Introducing the Leadership Security Ties Data Base

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June 7, 2015

Abstract

This paper introduces a new data set from the *Leadership Security Ties* project. This data set compiles information from historical case studies, news reports, and primary sources into a comprehensive list of the operationally independent military and security organizations in all dictatorships in the world from 1990-2012. The data contain a list of the leaders of these organizations and codes whether these organization leaders have a personal family or politically-relevant ethnic connection to the regime leader. This paper describes the conceptual foundations of a personalist security apparatus in dictatorships, discusses the operationalization of this concept in the coding rules, and describes the data collection process. We then introduce two variables constructed from the raw data – *personalist security apparatus* and *security leadership turnover* – and show how these variables differ from existing data. Finally, we propose two research designs that employ each of these variables in an applied setting.

*This research is funded by the Minerva Research Initiative (ONR #N000141211004). The authors thank Molly Ariotti, Emma Leonard Boyle, Dellea Copeland, Mitch Goist, Sarah Hayden, Ernesta Janulionyte, and Wonjun Song for research assistance. Abel Escribà-Folch helped to write the code book and formulate ideas for this project. We stress that data collection is still in progress and all reported results should be interpreted with appropriate caution.

The Arab Spring uprisings in 2010 and 2011 brought renewed attention to how repressive forces in dictatorships respond to anti-regime protests. Within the space of roughly six months, 14 autocratic regimes in the Middle East and North Africa[1] faced mass non-violent protests demanding regime change. Yet nearly five years later, incumbent dictators have fallen in only four countries: Egypt, Libya, Tunisia, and Yemen. Among these cases, however, Tunisia stands out as the only relatively stable, democratically elected government still in power. In Yemen, the new President – who was the deposed ruler's vice-president – was selected in an uncontested election; Egypt's first freely elected President was ousted in a military coup; and Libya's post-transition government has yet to gain control over the militias that ousted former President Muammar Gaddafi. And while in some countries, such as Morocco, incumbent rulers placated protesters with cosmetic political reforms, the incumbents have remained firmly entrenched in the majority of Arab autocracies.

The mixed results of the Arab Spring uprisings can be explained, in part, by the behavior of these regimes' military and security forces. In dictatorships where the regime had a more patrimonial coercive apparatus – such that the regime leader was closely tied to senior military and security officers through family or ethnic connections – these forces were more likely to use repression against protesters (Barany, 2011; Bellin, 2004). In contrast, in autocratic regimes where the military and security leaders had fewer ethnic or family ties to the dictator, the coercive organizations were less likely to employ mass violence.

The dictatorships caught up in the Arab Spring uprisings have not been the only ones to face mass anti-regime protests in the post-Cold War era. Anti-regime demonstrations in Indonesia in 1998, for example, forced the military to demand President Soeharto's resignation. The Colored Revolutions in post-Communist Eurasia all featured mass anti-regime mobilization. Other protest campaigns, however, largely failed. The Iranian Green Movement, for example, fell short of unseating Iranian President Ahmadinejad after fraudulent elections in 2009; and anti-regime demonstrations in Myanmar (Burma) in 2007 were crushed by the military.

This paper introduces a new data set that will help researchers understand why some dictatorships are more likely to respond to anti-regime mobilization with state-led violence than others. Central to answering this question is measuring the structure of military and security organizations in dictatorships, in particular the extent to which the leaders of these organizations have familial or politically-relevant ethnic ties to the regime leader. When the leadership of the coercive apparatus

[1] Of the 16 Arab autocracies in the *Economist*'s "Shoe-Throwers" index, only Qatar and the United Arab Emirates were spared mass protests demanding regime change (Yom and Gause III, 2012, 73).

is more closely tied to the regime leader, it should be more likely to respond to regime crises with violence.

The original data compile information from historical case studies, news reports, policy briefs, historical dictionaries, regional encyclopedias, and primary sources into a comprehensive list of the operationally independent military and security organizations in all dictatorships in the world from 1990-2012. The data entail a list of military and security organizations as well as the names of the leaders of these organizations; and codes whether these organization leaders have a personal family or politically-relevant ethnic connection to the regime leader.

Why dictators personalize the security apparatus

Dictators require the support of a subset of individuals in society to retain power, often called the support or winning coalition (Bueno de Mesquita, Smith, Siverson and Morrow, 2003). In personalized autocracies, where the leader typically controls political recruitment and personnel appointments, family links and ethnic ties are two common features used for recruitment into the support coalition and for appointment to key executive positions, including within the military (Geddes, 1999). For high office holders in the government and military who are also family members or (politically relevant) co-ethnics of the autocratic leader, retaining power is often dependent on a specific autocratic ruler remaining in office.

Dictators use a mix of co-optation and repression to remain in power (Wintrobe, 1998; Haber, 2006). While political institutions such as support parties and legislatures facilitate co-optation, demonstrate strength, and deter military coups (Geddes, 2003, 2008; Magaloni, 2006; Gandhi, 2008), repression requires organizations that threaten and employ violence against citizens (Davenport, 2007). In some circumstances repressive organizations aid autocratic survival, but they may at times simultaneously threaten the autocratic leader (Svolik, 2012), particularly if they initially helped facilitate his rise to power (Haber, 2006). In addition to creating multiple, potentially countervailing, security organizations (Quinlivan, 1999; Haber, 2006), autocratic leaders therefore also attempt to assert control over repressive organizations, including the military, by establishing close personal ties between the regime leader and high-ranking officials in these organizations (Enloe, 1980; Horowitz, 1985; Geddes, 1999).

Concept

Building on classic definitions of personalism and patrimonialism in comparative politics, we define *personalized military and security organizations* as those where the autocratic leader has successfully transformed existing organizations or created new ones under his individual control, in the process destroying the institutional autonomy of these groups to act collectively apart from the regime leader(s) (Weber, 1964; Huntington, 1991; Bratton and van de Walle, 1994; Chehabi and Linz, 1998; Geddes, 1999). Snyder (1992, 381), for example, defines institutional autonomy of the military as "the ability of officers to predict their career paths and to communicate discontent with one another, the degree to which the officer corps is divided along ethnic or regional lines, and the dictator's capacity to purge elements of the armed forces whose loyalty he questions."

The concept of a *personalized military* shaped by familial and ethnic ties to the leader is not the same as an unprofessional military or a politicized military that lacks of civilian control and continually interferes in politics, as suggested by Huntington (1957). Rather, personalized military and security organizations stand at one end of a spectrum that measures the extent to which the security apparatus is "rule-governed, predictable, and meritocratic" or whether it is "organized along patrimonial lines [where] staffing decisions are ruled by cronyism" and loyalty is built "through selective favoritism and discretionary patronage" (Bellin, 2004, 145).

In the study of civil-military relations across a range of geographic regions, military institutionalization – as distinct from civilian control – also entails the development of a 'corporate identity' that separates the military as an institution from the patrimonial politics of a particular leader.[2]

Autocratic regimes vary systematically in the extent to which the elites – both military personnel and party officials – rely upon the leader to retain their position (Huntington, 1991; Bratton and van de Walle, 1994; Geddes, 1999, 2003). Huntington (1991, 581), for example, notes that "'[t]he distinguishing characteristic of a personal dictatorship is that the individual leader is the source of authority and that power depends on access to, closeness to, dependence on, and support from the leader." Geddes (2003, 72) categorizes an autocratic regime as personalist if "the leader... had consolidated control over policy and recruitment into his own hands, in the process marginalizing other officers' influence and/or reducing the influence and functions of the party."

[2]See Finer (1962) and Thompson (1980) for general discussions of military corporate identity, as well as Nordlinger (1977) on Latin American militaries, Kamrava (2000) on Middle Eastern militaries, Luckham (1994) on African militaries, and Barany (1997) on militaries in Europe under Communist rule. Barany (2011) and Bellin (2012) discuss the role of the corporate identity of the military in Middle Eastern and North African uprisings in 2011.

An indicator for personalist dictatorship,[3] however, is only a rough proxy for the concept of a patrimonial military because this variable also incorporates information about the relationship between an autocratic leader and his support party. For example, questions used to code *personalist dictatorship* address: Whether the support party was created before or after the current leader took power; Whether the legislature acts a rubber stamp; and Whether the support party is geographically limited to urban areas.

The relationship between the military and the regime leader can also vary over time, which may not be captured in a categorical indicator of autocratic regime type. In Egypt, for example, all post-revolution (1952) leaders – except Mohamed Morsi – have come from the military; and though the active participation of the military in political decision-making has varied considerably across five decades,[4] the military had firmly entrenched itself with a permanent economic role and close social connections to the regime elite under Mubarak (Harb, 2003, 285) and now General el-Sisi. Similarly, in Syria the extent to which the military and Ba'th party helped shape policy and personnel decisions changed over time. Hafez Asad successfully subordinated the military under his control by transforming it from a Ba'thist institution into an ethnic Alawi institution. However, even during this transformation, "Asad took care to integrate senior army officers into the Ba'th Party institutions because he was aware of the important role these institutions played as a meeting point between members from different apparatuses on which Asad based his regime" (Zisser, 2001, 5). Thus these two autocratic regimes are coded similarly as "triple-hybrid" regimes in the Geddes' data because they do not clearly fall into one particular category of autocratic regime. Despite the categorical similarity in regime type, the militaries in Egypt and Syria are quite different, particularly in the extent to which high-ranking military officers and heads of the security organizations have familial and ethnic ties to the autocratic leader.

We can further contrast the Syrian military under the rule of Hafez al-Asad and his son, Bashar, with Indonesia's security forces under Soeharto. In the former, the heads of the military and key security organizations were blood relatives of the man in power, while in the latter they were *not*. In Syria, for example, the current president's younger brother, Maher al-Asad, oversees the

[3]See, for example, Geddes (1999, 2003); Weeks (2008, 2012); and Geddes, Wright and Frantz (2014).

[4]See Harb (2003, 270), who notes that: "When the regime was a ruler regime between 1952 and 1970, the military was prominent in state institutions and political decisions. When the decompression of the early 1970s paved the way for the start of multi-party politics, the military respected the wishes of the political leadership under President Sadat and withdrew from active participation in politics. Since the early 1980s, this non-participation has led to the military's complete subordination to the civilianized authority of President Husni Mubarak. Throughout these periods of changing political roles, the Egyptian military remained the loyal repository of political power answerable only to a strong executive leadership in the person of a former military officer (the President) and sure of its privileged position within the polity."

Presidential Guard, the Republican Guard, and the military's 4th Division. And while Suharto relied on the support of the military to maintain power, he did not fully control it (Lee, 2009). In response to mass protest, the Syrian regime responded with brutality while the Indonesian military forced Suharto's resignation. The differences in the personalized nature of these militaries fail to emerge in current approaches to classifying autocracies, such as Geddes (2003), Gandhi (2008), and most recently Weeks (2012, 2014). In all of these projects, the Indonesian and Syrian regimes are grouped together in the same category.[5]

Finally, even when a personalist leader maintains control over policy and personnel decisions, there can still be a variation in the extent to which the heads of the security and military organizations rely on the autocratic leader for maintaining their own positions as well as the extent to which they have a corporate identity separate from the leader. For example, the Ghanaian military under Rawlings was considerably more institutionalized than militaries in other personalist dictatorships, such as Mobutu's regime in the former Zaire.

