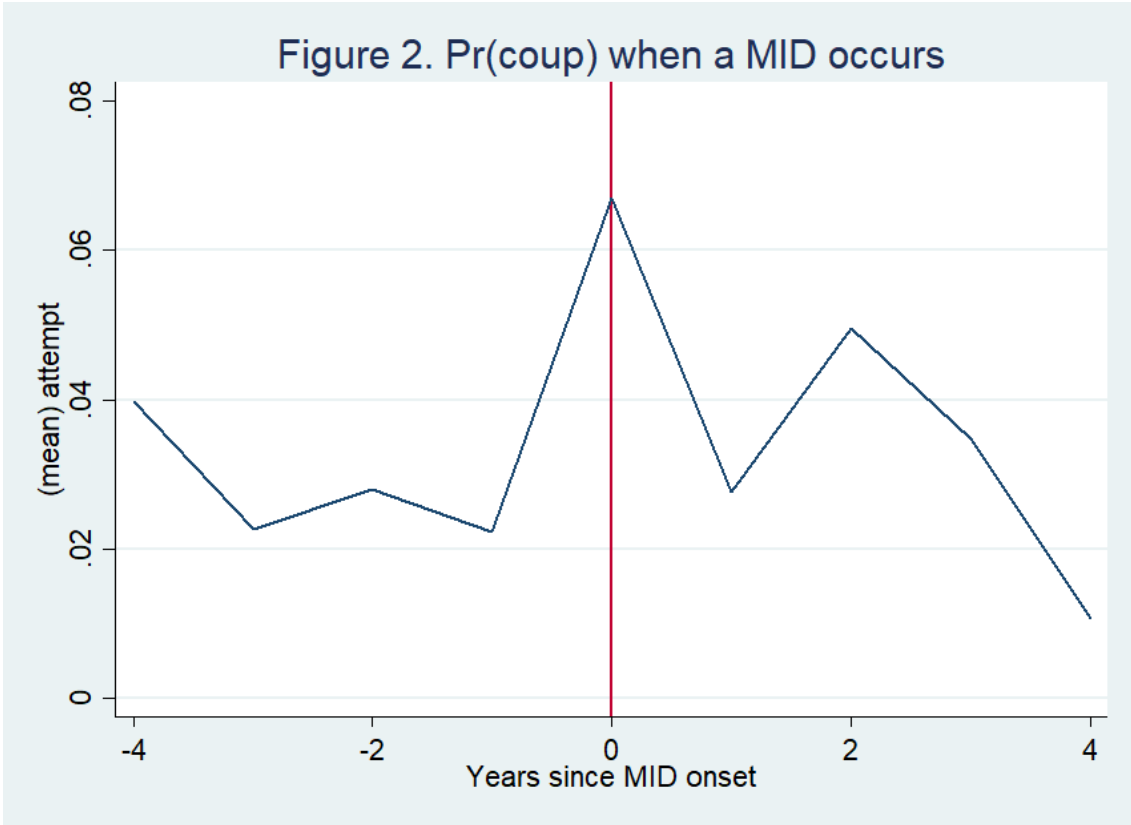
Figure 3. Marginal Effects of Rel. Power and MID onset
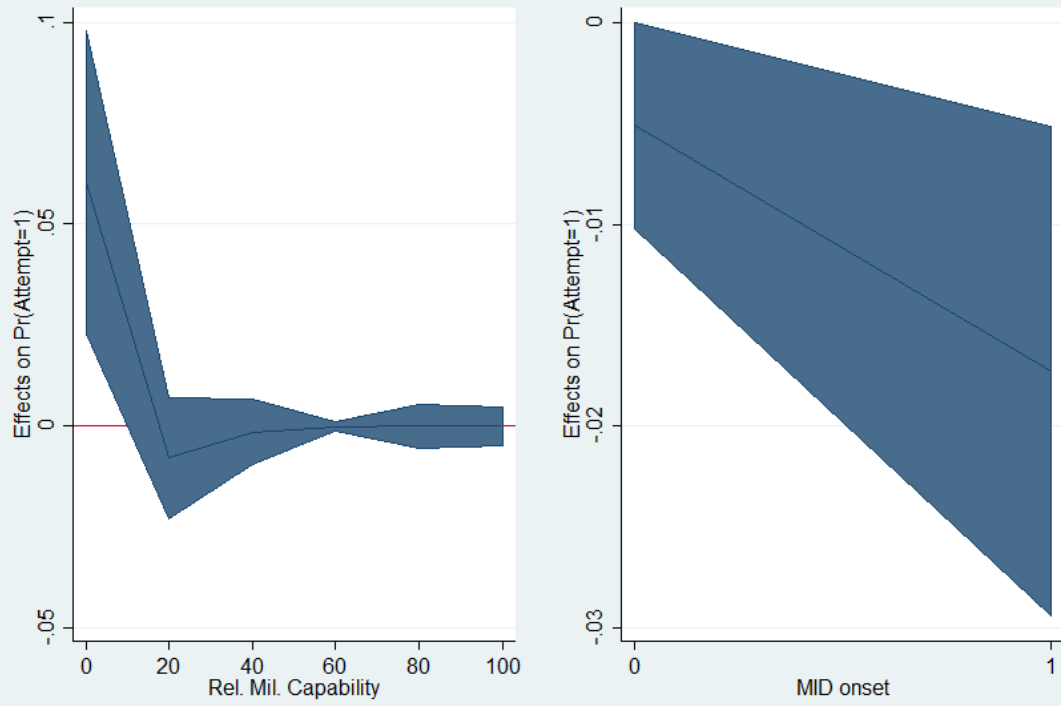
Figure 4. Predicted probability of Rel. Power's effect on a coup attempt
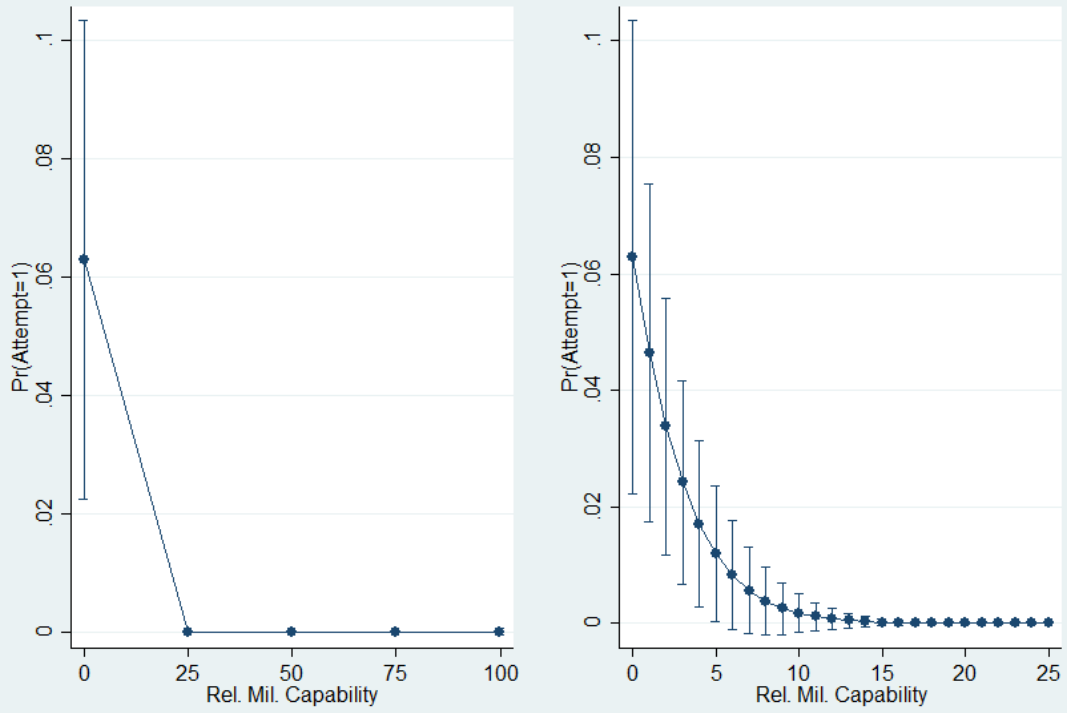
APPENDIX for "Tale of Two Dilemmas: Interstate Conflict and Coups d'état"

<u>1. Some summary statistics of Table 3</u>

To construct Table 3, I used the Correlates of War data to compare countries over the duration of their time in the dataset, using the 'collapse' feature in STATA to create average of their military expenditures, personnel, CINC, and soldier quality, defined as mil. exp per soldier. I also considered the country's relationship to superpowers during the period, such as the U.S. and the Soviet Union, or its broader geographic positioning. Much of that is contained in my notes on the data file.

Nevertheless, Table 3A provides some additional summary statistics of the quantitative analysis. A score of "3" indicates that stronger country had an advantage in all three categories. Thus, over 70% of the sample falls into this category. Overall, well over 96% of the stronger countries have some kind of advantage over the other, with 86% having an advantage in at least two categories.

Table 3A. Does stronger have an advantage in Mil. Exp., Mil. Personnel, or CINC

```
|   Freq.    Percent     Cum.
------------+----------------------------------
      0 |      2     3.51     3.51
      1 |      6    10.53    14.04
      2 |      9    15.79    29.82
      3 |     40    70.18   100.00
------------+----------------------------------
   Total |     57    100.00
```

The only two rivalries that do not fall into this category are Greece/Turkey and Bahrain/Qatar. In my notes contained in the data file, I explain my rationale for where I assign them in the table. However, even if we omit them from the sample, the Wilcoxon test remains statistically significant ($z = -2.504$, $p = 0.0123$). Thus, the results in the table are comparatively robust to alternative specifications.

2. Mann Whitney U test on Coup Differentials (Table 3)

In the Wilcoxon Signed Directional test used in the paper, I assess whether relatively weaker countries in rivalries experience more coups. Alternatively, however, we might be interested in using coup differential as a continuous measure and assessing whether grouping countries according to whether stronger or weaker countries experienced higher differentials.

First, I conduct the test with respect to the coup differential with respect to weaker countries experiencing more coups. For simplicity's sake, I have posted the STATA output in this section in Table 3B:

Table 3B. Two-sample Wilcoxon rank-sum (Mann-Whitney) test

```
 weaker_more |    obs   rank sum   expected
-------------+--------------------------------
        0 |    23      276       667
        1 |    34     1377       986
-------------+--------------------------------
   combined |    57     1653      1653

unadjusted variance    3779.67
adjustment for ties     -51.57
              ----------
adjusted variance      3728.10
```

Ho: coup_d~f(weaker~e==0) = coup_d~f(weaker~e==1)
        z = -6.404
   Prob > |z| =   0.0000

       We can see from the above that expected rank sum under the null hypothesis of statistical independence, 986, is much smaller than what we actually observe, 1377. The Z-statistic is also strongly significant, indicating strongly in favor of rejecting the null hypothesis.

       If we turn to the coup differential, sorted by whether stronger countries experienced more coups. Once again, I have pasted the STATA output below in Table 3C. In this case, we observe that the expected rank sum under the null hypothesis of statistical independence, 406, is much higher than what we actually observe, 105. Again, a strongly significant p-value on the Z-statistic allows us to easily reject the null hypothesis.

Table 3C. Two-sample Wilcoxon rank-sum (Mann-Whitney) test

```
 stronger_m~e |    obs   rank sum   expected
-------------+--------------------------------
        0 |    43     1548      1247
```

```
          1 |    14     105     406
-------------+--------------------------------
   combined |    57    1653    1653
```

unadjusted variance   2909.67
adjustment for ties   -39.70
                     ----
adjusted variance   2869.97

Ho: coup_d~f(stron~re==0) = coup_d~f(stron~re==1)
        z =   5.619
   Prob > |z| =   0.0000

------

3. Alternative specifications of the IV in Table 5

3a. Inclusion of growth in relative mil. capability

Recall that in Figure 1 that changes in the supply-demand framework for military capability affect the propensity for coup attempts. While Table 5 tracks how this variation in capability affects, one might also suspect that changes in the *rate* of military capability's variation may also be salient. If rel. military capability is accelerating, one might suspect that it will lower the likelihood of a coup attempt. On the other hand, if capability is decelerating, we would expect the armed forces to become motivated to strike a blow against the state.