The Ghanaian military, which intervened to take power five times from 1966 to 1981, became less politicized and more institutionalized under Rawlings. Although Rawlings restructured the security services to bring them under his personal control and increasingly relied on the support of Ewe officers and troops,[6] the Rawlings regime nonetheless institutionalized the military to make it less patrimonial: "The PNDC scrupulously avoided using promotion as a reward system, and since 1983 the top hierarchy of the Armed Forces has regularly served out its full term of office, establishing orderly patterns of succession and bringing to an end the rapid changes in leadership" (Hutchful, 1997, 258).

In contrast, the Forces Armées Zaïroises (ZAF) under Mobutu were subject to continuous interference from the autocratic leader. Schatzberg (1988, 59) describes the military command as: "high-ranking soldiers and gendarmes are well aware of Mobutu's frequent rotations of office holders to ensure none can build an autonomous base of power. They also realize Mobutu can grant an important position in the command structure today and revoke it tomorrow." Indeed, Mobutu purged the military of all officers not from his home region, a strategy he also used to recruit members of the presidential guard (Schatzberg, 1988, 66).

[5]Two projects, Gandhi, Sumner and Parowczenko (2014) and Geddes, Honaker and Wright (2015), use slightly different sources of information and structure the information in different ways using latent variable techniques might better distinguish personalism across time within regimes.

[6]See Hutchful (1997, 258). After the 1981 coup, Rawlings disbanded the Military Intelligence unit and established the Bureau of National Investigation, placing it under the auspices of the Chief of National Security who reported directly to Rawlings (Hutchful, 1997, 257).

The differences between the Ghanaian military and the ZAF – in particular the extent of personal ties between the heads of the military and the regime leader – are not captured by indicators of autocratic regime type used in prior research. This is not an isolated comparison. Party-based autocracies in Eastern Europe, for example, also displayed variation in the extent to the regime leader personally controlled personnel decisions in the military, with Hungary and Romania lying at the two extremes (Barany, 1997). And Snyder (1992) shows that even among personalist leaders such as Marcos in the Philippines, Batista in Cuba and the Somoza family in Nicaragua, there can be substantial variation in the institutional autonomy of the military.

This project measures an observable feature of the coercive apparatus in autocratic regimes that is a closer proxy for a personalized military than extant categorical or ordinal indicators of autocratic regime type. To do this, we identify the security organizations that support the regime, the heads of these organizations, and the familial and ethnic ties between the regime leader and the heads of these organizations.

Measurement

In this section, we define the concepts used to code the information we use to construct a measure of a *personalist security apparatus*; and outline the data collection process. The sample period extends from 1990-2012, covering all country-years coded as autocratic regimes by Geddes, Wright and Frantz (2014).[7] Coders are asked to record information on January 1 of each calendar year during which an autocratic regime ruled.[8]

We define the dictator, or *regime leader*, as the de facto leader of the autocratic regime, which in some cases can differ from the nominal executive. An *organization leader* is the de facto leader of an operationally independent military or security organization.

A military or *security organization* must have personnel, funds, and access to weapons. A consultative military command group or security advisory committee is not defined as an organization unless it has its own budget line and personnel. For example, if the heads of the security organizations and/or military branches meet as a group periodically, this group is not an organization because it does not have its own budget or personnel. An *operationally independent* organization takes orders from the regime leader and thus is not under the chain of command from another

[7] We are currently extending the time period covered to 2015 and still need to code the variables for the year each regime took power (or 1989) to construct measures of year-to-year changes for all observations during autocratic periods. See Appendix Figures A-1 and A-2 for information on the extent of missingness – in space and time – from 1990-2012.

[8] The Appendix includes the code book.

individual. For example, if the head of the police force (or branch/division of the military) is under the command of the interior (or defense) ministry, then the interior (or defense) is the independent organization and not the police force (or military branch/division). However, if we find evidence that the head of the police (or military branch/division) communicates directly with and takes orders from the regime leader, then we code the organization as operationally independent.

A *personal family tie* with the regime leader can either be through blood (brother, son, nephew, cousin) or through marriage (i.e. at one point married to a brother, son, nephew or cousin). We do not consider members of the same "clan", "tribe", "hometown", or "region" as sufficient to code a personal family tie. Informal usage of the terms "brother", "cousin", or "uncle" that reflect camaraderie or respect for elders but that do not encompass blood relations are not considered family ties.

We use the Ethnic Power Relations (EPR) data set to define a *politically-relevant ethnic group* as a group that is either a MONOPOLY or DOMINANT or SENIOR PARTNER or JUNIOR PARTNER in the ruling regime AND that rules over a majority of other groups that are from other groups that are not MONOPOLY or DOMINANT or SENIOR PARTNER. These categories are operationalized in the Ethnic Power Relations data set (Wimmer, Cederman and Min, 2009; **?**; **?**). This coding rule is intended to capture autocratic regimes where the dictator and ruling elite are a numerical ethnic minority who rule over a majority of excluded groups, such as Sunnis in Iraq during Hussein's presidency and the Alawi's in Syria in the past two decades. In contrast, autocratic regimes where a dominant ethnic group, such as Arab Muslims in Egypt and Libya or Han in China, rule are coded as politically-*irrelevant*. We then identify whether the regime leader has a politically relevant ethnicity and attempt to code whether the organization leaders share the same politically relevant ethnic group as the regime leader (when there is a politically relevant ethnic group).

Data collection for this project proceeds in three steps. First, coders are asked to read the case study literature on military institutions and security organizations in each country to identify the key operationally independent military and security organizations. This step of the process is the most *subjective* because the coder needs to determine whether a particular organization is *operationally independent* from the case study literature. The country-case study memos describe difficult coding decisions with respect identifying these organizations. Because this stage of the data collection process entails some subjectivity we cannot be confident that the changes in the *number* of organizations is an objective measure of concepts such as *organizational proliferation* or

counter-balancing (Quinlivan, 1999; Haber, 2006). This does not mean we view these concepts as theoretically irrelevant, however.

Coders then record information on the organizations' names, the leaders of these organizations, and family or ethnic relations to the regime leader. We require coders to enter data as non-missing only when we have a publicly-available source that indicates the information is correct for a particular regime–year observation.[9]

We then conduct a second round of coding in which we use an "actor list" for each country, which identifies the names of individuals and organizations in a particular country case, to conduct an automated search for articles and documents found in *LexisNexus*, *Refworld.org* and region-specific publications such as *Africa Confidential*. To facilitate human coding of these documents, we compile information from all the documents into one pdf file that contains the paragraphs in each document that mention a key word from the "actor list" (highlighting the key word in each paragraph). Human coders then read the pdf file to verify existing information and fill-in missing data.

After the second round of data collection, we will have comprehensive data for most organizations in most years for most countries. However, the data set will be more complete and accurate with the input of country experts. We have identified 2-3 experts for each country in the data set; and have written a questionnaire to query the experts about the accuracy of the data from our initial collection efforts. The questionnaire will ask them to verify the names of the leaders of the military and security organizations as well as their family and ethnic ties to the regime leader. It will also ask for additional source material and solicit open-ended feed back. The experts will be contacted electronically and asked to provide information electronically on forms we have produced using Qualtrics survey software.

The expert survey in this application does *not* ask respondents to provide information about their own beliefs or behavior, and, more importantly, does *not* ask them to subjectively assess or "rate" the concept on a predetermined scale. Instead, the respondents are asked to identify *objective* information and provide publicly-available sources to corroborate the information. Thus, our expert survey differs from surveys that either: (1) ask respondents to pairwise compare cases, for example, to assess the relative level of

[9]This leaves many gaps in the data, which we can eventually impute using multiple imputation techniques that incorporate information about the time-series cross-section structure of the data. For example, in some cases we can only document that a particular individual is an organization leader in 1992 and 1994 but not 1993. However, we can enter this organization leader's information as a "best-guess" when imputing missing data.

democracy or measure policy (Honaker, Berkman, Ojeda and Plutzer, 2013); or (2) ask respondents to subjectively assess the degree of a concept, such as democracy or party ideology (Huber and Inglehart, 1995; Benoit and Laver, 2007; Wiesehomeier and Benoit, 2009; Coppedge, Gerring, Altman, Bernhard, Fish, Hicken, Kroenig, Lindberg, McMann, Paxton et al., 2011).[10]

Case example: Yemen

In this section, we provide a description of the type of information we collect for one case: Yemen, from 1990-2012.[11] This case also illustrates how personalization of the security apparatus can vary over time, reflecting the concentration of individual power in the hands of the dictator.

Ali Abdullah Saleh came to power in what was at the time the Yemen Arab Republic (North Yemen) in 1978, when the ruling Presidential Council led by the military chose him as President. Saleh ruled Yemen until 2012, when he was ousted amid popular uprisings. For the early part of Saleh's tenure, his security forces focused around the traditional military, which was divided into six regional commands.[12] Despite a nominal chief of staff and defense minister,[13] each regional commander was accountable directly to Saleh, and their decentralized position provided the commanders with significant operational autonomy (Phillips, 2011*a*). Of these regional commanders, Ali Muhsin al–Ahmar (not to be confused with Mohammed Ali Muhsin, the Southeast Commander) of the Northwest Command was the most influential: when Saleh came to power, Muhsin was appointed as his eventual successor. This would later cause friction between the two, and ultimately lead to Muhsin's early defection during the protests that ousted Saleh.

A key difficulty in coding the different Yemeni security organizations is the gap between *de jure* and *de facto* authority. Saleh would frequently appoint rival clan members or, after unification,

[10]Roughly half of the indicators coded in the V-dem project are derived from expert assessment rather than objective information (Coppedge, Gerring, Lindberg, Teorell, Altman, Bernhard, Fish, Glynn, Hicken, Kroenig et al., 2014).

[11]Most of the material for this section comes from the code book case memos. This case study was written by Mitchell Goist. Sources used to code the Yemen data include: Phillips (2011*a*); Saeed (2012); Wikileaks (2004); Alley (2010); CNN (2011); Jubran (2011); Wikileaks (2007); Foreign Intelligence Broadcast Service (1994); BBC (2011); Winter (2012); Alley (2008); International Crisis Groups (2013); Associated Press (2011); Phillips (2011*b*); Dresch (2000); Day (2012); Wikileaks (2005); FIBS (1992, 1989, 1994); Associated Press (2001); IPR (2002); Defense & Foreign Affairs Daily (2003); IPR (2004); Emirates News Agency (2005); BBC (2006); Yemen News Agency (2007); Business Monitor (2008); Yemen News Agency (2009*a*); Targeted News Service (2010); BBC (2011); Yemen Times (2012); Associated Press (2001); Yemen News Agency (2004, 2005, 2006); BBC (2007); Yemen News Agency (2009*b*); U.S. State Department (2010); Kuwait News Agency (2011); U.S. State Department (2012); Zimmerman (2012); Al Jazeera (2011).