Table 5A presents these results. Models 1-3 and 6 retain the same significance for the level version of military capability. In Model 4, the interaction term remains significant while in Model 5 it does become insignificant. However, the capability growth variable remains significant and reduces the odds of a coup attempt in all equations to a similar extent as the level variable. Therefore, all of the equations demonstrate support for the theory's claim.

.

Table 5A. Inclusion of growth variable

VARIABLES	attempt	attempt	attempt	attempt	attempt	attempt

	(1)	(2)	(3)	(4)	(5)	(6)
rel_milcapab	0.720***	0.704***	0.706***	0.828	0.825	0.661***
	(0.0800)	(0.0806)	(0.0802)	(0.0860)	(0.101)	(0.0838)
mid_onset_binary	2.905***	2.741***	2.689***	4.222***	4.695***	2.684***
	(0.832)	(0.821)	(0.787)	(1.494)	(1.919)	(0.783)
rel_milcapab_2						1.004**
						(0.00181)
mid_onset*rel_milcapab				0.759**		
				(0.0989)		
rel_milcapab_growth	0.697***	0.698**	0.699**	0.657**	0.708**	0.735***
	(0.0929)	(0.102)	(0.100)	(0.127)	(0.112)	(0.0858)
MID involvement	0.459**	0.486	0.485	0.430**	0.683	0.481
	(0.170)	(0.183)	(0.182)	(0.162)	(0.375)	(0.180)
midnb	0.828	0.838	0.842	0.894	0.826	0.847
	(0.126)	(0.125)	(0.125)	(0.141)	(0.131)	(0.124)
tmidtocoup	1.368***	1.429***	1.422***	1.428***	3.701***	1.422***
	(0.159)	(0.185)	(0.182)	(0.182)	(1.395)	(0.182)
cw	1.036	0.941	0.966	1.035	1.591	0.963
	(0.427)	(0.341)	(0.351)	(0.377)	(0.813)	(0.350)
war	3.523**	3.516**	3.471**	3.809**	3.646**	3.460**
	(2.222)	(2.229)	(2.203)	(2.515)	(2.109)	(2.189)
spatial	2.457**	3.271***	3.225***	3.339***	0.877	3.235***
	(0.932)	(1.339)	(1.302)	(1.342)	(0.690)	(1.309)
positional	1.400	1.420	1.391	1.298	1.491	1.403
	(0.715)	(0.698)	(0.674)	(0.617)	(0.902)	(0.678)
ideol	1.066	1.191	1.190	1.142	1.093	1.180
	(0.627)	(0.688)	(0.678)	(0.669)	(0.793)	(0.667)
interv	0.494	0.473	0.478	0.471	0.580	0.475
	(0.205)	(0.207)	(0.212)	(0.211)	(0.457)	(0.211)
lmilper	1.464**	1.630**	1.636**	1.552**	1.594	1.710**
	(0.277)	(0.350)	(0.357)	(0.329)	(0.542)	(0.381)
chmilex	1.000	1.000	1.000	1.000	0.999	1.000
	(0.00104)	(0.000897)	(0.000917)	(0.000950)	(0.000756)	(0.000911)
chgdp	0.203	0.218	0.228	0.227	3.031	0.228
	(0.282)	(0.339)	(0.359)	(0.361)	(5.663)	(0.360)
lgdppcl	0.460**	0.470**	0.465**	0.464**	1.026	0.466**
	(0.141)	(0.153)	(0.152)	(0.152)	(0.362)	(0.152)
coupproof	0.872	0.969	0.952	0.955	0.864	0.945
	(0.265)	(0.299)	(0.293)	(0.295)	(0.395)	(0.293)
instab2	1.366***	1.349***	1.348***	1.331***	1.348***	1.348***
	(0.119)	(0.119)	(0.120)	(0.118)	(0.101)	(0.120)
milregime		1.775	1.777	1.880	1.808	1.781
		(0.612)	(0.609)	(0.652)	(1.033)	(0.613)
conscript		0.416	0.415	0.424	0.293**	0.415
		(0.217)	(0.215)	(0.217)	(0.161)	(0.215)
alliance			1.258	1.229	0.874	1.256
			(0.541)	(0.522)	(0.756)	(0.544)
tlastcoup	1.019	1.023	1.022	1.023	1.011	1.023
	(0.0174)	(0.0192)	(0.0190)	(0.0191)	(0.0265)	(0.0191)
Constant	1.289	0.555	0.547	0.528	0.00100**	0.492
	(2.495)	(1.197)	(1.161)	(1.132)	(0.00316)	(1.049)
Observations	3,855	3,797	3,784	3,784	1,690	3,784
Number of ccode	166	166	165	165	89	165
chi2	175.1	185.2	198.4	203.1	117.7	200.2

Robust seeform in parentheses, cubic splines unreported
*** p<0.01, ** p<0.05, * p<0.01

In Figure 4A, I present the predicted probability of relative mil. capability growth on the likelihood of a coup attempt, using the full results from Model 6. I used the 'univar' command to determine the minimum and maximum growth, which is why the X-axis begins at -30 and ends at +10. The results conform strongly to the theory. When the change in capability decreases, the probability of a coup is much more likely. An increase in the growth of capability substantially reduces the likelihood of an attempt. It