[12]Only five of these commands are listed in the dataset because the Sanaa command was controlled directly by Saleh himself.

[13]In 1990, the Defense ministry was not listed as an official cabinet position

Southerners, to key command posts in the military, to create a facade of equitable governance. However, real command authority in these units was assigned to a Saleh loyalist, often a direct family relative, who was lower in the nominal hierarchy. According to a State Department memo released through Wikileaks (2005), "Having himself come to power by coup, Saleh has been extremely careful to select Commanders whose loyalty is ensured by tribal bonds. Member's of Saleh's Sanhan tribe control all military districts and most high security posts, with the commanders enjoying blood and/or close ties to Saleh." The commanders listed in the dataset are the *de facto* heads of each region—many of them also assumed the *de jure* command after the war with South Yemen ended in 1994 (Day, 2012). However, due to the inherent confusion in discerning *de facto* and *de jure* leaders, we code the regional commands as interpolated data for the pre–1994 period. The exception to this is Ali Muhsin, who maintained both effective and nominal command of his regional post until his defection.

The conclusive defeat of South Yemen in 1994 allowed Saleh to reorient his security apparatus around his personalist leadership. A similar shift occurred in 1999. Throughout his early tenure, Saleh relied heavily on his full brother, Mohammed Abdullah Saleh (not to be confused with Mohammed Saleh al–Ahmar, Saleh's half–brother and the commander of the Air Force) in his capacity as the leader of the Central Security Forces (CSF), Saleh's personal strike force, and one of his most trusted units (Alley, 2008). After Mohammed Saleh became ill, Saleh appointed his three nephews, Yahya, Ammar, and Tariq into important security roles. Yahya Saleh assumed his father's position in command of the CSF. Tariq Mohammed Abdullah Saleh took control of the Presidential Guard, a specialized unit within the Republican Guard that was responsible for Saleh's immediate safety. Later, in 2002 Ammar Mohammed Saleh was appointed the head of the National Security Bureau (NSB). The NSB is Yemen's second operationally independent intelligence agency, after the Political Security Organization (PSO), which was formed in 1992. When Saleh appointed his nephew to the NSB, this move began the marginalization of the larger, and less trustworthy, PSO, which was not commanded by a direct relative to Saleh.

Saleh's consolidation of the security apparatus, placing direct family relatives into control of his most trusted organizations, set the stage for Saleh's appointment of his son, Ahmed Saleh to head the elite Republican Guard, taking over from Saleh's half–brother Ali Saleh al–Ahmar.[14] This

[14]After vacating the Republican Guard to make room for Saleh's son, Ali Saleh assumed a shadowy post, nothing more descriptive than working in the office of the chief of the general staff. Ali Saleh was probably still an important player in the Saleh regime, especially since the position of Minister of Defense is almost entirely devoid of actual operational authority. However, due to his lack of organizational ties and the inability to draw a direct link between Ali Saleh and a specific unit, his position with the chief of general staff has not been coded.

move was read by many in Yemen as an attempt to install Ahmed Saleh as the eventual successor to his father, at the expense of the previously anointed Ali Muhsin. To the best of his ability, Saleh attempted to sever resources and manpower from the traditional army, turning instead to the paramilitary forces commanded by familial relatives.

The *de jure* and *de facto* distinction in coding the appropriate regional commanders also arose in coding paramilitary units. For example, Yahya, Ammar, and Tariq are all nominally deputy commanders of their respective units, despite their effective control. As one source writes, "President Saleh actively prevents members of the Sanhan elite, other than a selection of his close relatives, from appearing in the media. The author is not aware of any publicly available photographs of his half-brother Ali Saleh ever having been published. His other half brother, Mohammed Saleh, makes only very rare media appearances: even though he is more powerful than the Minister of Defense, it is the minister's picture that is in the public domain."

Beginning in 2011, cracks were beginning to form in Saleh's security apparatus. While popular uprisings provided the impetus for formal defection of Saleh's top commanders, there had been growing unrest among the traditional army following Saleh's realignment of the security services to favor his son and nephews. Amidst riots and a government crackdown, two of the top military commanders, Ali Muhsin and Mohammed Ali Muhsin, defected to the opposition in March of 2011, along with other top military officers that were not commanders of an organization we code as independent. While the defectors, Ali Muhsin (cousin) and Mohammed Ali Muhsin (uncle), were family members, they were not in Saleh's immediate family and neither held a post in the forces tasked with directly protecting the regime leader.

Data

In this section, we discuss two ways in which the raw data can be employed to construct measures of theoretically important concepts: a *personalist security apparatus* and *security leadership turnover*.[15] As noted above, the case study literature on personalist dictatorships points to these two concepts. For example, Schatzberg (1988, 66) describes the logic behind Mobutu's ethnic quotas for high-ranking officers in the Zairian military as: "Mobutu knows a coup d'etat represents the most direct threat to the continuity of his rule...[he] establish[ed] loyalty" by "limiting access to the military's top positions to ethnic brothers... from Equateur," Mobutu's home region.

[15] We stress that data collection is still in progress and all reported results should be interpreted with appropriate caution.

Callaghy (1984, 180) notes that "the powers of appointment and dismissal that Mobutu wields create constant uncertainty for all officials, which helps to maintain their loyalty to him."

Personalist security apparatus

Using data collected for security organizations for each authoritarian regime-year, three variables are constructed to capture a personalized security apparatus: `ethnic_ties`, `family_ties`, and the composite `ties`, which aggregates information on ethnic and family ties. Each is a ratio of ties to potential ties. For example, for each country-year in the data, the ethnicity of the heads of each security organization, including ministries that are integral to the security apparatus, are coded as follows:

$$\text{ethnicity} = \begin{cases} 0 & \text{if not a co-ethnic of leader from politically relevant ethnic group;} \\ 1 & \text{if a co-ethnic of leader from politically relevant ethnic group;} \\ \text{No PREG} & \text{if leader is not from politically relevant ethnic group.} \end{cases}$$

To get the `ethnic_ties` measure, we sum the number of politically relevant co-ethnics in security positions and divide by the total number of security organizations. For the purposes of constructing the measure, we count "No PREG" observations as zeros in the data, given that there is not a politically relevant ethnic tie between a leader from a politically irrelevant ethnic group and the heads of security organizations. Therefore, for observations where the leader is not from a politically relevant ethnic group, `ethnic_ties` naturally takes a value of zero.[16]

The family relations are coded:

$$\text{family} = \begin{cases} 0 & \text{if not a relative of leader;} \\ 1 & \text{if an indirect relative of leader;} \\ 2 & \text{if a direct relative of leader.} \end{cases}$$

The `family_ties` measure is constructed by first summing the number of relatives, whether direct or indirect, in security positions and then dividing by the number of security positions. Finally,

[16] At present, the heads of some security organizations are not known, and in other cases the head of the organization is known but ethnic and family relations are not clear. Two versions of each of the variables presented here are constructed. We first omit the missing observations, and second we assume that missing observations should be coded as having no tie to the leader (i.e., as zeros). Below, the descriptive statistics are calculated by omitting the missing values.

the `ties` variable is constructed by summing the number family ties and the number of ethnic ties, then dividing by the number of potential family and ethnic ties (i.e., the number of security organizations multiplied by 2).

Figure 1 shows the distribution of the composite `ties` variable in the 35 regimes classified as personalist (right panel) and the 62 regime classified as non-personalist, using the coding scheme outlined in Geddes, Wright and Frantz (2014). As we might expect, the mean value of `ties` is greater in personal regimes, which is indicative of a patrimonial security apparatus wherein security organizations are more likely to be under the direct control of the dictator. In contrast, in non-personal regimes the lower mean value of `ties` is suggestive of the greater institutional autonomy enjoyed by security organizations in these cases.

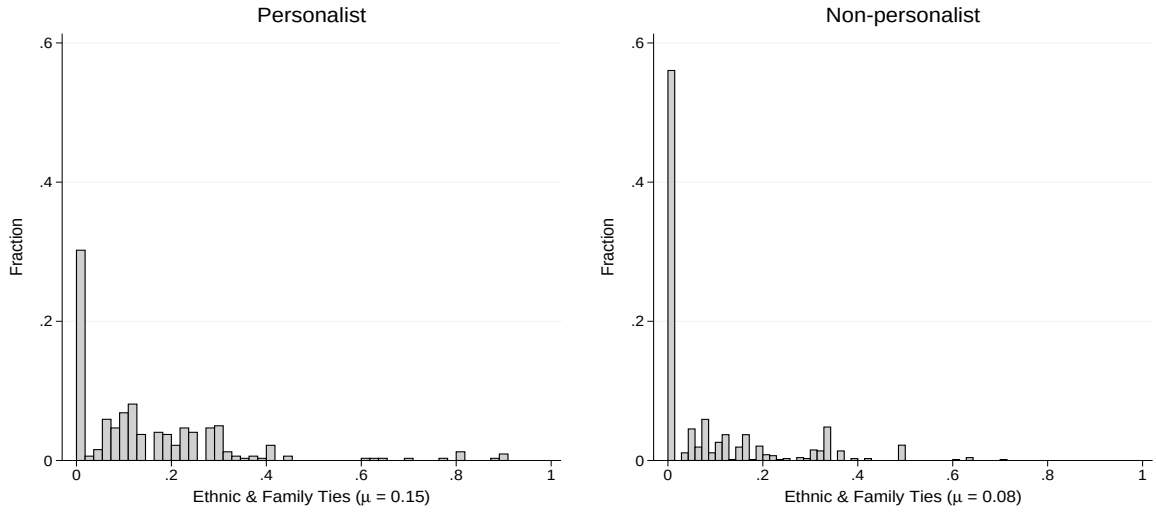

Figure 1: *Distribution of ethnic and family ties measure across non-personal and personal dictatorships, 1991–2010.*

That said, these data may provide greater insight into the degree of personalization within regime types. In Figure 2, we plot `ties` over authoritarian years for Egypt (1991–2010), Indonesia (1991–1999), and Syria (1991–2010), each of which are coded as "triple-hybrid" cases, combining characteristics of party, personal, and military regimes, in the Geddes, Wright and Frantz (2014) data. Following up on the discussion above, in spite of regime similarities, the time series of the `ties` measure demonstrate that the three security apparatuses are quite different. Egypt, notably, takes a value of zero in the time range covered by the data. This is partly a result of the fact that ethnicity is not politically relevant in the country, but it also indicates that Mubarak did not place family members in key security positions. In contrast, Syria scores much higher on the

`ties` measure, which speaks to the fact that the security forces in the country were effectively Alawite organizations and that family members of Asad were likewise given key security roles. Finally, Indonesia scores somewhere between Egypt and Syria during its authoritarian spell. This is primarily attributed to the high percentage of co-ethnics in security posts under Soeharto. However, unlike in Syria, family members of the dictator were not generally represented, indicating a lower level of personalisation in the security forces.