Figure 4A (APPENDIX). Predicted probability of Ch. Rel. Power's effect on a coup attempt
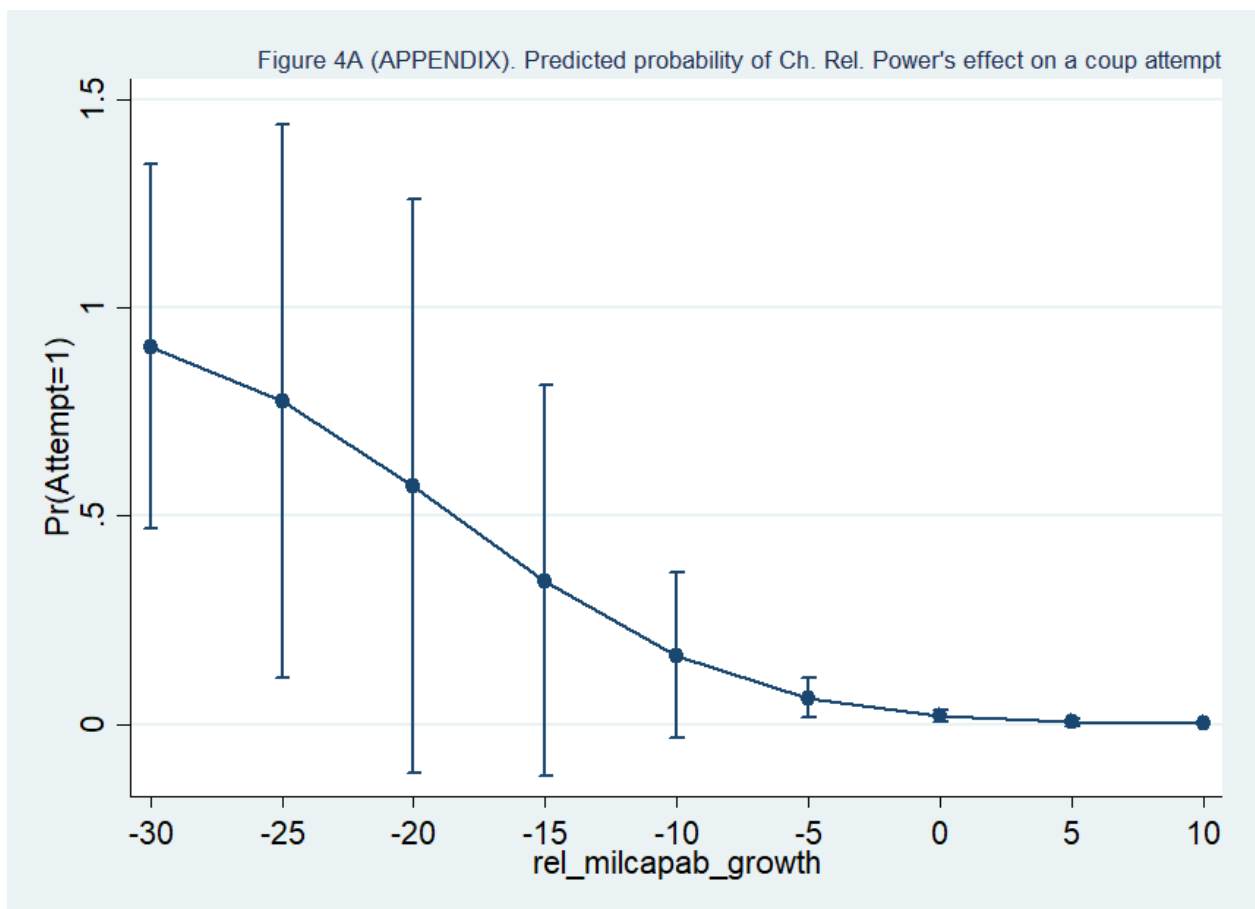
is worth pointing out that the confidence intervals of the large decreases in change wider than the increases, but we nevertheless have a clear downward trend as the confidence intervals shrink as we observe growth.

3b. Substitution of RMC w/CINC score

While our definition of relative military capability allows us to focus on the military dimensions of power, one might put forth that a definition of relative power is better conceptualized that includes the overall material capability of a country,

including the latent power necessary to fuel military capability. One of the most common indicators is the Composite Index of National Capability (CINC) score generated by the Correlates of War Project's National Material Capabilities Index (NMCI). Thus, it's a good idea to substitute this variable and assess whether a more inclusive conception of military capability produces different results.

Table 5B shows the results. The results for the most part, are substantively similar. CINC is negative and statistically significant. In Model 4, the interaction term remains significant. In Model 5, the CINC coefficient has a significance of $p = .059$, very close to traditional significance levels. If there is any difference in the results, it is in Model 6. While the coefficient is $p = .120$, it is nevertheless insignificant. Moreover, the squared term is also insignificant. We can therefore say that there is likely not a curvilinear relationship between these two phenomena. Note that if we remove the squared term that CINC becomes significant (i.e. the equation is the same as Model 3).

With respect to other covariates in the model, there is one major change. First, in the original model, ongoing interstate war is statistically significant. With the CINC variable, it loses significance in most of the models with the exception of Model 4. Given the importance of latent power in supplying of war effort, this result suggests that a more comprehensive consideration of relative power wipes out the effect of interstate war. This result perhaps speaks to a literature on economic growth and war. However, I would not like to speculate too strongly on the possibilities but rather suggest a potential avenue of study. All other covariates in the model remain mostly similar to the original results.

Table 5B. Substitute CINC as IV of Interest

VARIABLES	attempt	attempt	attempt	attempt	attempt	attempt
CINC	-235.3***	-285.3***	-285.8***	-157.5**	-172.4*	-288.3
	(87.99)	(99.47)	(100.4)	(73.67)	(91.30)	(185.3)
CINC (squared)						171.2
						(10,527)
mid_onset_binary	1.075***	1.022***	0.997***	1.773***	1.547***	0.997***