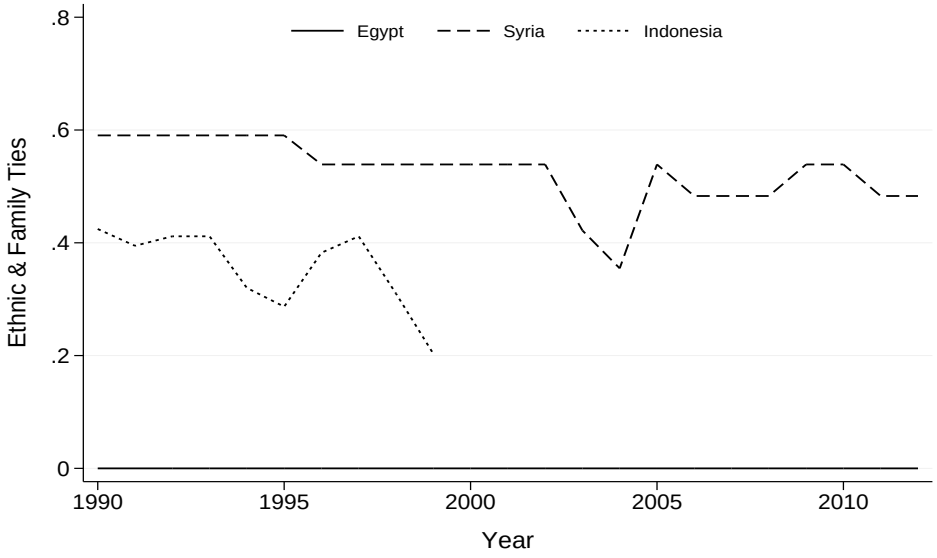

Figure 2: *Ethnic and family ties measure over authoritarian years in Egypt, Indonesia, and Syria, 1991–2010.*

That our measure differs from other data on personalism should not be surprising because the existing data sets were constructed with different questions in mind and therefore attempt to capture slightly different information. For example, both the original Geddes (1999) data and Weeks' (2012, 2014) update incorporate information on the relationship between the regime leader and the supporting political party: whether access to high government office depends on the personal favor of the dictator; whether country specialists viewed the politburo or equivalent as a rubber stamp for the dictator's decisions; and whether the dictator chooses most of the members of the politburo (or equivalent body).

Finally, Figure 3 shows that the initial measures of leadership security ties (`ties`, `family_ties`, and `ethnic_ties`) vary both across autocratic regimes (e.g. Egypt is different than Syria) as well across time within regimes (the extent of leader-security ties changes over time during the time in power of a particular dictatorship). Within-case variation helps researchers understand

when particular political events – such as coups, ther types of irregular leadership change, or civil war onset – are likely to occur and can thus aid empirical forecasting models. Further, measures with within-variation are essential for applied research using fixed effects estimators that isolate over-time variation.

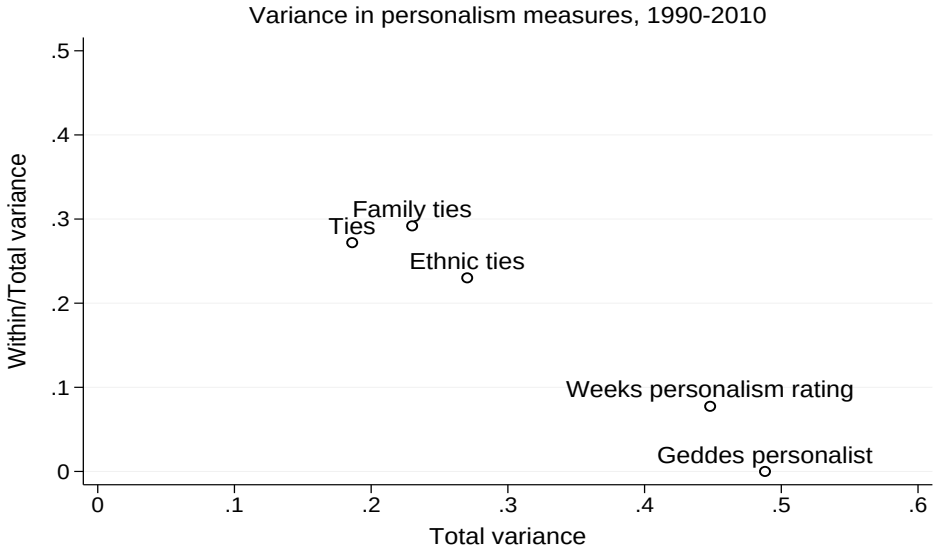

Figure 3: *Within-regime case variance for extant measures of personalism.*

The horizontal axis in Figure 3 measures the total variance of each variable, while the vertical axis measures the ratio of within-variance to total variance, or the extent to which the measure varies across time within regimes.[17] The three variable measuring leader-security ties have low overal variance but relatively high within variance: between 20 and 30 percent of total variance is within. In contrast, the most commonly used extant measures of personalism, from Geddes, Wright and Frantz (2014) and Weeks (2014), have greater overall variance but lower within variance. Indeed, the Geddes' measure of personalism is constant across time for any particular autocratic regime (0 within variance). The Weeks' measure improves upon the Geddes' variable on the within dimension, but within variation is still less than 10 percent.[18]

Table A-1 in the Appendix indicates that none of the variables we have constructed from the Leadership Security Ties data set is strongly correlated with measures of coup proofing from

[17]To clarify, we use the term *regime* to denote a particular autocratic regime case, whereas the term *regime type* refers to categories of autocracies (e.g. personalist or monarchy) that group together multiple distinct *regimes* that share some similar observable attributes.

[18]Two projects in progress, Gandhi, Sumner and Parowczenko (2014) and Geddes, Honaker and Wright (2015), use slightly different sources of information and structure the information in different ways using latent variable techniques that might have more within variation.

Pilster & Bohmelt. The number of ground organizations and the number of security organizations is correlated at 0.19 but the `turnover ratio` and `ties` variable are correlated with the P & B variables at less than 0.10.

In sum, the `ties` measure, as well as its component ethnic and family ties measures, provides for the ability to differentiate regimes in terms of the degree of personal control an authoritarian leader exerts over the security forces. Further, because the data contain time-varying information in many cases, it will help researchers explain the process of personalization of individual power.

Security leadership turnover

Because the data set identifies both the key security organizations that support a dictator and the names of the de facto leaders of these organizations, we can construct a measure of turnover – or volatility – within the security apparatus.[19] As a first cut, we calculate the number of the changes in the leadership of the key security organizations, divided by the number of security organizations in each country-year. We call this variable: `turnover ratio`. This measure accounts for the variation across regimes in the number of independent security organizations. For example, we record information on over 20 organizations for Indonesia during Soeharto's presidency, but only three in Laos. Further, because there may be some coding error in identifying the exact *number* of security organizations in each country-year, we calculate a ratio of leadership changes to number of organizations so the measure does not rely solely on counting the number of organizations. Indeed, the main advantage of identifying the persons who lead each organization is to measure turnover in security apparatus leadership even in countries where the number of key security organizations remains constant. Creating new (de facto) organizations and re-shuffling the leadership atop these groups are both strategies the dictator may employ that we can capture in this measure.

Figure 4 illustrates that there is substantial leadership turnover in the security apparatus even when we find no evidence that the dictator has altered the number of security organizations. The top left panel shows the distribution of the standard deviation of the number military and security organizations for 81 regimes. Just over a third of the regimes have a standard deviation of zero, indicating there is no variation over time in the number of organizations during the regime-spell

[19] Most empirical applications of volatility construct a variable from an autoregressive conditional heteroskedacity model (ARCH), but this requires both a long time series as well as at least some variation in the time series. In our sample period from 1990-2012, many regimes do not last the full 21 years. Further, for some regimes there is little variation in turnover over time within regimes. For these reasons, maximum likelihood ARCH models do not converge for a large share of the regimes in the data set.

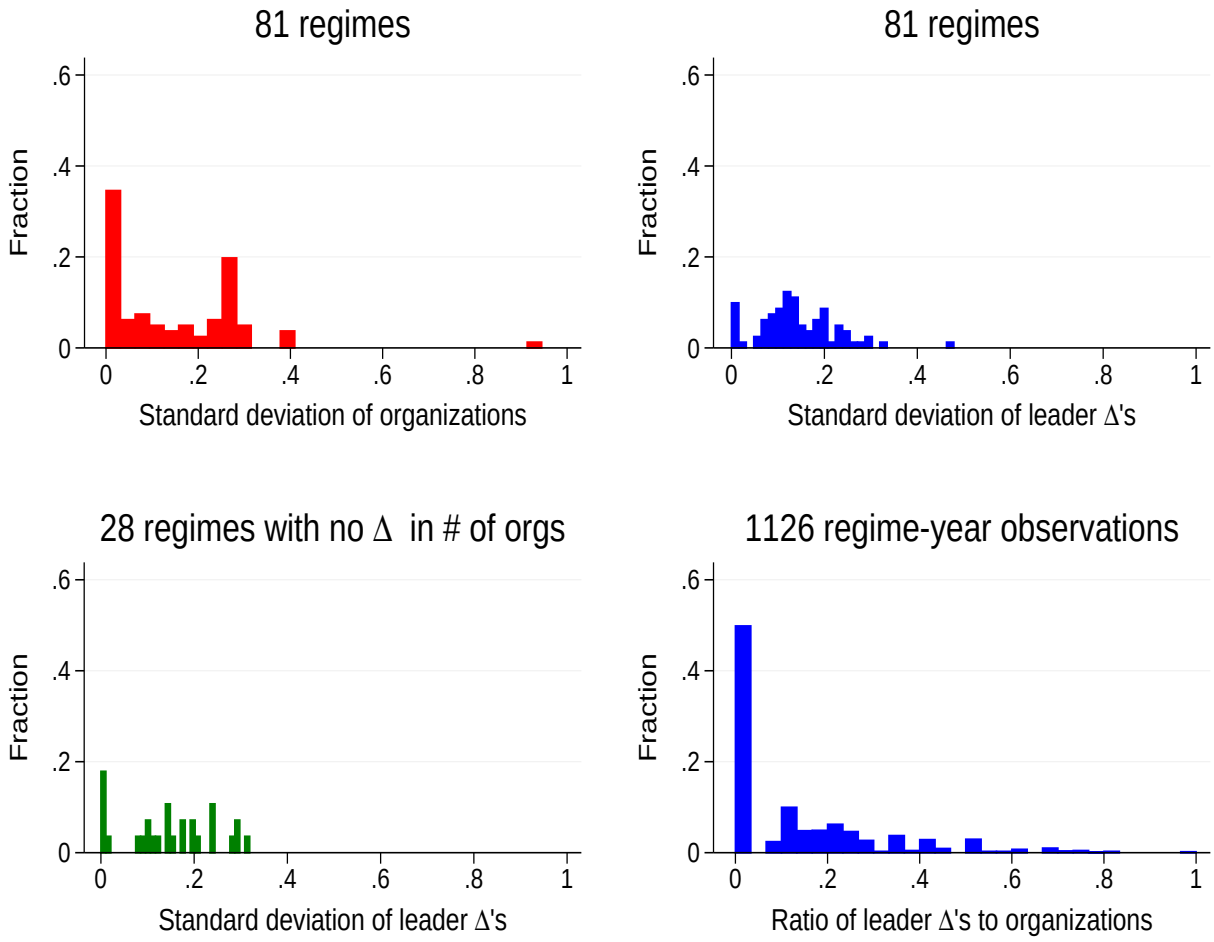

Figure 4: Variation in the number of security organizations and leadership change. The top two panels show the distribution of standard deviations for the number of organizations and leadership change, respectively, among 81 distinct autocratic regimes from 1991-2012. The bottom left panel shows the distribution of standard deviations for leadership change among the 28 regimes where the number of organizations stays constant across time during the sample period. Standard deviations depicted by all horizontal axes are divided by the total number of organizations in an observation year to allow for comparable scales across quantities of interest The bottom right panel shows the distribution of the ratio of leadership changes to number of organizations for each regime-year observation.

in the sample period (1990-2012).[20] In contrast, the top right panel shows that only about 10 percent of regimes have a standard deviation of zero for the number of *leadership* changes. This means some regimes have leadership change atop the security apparatus even when there is no change in the number of organizations, as shown in the bottom left panel. This plot indicates that leadership change occurs in over 80 percent of the 28 regimes with no variation in the number security organizations.