	(0.293)	(0.307)	(0.301)	(0.414)	(0.404)	(0.302)
Mid_onset_binary*CINC				-277.8***		
				(87.57)		
MID involvement	-0.876**	-0.820**	-0.820**	-0.934**	-0.502	-0.820**
	(0.364)	(0.369)	(0.368)	(0.379)	(0.561)	(0.368)
midnb	-0.124	-0.112	-0.108	-0.0516	-0.106	-0.108
	(0.129)	(0.123)	(0.123)	(0.125)	(0.121)	(0.123)
tmidtocoup	0.321***	0.367***	0.360***	0.369***	1.337***	0.360***
	(0.122)	(0.135)	(0.134)	(0.131)	(0.387)	(0.134)
cw	0.0515	-0.0413	-0.0112	0.0367	0.490	-0.0113
	(0.409)	(0.356)	(0.356)	(0.350)	(0.525)	(0.357)
war	1.113	1.093	1.080	1.245**	1.078	1.080
	(0.571)	(0.580)	(0.581)	(0.627)	(0.570)	(0.579)
spatial	0.834**	1.141***	1.124***	1.186***	-0.228	1.124***
	(0.387)	(0.406)	(0.400)	(0.405)	(0.801)	(0.400)
positional	0.294	0.346	0.316	0.240	0.349	0.317
	(0.545)	(0.510)	(0.501)	(0.493)	(0.617)	(0.498)
ideol	0.145	0.257	0.254	0.201	0.0846	0.254
	(0.640)	(0.614)	(0.603)	(0.629)	(0.746)	(0.603)
interv	-0.804	-0.847	-0.834	-0.880	-0.703	-0.834
	(0.431)	(0.447)	(0.455)	(0.460)	(0.825)	(0.455)
lmilper	0.378	0.527**	0.537**	0.502**	0.555	0.538**
	(0.195)	(0.228)	(0.234)	(0.210)	(0.338)	(0.245)
chmilex	-0.000479	-0.000364	-0.000307	-0.000350	-0.000553	-0.000307
	(0.00111)	(0.000943)	(0.000959)	(0.000974)	(0.000754)	(0.000958)
chgdp	-1.521	-1.420	-1.367	-1.420	1.262	-1.367
	(1.397)	(1.561)	(1.585)	(1.564)	(1.837)	(1.586)
lgdppcl	-0.747**	-0.711**	-0.718**	-0.732**	0.0654	-0.718**
	(0.316)	(0.336)	(0.332)	(0.331)	(0.360)	(0.333)
coupproof	-0.104	0.00984	-0.0107	-0.0167	-0.186	-0.0106
	(0.306)	(0.312)	(0.310)	(0.316)	(0.470)	(0.309)
instab2	0.330***	0.319***	0.317***	0.318***	0.320***	0.317***
	(0.0868)	(0.0885)	(0.0890)	(0.0884)	(0.0721)	(0.0894)
milregime		0.605	0.608	0.712**	0.681	0.608
		(0.344)	(0.343)	(0.343)	(0.612)	(0.342)
conscript		-0.991	-0.995	-0.959	-1.378**	-0.995
		(0.538)	(0.535)	(0.520)	(0.568)	(0.536)
alliance			0.287	0.263	-0.0810	0.287
			(0.427)	(0.417)	(0.881)	(0.428)
tlastcoup	0.00978	0.0124	0.0113	0.0135	-0.00107	0.0113
	(0.0174)	(0.0191)	(0.0188)	(0.0188)	(0.0282)	(0.0188)
Constant	0.0596	-0.960	-1.025	-1.175	-7.310**	-1.027
	(2.002)	(2.250)	(2.215)	(2.282)	(3.236)	(2.237)
Observations	3,855	3,797	3,784	3,784	1,690	3,784
Number of ccode	166	166	165	165	89	165
chi2	152.0	170.6	178.9	173.9	101.8	192.7

Robust standard errors in parentheses, cubic splines unreported
*** p<0.01, ** p<0.05, * p<0.10

Next, because the interaction term in Model 4 is significant, I re-run the plots of Figure

3 and present them in Figure 3A. The results largely confirm to what we find with

relative military capability. On the left, very low CINC increase the likelihood of an

attempt while at higher values the effect becomes indistinguishable because the

confidence interval overlaps with zero. On the right plot, the effect of CINC is

consistently below zero and the confidence intervals are quite large. We can say with

confidence that CINC reduces the likelihood of a coup attempt, but the marginal effects

Fig 3A. Marginal Effects of CINC*MID onset (APPENDIX)
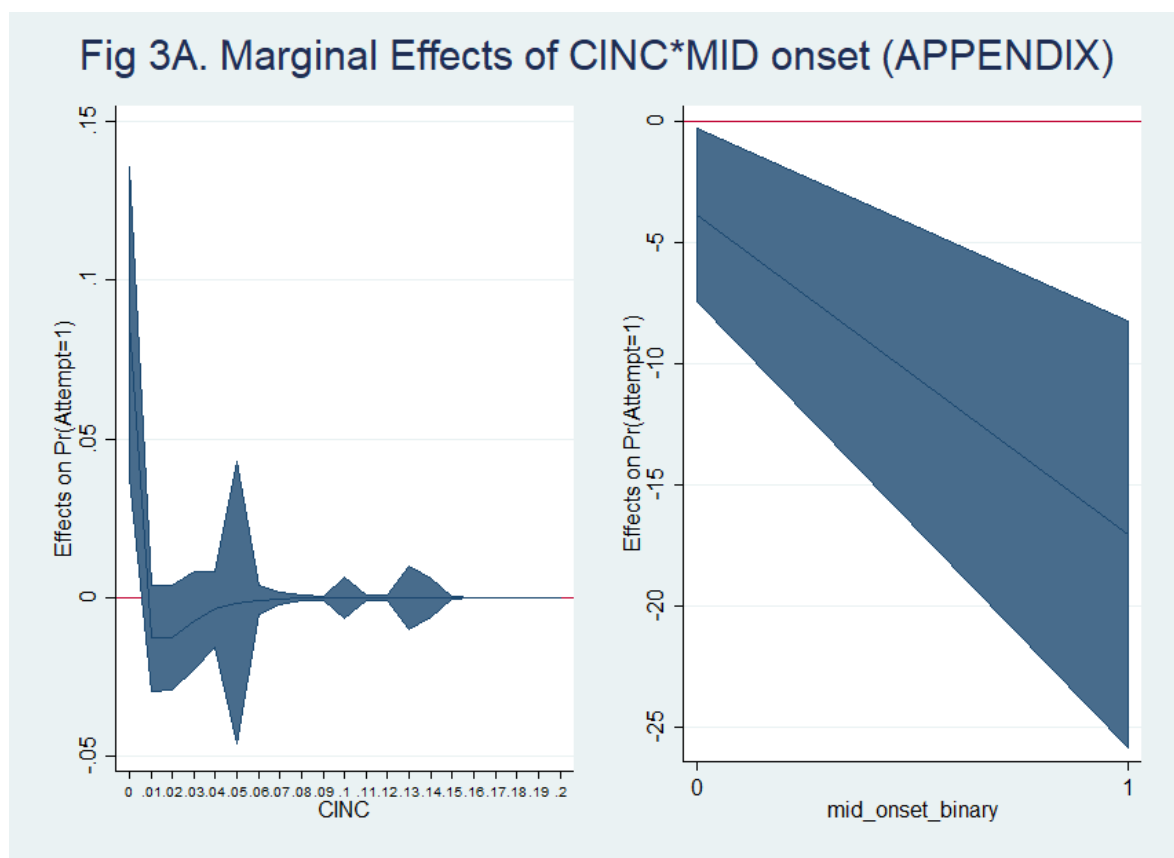
of MID onset are indeterminate.

4. Alternative interaction terms w/Rel. Mil. Capability

In this subsection, I report the results of some interaction terms tested with

relative military capability. I based by testing on geopolitical covariates that seem of

interest, e.g. presence of an ongoing MID or war, respectively, spatial rivalry, and

domestic instability. I include the full model of control variables (i.e. Model 3) so that

all possible covariances are included. Table 5C reports these results.

The only interaction term that is significant is the interaction with an ongoing

MID prior to the coup, but the respective covariates are not, already casting doubt on

the significance of the equation. All other interaction terms are insignificant.

Additionally, in the other equations, the relative military capability term remains

significant.

Table 5C. Testing other interaction terms with full covariate list

VARIABLES	attempt	attempt	attempt	attempt
rel_milcapab	-0.151	-0.448***	-0.441**	-0.368***
	(0.104)	(0.113)	(0.181)	(0.126)
MID involvement	-0.462	-0.754**	-0.830**	-0.824**
	(0.406)	(0.358)	(0.366)	(0.363)
MID involvement*rel_milcapab	-0.316***			
	(0.121)			
War*rel_milcapab		0.199		
		(0.176)		
Spatial*rel_milcapab			0.0979	
			(0.187)	
Instability*rel_milcapab				0.00676
				(0.0242)
war	1.289**	0.534	1.175**	1.185**
	(0.600)	(0.763)	(0.582)	(0.595)
spatial	1.211***	1.158***	1.063**	1.169***
	(0.407)	(0.407)	(0.479)	(0.405)
instab2	0.272***	0.294***	0.293***	0.279***
	(0.0860)	(0.0890)	(0.0877)	(0.104)
mid_onset_binary	0.954***	0.903***	0.949***	0.944***
	(0.291)	(0.283)	(0.292)	(0.291)
midnb	0.000320	-0.0922	-0.0733	-0.0721
	(0.131)	(0.130)	(0.128)	(0.125)
tmidtocoup	0.368***	0.358***	0.358***	0.359***
	(0.132)	(0.129)	(0.131)	(0.131)
cw	0.0809	0.0120	0.000774	0.00776
	(0.363)	(0.360)	(0.363)	(0.365)
positional	0.186	0.339	0.258	0.272
	(0.478)	(0.501)	(0.494)	(0.486)
ideol	0.174	0.192	0.215	0.202
	(0.592)	(0.576)	(0.579)	(0.577)
interv	-0.781	-0.795	-0.742	-0.772
	(0.451)	(0.441)	(0.444)	(0.449)
lmilper	0.494**	0.609***	0.567**	0.554**
	(0.232)	(0.217)	(0.231)	(0.239)
chmilex	-0.000201	-0.000290	-0.000227	-0.000217
	(0.000997)	(0.000948)	(0.000939)	(0.000941)
chgdp	-1.516	-1.320	-1.443	-1.472
	(1.573)	(1.559)	(1.565)	(1.558)
lgdppcl	-0.832**	-0.791**	-0.785**	-0.797**
	(0.350)	(0.337)	(0.344)	(0.340)
coupproof	-0.0829	-0.0929	-0.0779	-0.0775

	(0.326)	(0.323)	(0.322)	(0.318)
milregime	0.670	0.578	0.581	0.585
	(0.350)	(0.348)	(0.351)	(0.351)
conscript	-0.891	-0.879	-0.892	-0.900
	(0.515)	(0.523)	(0.523)	(0.524)
alliance	0.209	0.246	0.235	0.240
	(0.434)	(0.438)	(0.442)	(0.437)
tlastcoup	0.0248	0.0241	0.0218	0.0229
	(0.0192)	(0.0195)	(0.0192)	(0.0188)
Constant	-0.422	-0.708	-0.647	-0.582
	(2.213)	(2.165)	(2.177)	(2.163)
Observations	3,784	3,784	3,784	3,784
Number of ccode	165	165	165	165
chi2	207.3	202.4	207.0	206.7

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.01

Despite the above-mentioned reservations regarding the Ongoing MID interaction, because it is significant I plot the marginal effects in Figure 3B. In both cases the effect is indeterminate. In the left-most plot, the confidence interval consistently crosses zero. Therefore, we cannot tell if the effect is positive or negative. On the right-most plot, the confidence interval is so large that we cannot determine a trend regarding the effect. We can be mostly certain that relative military capability always has an effect of reducing the likelihood of a coup attempt because the confidence interval only briefly crosses zero, but we can say little else. Therefore, despite the fact that the interaction term is itself significant, it does little to tell us about the marginal effects and thus does not contribute much to our explanation.