Our approach contrasts with other of measures coup-proofing or counter-balancing that rely on counting the number of military and paramilitary organizations (Belkin and Schofer, 2003; Pilster and Böhmelt, 2011).[21] The extant data from these studies relies primarily on information from the *Military Balance* publications. While this source provides excellent information on the formal military structure, it does not attempt to include intelligence agencies, interior ministry forces, pro-government militias, or the plethora of personal protection units, such as Presidential Guards, that many dictators create to protect themselves from the military.

Saddam Hussein, for example, created and supplied the Republican Guard as a military force that could not only effectively defend Baghdad from foreign invasion and rebel insurgents but that could also protect him against coup attempts originating from the regular military. Even though the Republican Guard was initially "used as a screen between the army and Baghdad, to prevent any coup attempts" (Al-Marashi, 2003), Hussein also employed an even more specialized security force intended to help protect him from the Republican Guard – the Special Republican Guard (*al-Haris al-Jamhuri al-Khas*). Indeed the latter came to his rescue when coup threats emerged from within the ranks of the Republican Guard in 1992, shortly after the end of the first Gulf war.[22] Further, an additional unit, the Special Protection Apparatus (*Jihaz al-Himaya al-Khasa*),

[20]These figures only include regimes with more than 2 observation years during the sample period. The year 1990 is dropped because there is not prior comparison year in the data set. Regimes that ruled for only one year during the sample period are also dropped.

[21]Belkin and Schofer (2003, 613) construct a measure of *counter-balancing* from the *Military Balance* data by"count[ing] the number of military and paramilitary organizations and compar[ing] the relative size of the paramilitary to the total armed forces." Pilster and Böhmelt (2011) construct a variable they call *effective number of ground-combat compatible military organizations*. It "incorporates information on both the number of rivaling military organizations and their respective strengths to capture the degree to which a state divides its military manpower into rivaling organizations' (Pilster and Böhmelt, 2011, 10).

[22]For example, news reports from early July 1992 state that: "Iraqi military forces may have tried to stage a coup against President Saddam Hussein on Monday [June 29], and intelligence reports have indicated that an armed revolt was crushed by presidential security forces, Bush administration officials and Iraqi opposition leaders said Thursday. Initial reports about a coup attempt were sketchy at best. One Administration official would say only that the coup plotters were intercepted early." An Iraqi opposition leader, Ahmad Chalabi, said that he had received reports that a mechanized brigade of Iraqi Republican Guards led by Brig. Sabri Mahmoud was issuing ammunition to their men and preparing to mount an assault on Baghdad when the brigade was "pounced on" by several battalions of security forces (Tyler, 1992). By contrast, the statement by the London-based Iraqi National Congress said that Mahmoud's brigade actually "had pushed toward Baghdad but was thwarted in its advance at an unnamed location

was tasked with Hussein's personal protection, and was headed by an immediate family member (Al-Marashi, 2003). According to the *Military Balance* there were six organizations in Iraq during the 1990s, with this number rising to seven once Sadaam's Fedayeen is added to the list in 1998. But even with the addition of this latter paramilitary group, the *Military Balance* does not capture the main counter-balancing organizations such as the Republican Guard, the Special Republican Guard, or the Special Protection Unit. One could argue that appointing co-ethnics and family members to head these latter security organizations – rather than the change in the number of effective organizations – were the main tools of coup-proofing during the 1990s.

Second, existing data on coup-proofing does not account for *who* leads the organizations that comprise the key forces in the security apparatus. Changes in security leadership positions capture different information than existing measures because changes in identity of security leaders do not always correspond with changes in the number of security organizations. The bottom right panel of Figure 4 shows that roughly half of regime-year observations have no change in the leadership of any security organization, but that the other half do. To put this figure in context, we note that regime leader changes in roughly 4 percent of the country-year observations. Thus there is substantially more volatility in security leaership than in regime leadership.

Third, because the data from Belkin and Schofer (2003) and Pilster and Böhmelt (2011) rely primarily on the *Military Balance*, they miss many informal arrangements between the regime leader and particular units within the larger formal military structure. For example, in Syria the regime leader's brother led the 4th division of the army prior to the Arab Spring uprisings. This information is not specified as a separate military branch in the *Military Balance*[23] and thus is not incorporated in measures of coup-proofing that employ the number of formal military organizations and information on personnel deployment among them. Deploying troops and funding the army's 4th division in Syria would appear to *lower* the measure of coup-proofing in the Pilster and Böhmelt (2011) data because this would be reflected as an increase in the largest branch's resources. Instead, such behavior might more accurately be interpreted as an increase in coup-proofing precisely because the 4th division is headed by the dictator's brother. Returning to the Yemeni case discussed above, the *Military Balance* counts five organizations – the Army, Navy, Air Force, Ministry of National Security, and Tribal Levies – through most of the 1990s, with the number rising to six in

on the northwestern outskirts", where Mahmoud was killed by loyal Takriti Republican Guards led by Gen. Kamal Mustafa, a relative of Saddam Hussein (Boustany, 1992).

[23] According to the *Military Balance* publications, there were five military and paramilitary organizations in Syria in the 1990s: the Army, Navy, Air Force, Gendarmie (Interior), and the Ba'th Party Workers' Militia.

1998 with addition of the Coast Guard. As Appendix Table 1 shows, this list from the *Military Balance* does not include the regional commands and presidential guards Saleh informally controlled during the 1990s. Our data code these types of organizations for the countries where they matter because we identify salient security organizations based on case study evidence and expert knowledge, rather than a list of military branches taken primarily from one think-tank publication.

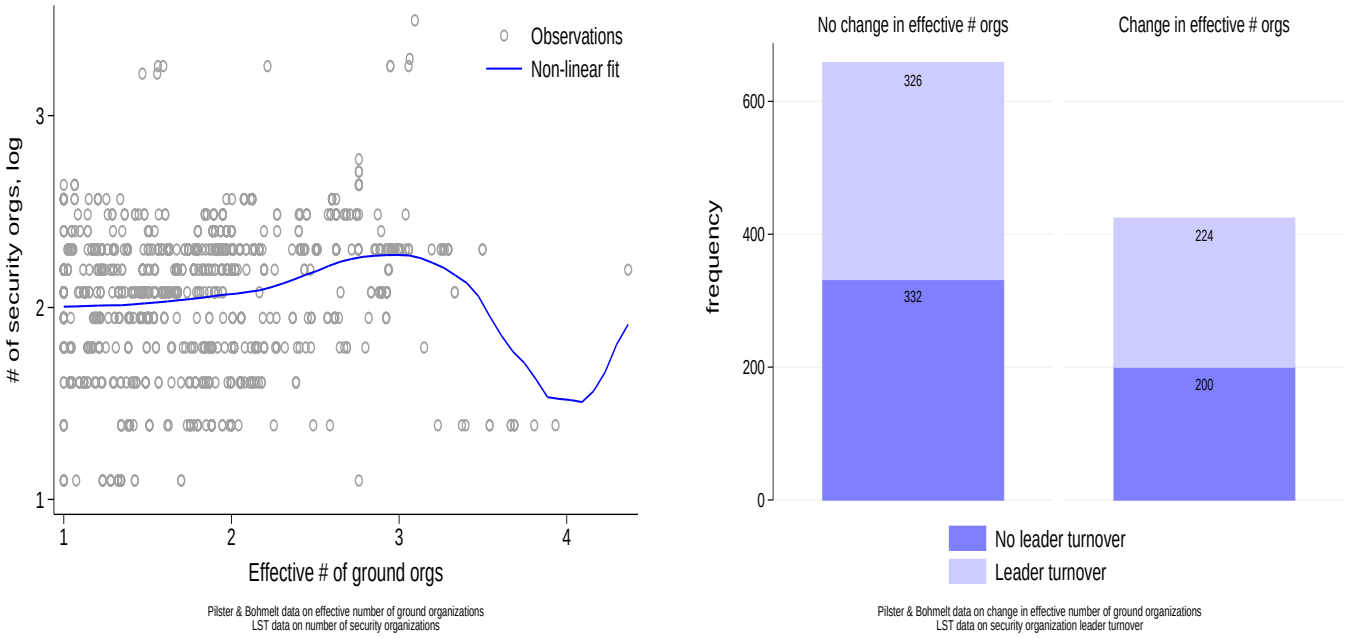

Figure 5: *Comparing* `number of organizations` *and* `turnover ratio` *to extant data.*

Figure 5 compares two variables we have constructed – `number of organizations` and `turnover ratio` – to Pilster and Bohmelt's (2011) data on the effective number of ground troop organizations (*Effective #*).[24] The left panel shows the relationship between the effective number of ground organizations (Pilster and Bohmelt) to the natural log of the number of security organizations (LST) we code for each regime-year. Overall, there is a weak correspondence between the two measures. The right panel shows the bivariate relationship between the change in the effective number of organizations and security organization leader turnover. In roughly half (326 of 658) of the regime-year observations with no change in the number of effective ground organizations, we observe security leader turnover. Similarly in just under one-half of regime-year observations with a

[24]Data on the latter was obtained from Jonathan Powell's website: `http://www.jonathanmpowell.com/determinants.html`. These comparisons are based on overlapping observations. For the overlapping years (1991-2011) there are 52 regime-years (out of a total of 1160 regime-years) with missing data on effective number of ground organizations, 59 regime-years with missing data on change in number of effective organizations, 0 missing regime-years for LST `number of organizations`, and 97 missing regime-years for `turnover ratio`.

change in the effective number of ground organizations, we observe no change in security leaders.[25] Together, these plots indicate that the information we code for both the number of organizations and the volalitity in the security apparatus are very different from the information contained in some of the best extant data on coup-proofing.

Empirical applications

In this section, we propose two research designs that make use of different features of the data set. In the first, we propose to use the leadership-security ties data to construct a time-varying measure of the extent to which the leaders of the security apparatus are personally tied to the regime leader – the variable we call `ties` that measures *personalist security apparatus*. We aim to employ this variable to examine how dictatorships respond to anti-regime protest mobilization. Second, we propose to test whether foreign economic pressure destabilizes autocracies by examining how economic sanctions influence security sector stability, using as a dependent variable a measure of volatility in the turnover of key military and security leadership positions: the `turnover ratio`.

Personalist security apparatus as an explanatory variable

One research question that utilizes this data as an explanatory variable examines how dictatorships respond to regime crises: are personalized militaries in dictatorships more likely to use violence to repress anti-regime mass mobilization? We argue that personalized military and security forces – those with closer personal or ethnic connections to the regime leader – more often use repression during periods of domestic unrest because the leaders of these organizations are closely tied to the regime leader and thus more likely to be replaced should the regime fall. Therefore, senior personnel in personalized security organizations have a stronger incentive to fight for the survival of the regime than those in non-personalized militaries. Because domestic unrest is therefore more likely to foster violent (as opposed to non-violent) regime collapse, transitions in these countries are more likely to be followed by periods of instability or new dictatorships rather than democracy.

Dictators who install their family members and co-ethnic officers in high-ranking military positions are likely to be better placed to use armed repression to quell protests and fight rebels. While this does not guarantee they will remain in power, this regime characteristic increases the chances that the dictator will fight to the end, and decreases the prospect of a negotiated transition. Indeed,

[25] In the Appendix, we provide a plot of the bivariate relationship between the continuous measures of these variables.

the historical record suggests that personal ties between the leader and the security forces enhance the likelihood that dictatorships will prolong their hold on power through the use of brute force. In Egypt and Tunisia in 2011, for example, the heads of the military and key security organizations were not blood relatives of the man in power. In both countries, state-led violence was minimal, and protesters were successful in ousting their leaders. These leaders each relied on the support of the military to maintain power, but did not fully control it, causing them to step down once it became clear that the military would not massacre civilian protesters. In Gaddafi's regime in Libya, by contrast, two of his sons commanded key military posts. Khamis al-Qaddafi and Mutassim al-Qaddafi, led the military and security organizations crucial to supporting the regime and fighting rebels groups in the East. The propensity for governments to confront citizen unrest with violence is intensified when there are personal connections between the leader and the security forces.

To identify periods of regime crisis, we will use monthly data from a latent measure of anti-regime protests from Chenoweth, D'Orazio, Fariss and Wright (2014). The latent protest data combines historical data on mass protest campaigns (Chenoweth and Lewis, 2013) with event data from various sources, as well as standard cross-national measures of protest from the Banks data set. The data capture well-publicized events such as the Color Revolutions in post-Communist Eurasia and the Arab Spring uprisings in 2011, but also less well-documented uprisings such as the Reformasi campaign in Malaysia in 1998-99, the lawyers protests against Musharraf in Pakistan in 2007-08, and more recent protests campaigns against Museveni's rule in Uganda and al-Bashir's regime in Sudan. The latent measure will be used as a time-varying monthly binary treatment variable in the empirical analysis. We will interact this binary treatment variable with the measure of personal leadership security ties from the Leadership Security Ties Database. This research design allows us to test whether personalized security forces influence how the incumbent autocratic regime responds to the regime crisis identified by the protest data set.

We will analyze two outcomes: (1) state-led violence against non-state civilian actors; and (2) the risk of regime transition (both non-violent and violent). Data on state-led violence against civil actors will be collected at the monthly level from the Atrocities data base (1995-2015). Care will be taken to aggregate information from this dataset to account for potential false positives, media fatigue, and change over time in the baseline number of events. Data on violent and non-violent regime transitions (1990-2015) will draw from updates to Geddes, Wright and Frantz (2014).

To model state-led violence, we will employ a zero-inflated negative binomial model; for regime collapse, we will employ a binary dependent variable model. With both types of analyses, we will

examine empirical specifications that model country-fixed effects to mitigate threats to inference from time-invariant omitted variables. Because unit effects can be difficult to directly model in limited dependent variable models in many applications, we will explore a correlated random effects approach that uses time-invariant unit means of the explanatory variables to model unit effects while simultaneously specifying random effects (Wright, Frantz and Geddes, 2015). This approach is similar to matching observations within the same country (Imai and Kim, 2013), and has the benefit of allowing a relatively time-invariant variable such as our measure of a personal security apparatus to be included in the model.

Security leadership turnover as a dependent variable

A second research question for which the security leadership volatility data might be fruitfully employed is to examine whether foreign economic coercion, in the form of sanctions, destabilize the security apparatus. While research to inform the debate about whether economic sanctions "work" often looks at individual sanction episodes to assess whether the target country "backed down" after the threat or imposition of sanctions (Drury, 1998; Drezner, 1999; Hufbauer, Schott, Elliott and Oegg, 2007), this research design fails to consider how political outcomes that occur during sanction periods compare with the counter-factual world of political outcomes that might have occurred in the absence of sanctions. By restricting the analysis to target countries under sanctions, these designs place greater emphasis on the type of sanction but limits our understanding of how sanctions influence target behavior. New research aims to assess sanction effectiveness by comparing political outcomes during sanction episodes to outcomes that occur when no sanction is present (Marinov, 2005; Escribà-Folch and Wright, 2010). This new research typically examines how sanctions influence the durability of dictators' tenure in power.

This approach, however, rarely accounts for the various ways in which dictators lose power, which in many cases may simply take the form of one autocratic leader peacefully replacing the incumbent after expiration of a fixed term limit.[26] This can occur both when an autocratic leader is nominally elected, as in Iran, or when leaders are unelected, as in China. Further, leadership change in many dictatorships is a rare event. For example, in Cuba during the period of communist rule only two leaders have held power, with one brother replacing the other only after the former fell ill. If economic sanctions produce political instability in places such as Cuba or Iran, this instability is unlikely to be captured in existing measures of leadership change.

[26]However, see Licht (2011).

Examining how sanctions influence leadership stability within the security appartus may prove a fruitful way forward in this research, particularly as sending countries increasingly narrow sanction targets in attempts to impose costs on regime elite rather than the general population. For example, U.S. sanctions against Iran in 2010 targeted a Revolutionary Guard officer – General Qasemi – who was head of the Khatam-al Anbiya Constrcution Company.[27] Recent Western sanctions against Russia in response to the latter's invasion and annexation of Crimea not only targeted economic elites that support Putin's regime but also key individuals in the security apparatus, including the head of Russia's military (Valery Gerasimov) and the chiefs of the main intelligence agencies (Alexander Bortnikov, Igor Sergun, and Mikhail Fradkov).

Because the security apparatus may be instrumental in preserving the regime when it faces internal threats from insurgents, protesters, or defecting elites, changes in the leadership of key security organizations may reflect lower level regime instability that cannot be observed by simply looking at the likelihood of the regime leader being ousted. To defend against increasing internal threats, the dictator may need to provide security organizations with more *coordination goods*[28] to better the chances of defeating these threats. But increasing the coordination capacity of the security sector can also increase the chances they successfully oust the regime leader. Thus the dictator has an incentive to reshuffle leaders in the security sector to install more loyal individuals when shifting the focus of security from external to internal threats. Thus observed reshuffling of security organization leaders may be a sign of regime instability.

The proposed research will examine how foreign economic coercion influences stability in the security apparatus to assess whether sanctions can impose *political costs* on the target regime. The dependent variable in this analysis is the `turnover ratio`, which measures the number of security leadership changes relative to the number of security organizations in each regime-year. Because this variable is bounded, we will logit transform it before employing a country-fixed effects linear model. The fixed effects estimator isolates the time variation in the data and thus accounts for unobserved heterogeneity in the selection of sanctions. Some countries, such as Cuba, maybe more likely targets of U.S. sanctions because of their geographic proximity to the U.S. Other countries, because of the large size of their economies and populations, such as China, may be less likely

[27] See "Iran names Guards commander Rostam Qasemi oil minister" *BBC News*, 3 August 2011. Available at: `http://www.bbc.co.uk/news/world-middle-east-14393406`. In this case, the individual targeted by the sanction appears to have been promoted to a top position in the oil ministry, perhaps reflecting further incorporation of the IRGC into the petroleum sector.

[28] Coordination goods might take the form of allowing security leaders to meet with one another to plan strategy or allowing personnel from security organizations to move close to or into the capital city.

to be targeted with sanctions. The fixed-effect estimator directly models these types of strategic selection.

Conclusion

This paper introduces new data from the *Leadership Security Ties* project. This data set compiles information from historical case studies, news reports, and primary sources into a comprehensive list of the operationally independent military and security organizations in all dictatorships in the world from 1990-2015. The data contain a list of the leaders of these organizations and codes whether these organization leaders have a personal family or politically-relevant ethnic connection to the regime leader. Even though we have described the data collection process and provided some initial comparisons with existing data, we stress that data collection is still in progress and all reported results should be interpreted with appropriate caution.

Finally, while we have outlined two potential research applications that employ distinct features of the data, we believe that this project can aid our understanding of how a personalized military responds to domestic political change, which will in turn have implications for future research on the integration of government and rebel fighters when civil wars end; the behavior of foreign militaries after regime change; and counter-terrorism efforts in autocratic countries.

References

Al Jazeera. 2011. "Top army commanders defect in Yemen.".

Al-Marashi, Ibrahim. 2003. "The Republican Guard [Al-Haris Al-Jamhuri].". Available at: `http://cns.miis.edu/iraq/rguard.htm` (accessed 27 May 2014).

Alley, April Longley. 2008. "Shifting Light in the Qamariyya: The Reinvention of Patronage Networks in Contemporary Yemen.". Dissertation: Georgetown University.

Alley, April Longley. 2010. "The Rules of the Game: Unpacking Patronage Politics in Yemen." *The Middle East Journal* .

Associated Press. 2001. "Eldest brother of Yemeni president dies.".

Associated Press. 2011. "Indonesia: President Appoints Brother-in-Law to Lead Army." *New York Times* .
URL: `http://nyti.ms/iEFhRB`

Barany, Zoltan. 1997. "Democratic Consolidation and the Military: The East European Experience." *Comparative Politics* 30(1):21–43.

Barany, Zoltan. 2011. "Comparing Arab Revolts: The Role of the Military." *Journal of Democracy* 22(4):24–35.

BBC. 2006. "Yemeni interior minister leaves for Tunis to attend conference on terrorism." *BBC Monitoring Middle East* .

BBC. 2007. "Yemeni cabinet reshuffled." *BBC Monitoring Middle East* .

BBC. 2011. "Yemen Crisis: Key players.".
URL: *http://www.bbc.co.uk/news/world-middle-east-13573865*

Belkin, Aaron and Evan Schofer. 2003. "Toward a structural understanding of coup risk." *Journal of Conflict Resoluation* 47(5):594–620.

Bellin, Eva. 2004. "The Robustness of Authoritarianism in the Middle East: Exceptionalism in Comparative Perspective." *Comparative Politics* 36(2):139–157.

Bellin, Eva. 2012. "Reconsidering the Robustness of Authoritarianism in the Middle East: Lesson from the Arab Spring." *Comparative Politics* 44(2):127–149.

Benoit, Kenneth and Michael Laver. 2007. "Estimating Party Policy Positions: Comparing expert surveys and hand-coded content analysis." *Electoral Studies* 26(1):90–107.