Figure 3B. Interaction between Rel. Mil. Cap.*Ongoing MID
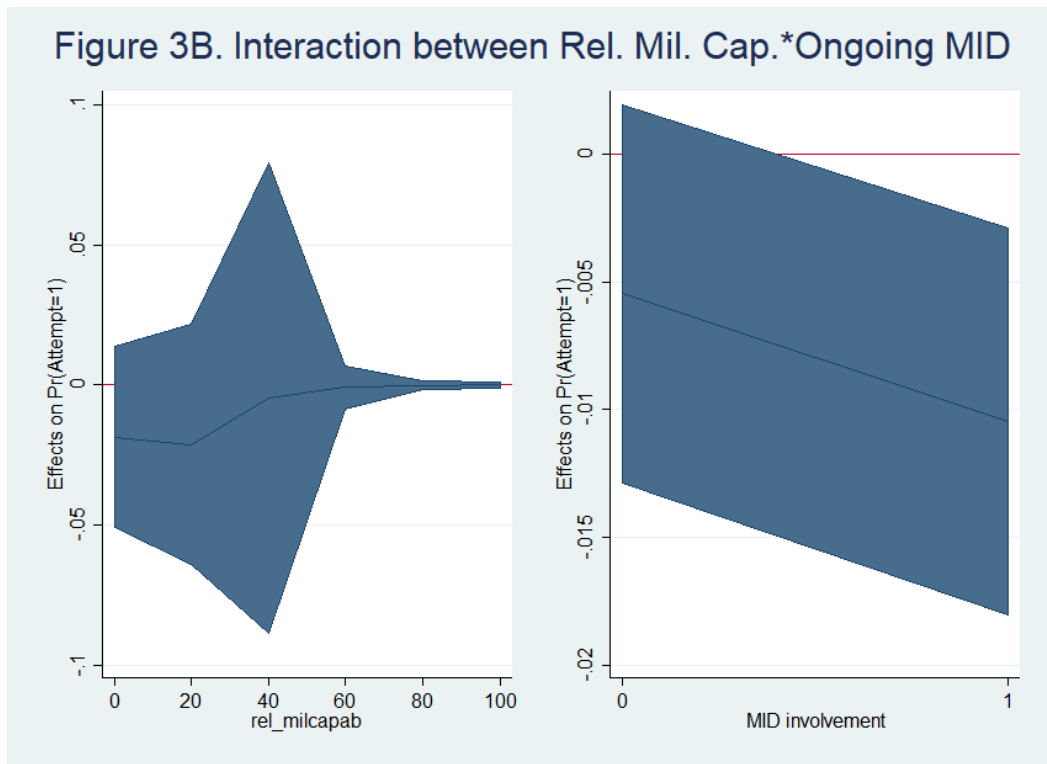
5. Associations w/coup-proofing

5a. Cross-tabulations

In the discussion regarding coup-proofing, I mentioned that the theory suggests that weaker states should be disincentivized from coup-proofing. Because of the link between the security dilemma and guardianship dilemma, weaker states that coup-proof should be punished by coup attempts by the armed forces because coup-proofing damages military effectiveness and thus puts the armed forces, as well as the state, at risk versus possible rivals.

If weaker states do in fact coup-proof significantly, then one might argue that the security dilemma does not punish this behavior. Because of this, I examine the extent of coup-proofing among states with below median and bottom 25% military capability with respect to being below median in coup-proofing. In the paper, I reported respective odds ratios of 1.58 and 2.61, meaning that being below the median with respect to relative military capability makes it 1.58 times more likely that one will also be below the median in coup-proofing and countries in the lowest quantile of capability are 2.61 times likelier than countries outside of the bottom 25%.

As I mentioned in the paper, while this table does not tell us whether the security dilemma is doing the work (I suppose that is what the rest of the paper is for), it does tell us that states by and large are not violating the logic suggested by this tale of two dilemmas. Having less capability has a positive association with low coup-proofing.

Below I present the cross tabulations that provide the above odds ratios:

Table 7a. Cross-tabulation of Relative Military Capability and Below Med. Coup-proofing

Below Med. Capab.	Below Med. Coup-proofing		
	No	Yes	Totals
No	1,679	1,379	3,058
Yes	932	1,124	2,146
Totals	2,611	2,593	5,204
Pearson's chi-squared(1): 66.4264, p <.000			

Table 7b. Cross-tabulation of Relative Military Capability and Below Med. Coup-proofing

Bottom 25% Med. Capab.	Below Med. Coup-proofing		
	No	Yes	Totals
No	2,387	2,082	4,469
Yes	224	511	735
Totals	2,611	2,593	5,204
Pearson's chi-squared(1): 132.8216, p < .000			

5b. Mann Whitney U Tests

Because the coup-proofing variable is not strictly a categorical variable, I use Mann Whitney U tests as robustness checks of the above tables.

Table 7c. Two-sample Wilcoxon rank-sum (Mann-Whitney) test

```
below_med_~b     obs    rank sum    expected

0    3058   8757844.5   7958445
1    2146   4785565.5   5584965

combined    5204    13543410    13543410

unadjusted variance   2.846e+09
adjustment for ties   -55426222

adjusted variance    2.791e+09
```

Ho: couppr~f(below_..==0) = couppr~f(below_..==1)
z = 15.131
Prob > z = 0.0000

Table 7d. Two-sample Wilcoxon rank-sum (Mann-Whitney) test

```
 lq_milcapab |    obs   rank sum    expected
-------------+-------------------------------
```

```
    0 |    4469   12313517   11630573
    1 |     735   1229893.5  1912837.5
-------------+--------------------------------
 combined |    5204   13543410   13543410
```

unadjusted variance   1.425e+09
adjustment for ties   -27742511
              ----
adjusted variance   1.397e+09

Ho: couppr~f(lq_mil~b==0) = couppr~f(lq_mil~b==1)
        z = 18.272
   Prob > |z| =   0.0000

As we can see in both cases, the expected rank sum under the hypothesis of statistical

independence is much higher than we actually observe in the data. This finding satisfies

our robustness check that it is not the categorization of the coup-proofing variable by

the median value that is producing the work here. Observations with low military

capability tend to have lower coup-proofing scores and the association is strongly

significant.

6. A Game Theoretic Conceptualization of the Theory

While the microeconomic framework provides a useful and accurate model of the

theory, we can also conceptualize the theory with respect to the *strategic* interaction

between the government and the armed forces in the context of the security dilemma.

Game #1: Stronger Relative Power

Consider Country Blue in the first case where the country is in a position of strength.

This game has two players: Government, G, and Military, M[9]. Each make a single

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[9] Following the decision of fair coin, G will take the pronoun "he", while M will take the

   pronoun "she". Done as a matter of convenience.

decision: G decides whether to strengthen or weaken the military while M decides whether to launch a coup. In this incarnation of the game we assume that if G decides to weaken the military, it will not result in losing a possible military conflict with Country Black due to higher relative power.

Table 8 ranks the player's preferences. Knowing that a coup is not forthcoming, G would simply increase the strength of the military. However, with the prospect of a coup and because G is in a position of strength, he can afford to weaken his military to prevent a coup. The worst possible outcome would be to increase the strength of the military knowing that a coup is forthcoming, particularly when G is already in a position of strength.