Boustany, Nora. 1992. "Exiled Iraqi Dissidents Report Coup Attempt Against Saddam." *Washington Post* p. A24.

Bratton, Michael and Nicolas van de Walle. 1994. "Neopatrimonial Regimes and Political Transitions in Africa." *World Politics* 46(4):453–489.

Bueno de Mesquita, Bruce, Alistair Smith, Randolph Siverson and James Morrow. 2003. *Logic of Political Survival*. Cambridge: MIT Press.

Business Monitor. 2008. "Q1 2008." *Oman & Yemen Business Forecast Report* .

Callaghy, Thomas M. 1984. *The State-Society Struggle: Zaire in Comparative Perspective*. New York: Columbia University Press.

Chehabi, H. E. and Juan J. Linz. 1998. *Sultanistic Regimes*. Baltimore, MD: The Johns Hopkins University Press.

Chenoweth, Erica and Orion A. Lewis. 2013. "Unpacking nonviolent campaigns Introducing the NAVCO 2.0 dataset." *Journal of Peace Research* 50(3):415–423.

Chenoweth, Erica, Vito D'Orazio, Christopher Fariss and Joseph Wright. 2014. "A Latent Measure of Political Protest.".

CNN. 2011. "Yemeni prime minister, six top officials hurt in shelling at presidential palace.".
URL: *http://news.blogs.cnn.com/2011/06/03/tribal-fighters-in-missile-battle-at-yemen-presidential-palace/*

Coppedge, Michael, John Gerring, David Altman, Michael Bernhard, Steven Fish, Allen Hicken, Matthew Kroenig, Staffan I Lindberg, Kelly McMann, Pamela Paxton et al. 2011. "Conceptualizing and Measuring Democracy: A new approach." *Perspectives on Politics* 9(02):247–267.

Coppedge, Michael, John Gerring, Staffan Lindberg, Jan Teorell, David Altman, Michael Bernhard, Steven Fish, Adam Glynn, Allen Hicken, Matthew Kroenig et al. 2014. "Varieties of Democracy (V-Dem): Dataset.".

Davenport, Christian. 2007. *State Repression and the Domestic Democratic Peace.* New York: Cambridge University Press.

Day, Stephen W. 2012. *Regionalism and Rebellion in Yemen: A Troubled National Union.* New York: Cambridge University Press.

Defense & Foreign Affairs Daily. 2003. "New Yemen Government Installed.".

Dresch, Paul. 2000. *A History of Modern Yemen.* Cambridge University Press.

Drezner, Daniel W. 1999. *The Sanctions Paradox: Economic Statecraft and International Relations.* Cambridge: Cambridge University Press.

Drury, Cooper. 1998. "Revisiting *Economic Sanctions Reconsidered.*" *Journal of Peace Research* 35(4):497–509.

Emirates News Agency. 2005. "Yemeni Minister to visit UAE.".

Enloe, Cynthia H. 1980. *Ethnic Soldiers: State Security in Divided Societies.* Athens, GA: University of Georgia Press.

Escribà-Folch, Abel and Joseph Wright. 2010. "Dealing with Tyranny: International Sanctions and the Survival of Authoritarian Rulers." *International Studies Quarterly* 2(54):335–359.

FIBS. 1989. "USSR Deputy Interior Minister Arrives on Visit." *Foreign Broadcast Information Service* p. 27.

FIBS. 1992. "Yemen, Parties Concerned About Violence Against Officials." *Foreign Broadcast Information Service* .

FIBS. 1994. "Russian Experst Said Preparing Sanaa's Air Force." *Foreign Broadcast Information Service* .

Finer, S. E. 1962. *The Man on Horseback. The Role of the Military in Politics.* London: Pall Mall Press.

Foreign Intelligence Broadcast Service. 1994. "New Heads of Command Structures Named.".

Gandhi, Jennifer. 2008. *Political Institutions under Dictatorship.* New York: Cambridge University Press.

Gandhi, Jennifer, Jane Lawrence Sumner and Christina Parowczenko. 2014. "Measuring Personalism and its Effects in Non-Democracies." Emory University.

Geddes, Barbara. 1999. "What Do We Know About Democratization After Twenty Years?" *Annual Review of Political Science* 2(1):115–144.

Geddes, Barbara. 2003. *Paradigms and Sand Castles.* Ann Arbor: University of Michigan Press.

Geddes, Barbara. 2008. "Party Creation as an Autocratic Survival Strategy." Paper presented at 'Dictatorships: Their Governance and Social Consequences' Conference at Princeton University, April 25-26.

Geddes, Barbara, James Honaker and Joseph Wright. 2015. "The Latent Characteristics That Structure Autocratic Rule." paper presented at "Political Institutions and the Behavior of States in the International System", Yale University.

Geddes, Barbara, Joseph Wright and Erica Frantz. 2014. "Autocratic Breakdown and Regime Transitions." *Perspectives on Politics* 12(2):313–331.

Haber, Stephen. 2006. Authoritarian Government. In *The Oxford Handbook of Political Economy*, ed. Barry Weingast and Donald Wittman. Oxford University Press.

Harb, Imad. 2003. "The Egyptian Military in Politics: Disengagement or Accommodation?" *Middle East Journal* 57(2):269–290.

Honaker, James, Michael Berkman, Chris Ojeda and Eric Plutzer. 2013. "Sorting Algorithms for Qualitative Data to Recover Latent Dimensions with Crowdsourced Judgments: Measuring State Policies for Welfare Eligibility under TANF.".

Horowitz, Donald L. 1985. *Ethnic Groups in Conflict*. Berkeley, CA: University of California Press.

Huber, John and Ronald Inglehart. 1995. "Expert Interpretations of Party Space and Party Locations in 42 Societies." *Party Politics* 1(1):73–111.

Hufbauer, Gary. C., Jeffrey J. Schott, Kmberley A. Elliott and Barabara Oegg. 2007. *Economic Sanctions Reconsidered: Third Edition*. Washington DC: Peterson Institute for International Economics.

Huntington, Samuel P. 1957. *The Soldier and the State*. Cambridge: Harvard University Press.

Huntington, Samuel P. 1991. "How Countries Democratize." *Political Science Quarterly* 106(4):579–616.

Hutchful, Eboe. 1997. "Military Policy and Reform in Ghana." *The Journal of Modern African Studies* 35(2):251–278.

Imai, Kosuke and In Song Kim. 2013. "On the Use of Linear Fixed Effects Regression Estimators for Causal Inference." *Unpublished Manuscript* .

International Crisis Groups. 2013. "Yemen's Military–Security Reform: Seeds of New Conflict?" *Middle East Report* .

IPR. 2002. "Government – Yemen Minister of Interior on Way to Italy.".

IPR. 2004. "Training for Student Police Force." *IPR Strategic Business Information Database* .

Jubran, Jamal. 2011. "Ali Mohsen Al–Ahmar: Yemen's Biggest Winner." *Al Akhbar English* . **URL:** *http://english.al-akhbar.com/node/2912*

Kamrava, Mehran. 2000. "Military Professionalization and Civil-Military Relations in the Middle East." *Political Science Quarterly* 115(1):67–92.

Kuwait News Agency. 2011. "Turkey, Yemen sign five cooperation agreements.".

Lee, Terence. 2009. "The Armed Forces and Transitions from Authoritarian Rule Explaining the Role of the Military in 1986 Philippines and 1998 Indonesia." *Comparative Political Studies* 42(5):640–669.

Licht, Amanda A. 2011. Falling out of favor: Economic sanctions and the tenure of leaders. In *Chicago, IL: Annual Meeting of the Midwest Political Science Association (MPSA)*.

Luckham, Robin. 1994. "The Military, Militarization and Democratization in Africa: A Survey of Literature and Issues." *African Studies Review* 37(2):13–75.

Magaloni, Beatriz. 2006. *Voting for Autocracy: Hegemonic Party Survival and its Demise in Mexico*. Cambridge: Cambridge University Press.

Marinov, Nikolay. 2005. "Do Sanctions Destabilize Country leaders?" *American Journal of Political Science* 49(3):564–576.

Nicholls, David. 1986. "Haiti: The Rise and Fall of Duvalierism." *Third World Quarterly* 8(4):1239–1252.

Nordlinger, Eric. 1977. *Soldiers in politics: military coups and governments*. Englewood Cliffs, NJ: Prentice Hall.

Phillips, Sarah. 2011*a*. *Yemen and the Politics of Permanent Crisis*. Routledge.

Phillips, Sarah. 2011*b*. "Yemen: Developmental Dysfunction and Division in a Crisis State.". Research Paper 14.

Pilster, Ulrich and Tobias Böhmelt. 2011. "Coup-Proofing and Military Effectiveness in Interstate Wars, 1967-99." *Conflict Management and Peace Science* 28(4):331–350.

Quinlivan, James T. 1999. "Coup-proofing: Its Practice and Consequences in the Middle East." *International Security* 24(2):131–165.

Saeed, Ali. 2012. "Divided military threatens Yemen's stability." *Arab News* .

Schatzberg, Michael. 1988. *The Dialectics of Oppression in Zaire*. Bloomington: Indiana University Press.

Snyder, Richard. 1992. "Explaining Transitions from Neopartimonial Dictatorships." *Comparative Politics* 24(4):379–399.

Svolik, Milan W. 2012. *The Politics of Authoritarian Rule*. New York: Cambridge University Press.

Targeted News Service. 2010. "State Department Issues Background Note on Yemen.".

Thompson, William R. 1980. "Corporate Coup-Maker Grievances and Types of Regimes Targets." *Comparative Political Studies* 12(4):485–96.

Tyler, Patrick E. 1992. "U.S. and Iraqis Tell of Coup Attemp Against Baghdad." *New York Times* . Available at: `http://nyti.ms/1hvrzrp` (Accessed 27 May 2014).

U.S. State Department. 2010. "Background Notes: Yemen." *State Department Documents and Publications* .

U.S. State Department. 2012. "Background Notes: Yemen." *State Department Documents and Publications* .

Weber, Max. 1964. *The Theory of Social and Economic Organization*. New York: Free Press.

Weeks, Jessica. 2008. "Autocratic Audience Costs: Regime Type and Signaling Resolve." *International Organization* (62):35–64.

Weeks, Jessica L. 2012. "Strongmen and Straw Men: Authoritarian Regimes and the Initiation of International Conflict." *American Political Science Review* 106(02):326–347.

Weeks, Jessica L. 2014. *Dictators at War and Peace*. Ithaca, NY: Cornell University Press.

Wiesehomeier, Nina and Kenneth Benoit. 2009. "Presidents, Parties, and Policy Competition." *The Journal of Politics* 71(4):1435–1447.

Wikileaks. 2004. "President Saleh's Son: Alive and Well in Sanaa.".

Wikileaks. 2005. "Will Saleh's Successor Please Stand Up?".

Wikileaks. 2007. "Who has the ear of the President? Part 1: General Overview.".

Wimmer, Andreas, Lars-Erik Cederman and Brian Min. 2009. "Ethnic politics and armed conflict. A configurational analysis of a new global dataset." *American Sociological Review* 74(2):316–337.