Above all else, M simply prefers strength to weakness. Because Country Blue is in a position of strength regarding its threat environment, M would rather be strong and not attempt a coup because the status quo is favorable. Furthermore, as we know that the military being weakened will not result in defeat against a threat, and a coup could possibly send a country into an internal struggle (see Singh 2014), if G decides to weaken her capabilities, M will prefer to acquiesce to weakness and not initiating a coup over attempting a coup with weakened capabilities.

Table 8. Ordinal Utility when a threat is present and Country Blue is in a position of strength			
Government's Preferences		Military's Preferences	
X1	strong, ~coup	Y1	strong, ~coup
X2	weak, coup	Y2	strong, coup
X3	weak ~coup	Y3	weak, ~coup
X4	strong, coup	Y4	weak, coup

The below normal form game depicted in Figure 2 represents the evaluation of ordinal utilities. Underlined values indicate each player's choice in accordance with the above table. The cell with the asterisks indicates a pure strategy Nash Equilibrium, which represents a rationale outcome of the game, given the player's preferences. In this case we have only one Nash Equilibrium of (strong, ~coup). Thus, when Blue is in a

position of strength, we expect to see G increase its capability and we do not expect M

to initiate a coup. Also note that in this game both players receive their first choice, i.e.

G receives X1 and M receives Y1. This equilibrium is rational and without controversy.

Now let us turn to the weaker power in this relationship.

Figure 6. Country Blue is in a superior position		
G, M	coup	~coup
strong	X4 , Y2	<u>X1</u>* , <u>Y1</u>*
weak	<u>X2</u> , Y4	X3 , <u>Y3</u>

Game #2: Weaker Relative Power

Consider the case of Country Black, the rival of Blue. Here is the situation:

Black is the weaker power vis-à-vis its rival. In this game, we will make three

assumptions. First, we assume that being in the weakened position will ensure that

Black incurs losses, e.g. losing a war, conceding a piece of territory, the abolition of

sovereignty, et cetera. Second, the continued security tension combined with Black's

enduring history of losses has undermined M's confidence in the civilian regime, G.

Third, G considers the external threat even more dangerous than the coup from M[10].

I demonstrate the ordinal ranking of preferences in Table 9. G would of course

strengthen the military if a coup were not coming and would least prefer not to

unnecessarily weaken the military if a coup is not possible. The salient question for G is

whether he fears the external threat more than the military. Assuming G is more afraid

of the external threat, then it is preferable to increase the strength of the military and

---

[10] In the Appendix we reverse this assumption. The game in the Appendix produces a Nash

Equilibrium of (weak, coup). The purpose of this third game's inclusion in the appendix is to

show that, despite the third assumption, we should still observe an association between

coups and weak relative power because M cannot trust G in her quest for security.

risk a coup versus weakening the military, losing in the rivalry, and still possibly

dealing with a coup. M, knowing that she must defend the country against the external

threat, will prefer strength in all cases. If M is weakened, she will prefer to initiate a

coup over not doing so in order to displace the leader.

[Insert Table 9 about here]

Moving to Figure 7, we see that the Nash Equilibrium shifts from the (strong,

~coup) cell to the (strong, coup) cell. G cannot afford to weaken the military due to the

presence of an external threat, thereby acquiescing to the possibility of a coup out of

fear from the security environment. M shares this fear of the threat environment but

cannot trust G to ensure the safety of the country. Therefore, the two players will end up

in a scenario where both of their efforts to seek security result in a coup attempt. This

circumstance demonstrates the importance of the relative power context in which a state

is situated.

Figure 7. Country Black is in a weaker position, threat > M		
G, M	coup	~coup
strong	X2*, Y1*	X1 , Y2
weak	X4 , Y3	X3 , Y4

The formalization of this model demonstrates that the integration of the security and

guardianship dilemmas can set leaders on a path that risks coups. Even if leaders had

the ability to coup-proof with perfect accuracy, geopolitical considerations force states

to make decisions that run the risk of embattling leaders. Stronger states, of course, have

more leeway. However, this possibility depends on the coup threshold discussed in

Figure 1. The greater the intensity of the security dilemma, conceptualized primarily by

inclusion into interstate rivalries or the endurance and frequency of MIDs, relative

power differentials will become more salient. Thus, coup attempts may still occur at

times even among stronger powers in a dyad. However, when we investigate the dyadic

rivalries, we should see by comparison that the weaker states tend to have more coup

attempts than their stronger counterparts.

We can adjust some of the assumptions. Consider Game #1 with its rules that:

(1) Being in the weakened position will ensure that Black incurs losses, e.g. losing a

war, conceding a piece of territory, the abolition of sovereignty, et cetera; (2) the

continued security tension combined with Black's enduring history of losses has

undermined M's confidence in the civilian regime, G, and; (3) G considers the external

threat even more dangerous than the coup from M.

We can modify Assumption (3) to (3a): G considers the coup from M even more

dangerous than the external threat. The Ordinal Utility will change for the G because

now he would prefer to remained in a weakened state and not have a coup attempted, as

we can see in Table 8A.

Table 8A. Ordinal Utility when a threat is present , Country Black is in a position of weakness, G fears threat > M			
Government's Preferences		Military's Preferences	
X1	strong, ~coup	Y1	strong, coup
X2	weak, ~coup	Y2	strong, ~coup
X3	strong, coup	Y3	weak, coup
X4	weak, coup	Y4	weak, ~coup

However, the Nash Equilibrium of the model will not change because for this decision,

G's only alternative is the least preferable option, to be both weak and receive a coup.

Therefore, G's decision does not change. In Figure 3 presented in the paper, G at least

receives X2 while in Figure 3A, see below, G receives X3. So, comparatively, G

receives a more preferable outcome when it evaluates the external threat higher than a

coup. We might also consider that in this game the preferences of the armed forces, M,

are playing more of a decisive role. Such an assumption is not mere artifice of the game

given the fact that leaders need the armed forces for survival. One might argue whether

the reverse holds true. Finer (1962) gives two main reasons, lack of technocratic

capacity and poor legitimacy, as to why military regimes may not succeed. Whether

he's right is, for the moment at least, the subject of another paper.

Figure 3A. Country Black is in a weaker position, threat > M		
G, M	coup	~coup
strong	X3*, Y1*	X1 , Y2
weak	X4 , Y3	X2 , Y4