Winter, Lucas. 2012. "Restructuring Yemen's Military Leadership." *Foreign Military Studies Office* .

Wintrobe, Ronald. 1998. *The Political Economy of Dictatorship*. New York: Cambridge University Press.

Wright, Joseph, Erica Frantz and Barbara Geddes. 2015. "Oil and Autocratic Regime Survival." *British Journal of Political Science* 45(2):287 – 306.

Yemen News Agency. 2004. "Yemeni–Chinese military cooperation discussed.".

Yemen News Agency. 2005. "Yemen, France discuss cooperation.".

Yemen News Agency. 2006. "Minister of Defense Visits Militay Forces Units.".

Yemen News Agency. 2007. "Yemen, DCCP discuss bilateral cooperation.".

Yemen News Agency. 2009*a*. "Interior ministry chases nearly 4,000 wanted persons.".

Yemen News Agency. 2009*b*. "Yemen, US discuss military cooperation.".

Yemen Times. 2012. "Yemen's New Government.".

Yom, Sean L. and F. Gregory Gause III. 2012. "Resilient Royals: How Arab Monarchies Hang On." *Journal of Democracy* 23(4):74–88.

Zimmerman, Katherine. 2012. "Insurgency in Yemen: the New Challenge to American Counter-Terrorism Strategy.".
URL: *http://tinyurl.com/kj5uorf*

Zisser, Eyal. 2001. "The Syrian Army: Between the Domestic and the External Fronts." *Middle East Review of International Affairs Journal* 5(1):1–12.

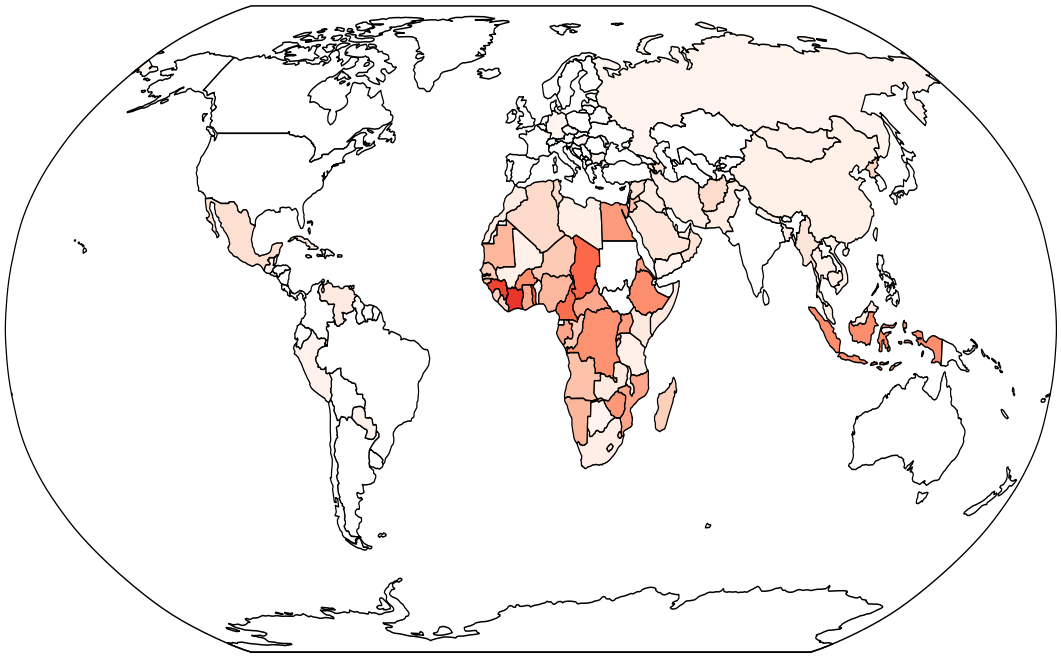

Figure A-1: *Percent missing observations in leadership turnover for security organizations relative to the total organization-years per country. The countries are then weighted by their total organization-years, so that countries with fewer year authoritarian years and, more generally, fewer organization-years contribute less to the total percent missing in the data and therefore appear "less hot". For example, the German Democratic Republic (1949–1990) appears in the data for a single year, 1990, and has four security organizations for a total of four organization-years, whereas Zimbabwe (1980–present) has a total of 195 organization-years in the data during the 1990–2012 period. As such, the missingness statistic is weighted more heavily for Zimbabwe.*

Table A-1: Pairwise-correlation table

Variables	# ground orgs P & B	# security orgs LST	Δ # ground orgs P & B	Turnover ratio LST	Paramil ratio P & B	Ties LST
# ground orgs	1.000					
# security orgs	0.191	1.000				
Δ # ground orgs	0.215	0.004	1.000			
Turnover ratio	-0.070	-0.085	-0.026	1.000		
Paramil ratio	0.295	0.122	-0.092	0.014	1.000	
Ties	-0.014	0.175	0.015	-0.008	-0.069	1.000

P & B ≡ Pilster and Bohmelt (2011); LST ≡ Leadership Security Ties Data.

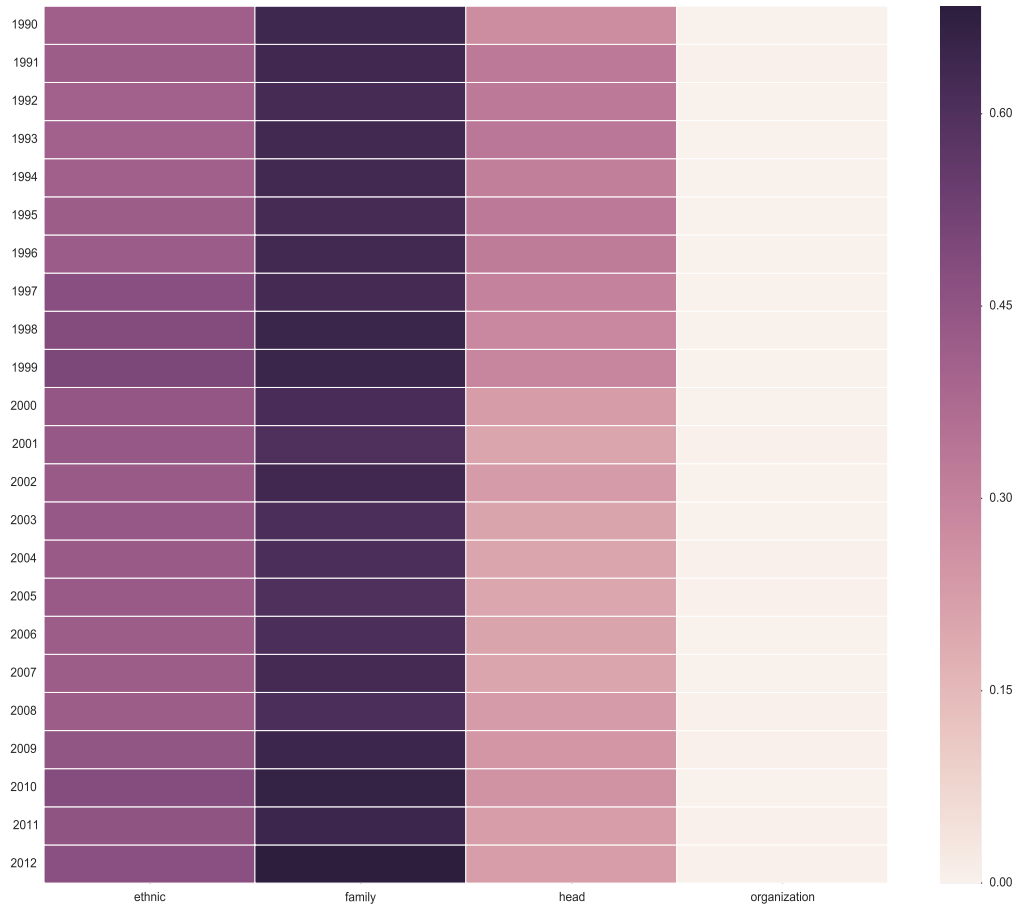

Figure A-2: *Missingness across years.*

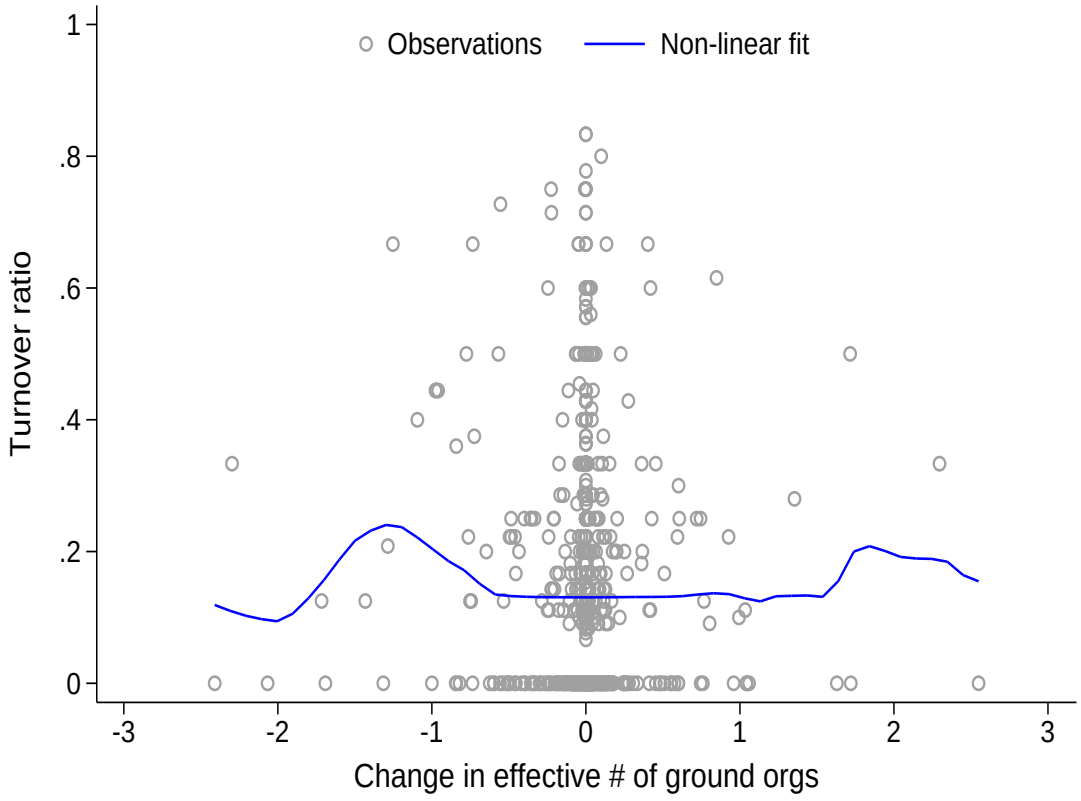

Figure A-3: *Bivariate relationship between change in the number of effective number of ground organizations from the Military Balance and security leadership turnover (LST).*

Coding Rules

We rely on the following definitions when applying the coding rules:

- A **security organization** exists if it has: (1) its own *personnel* (i.e. soldiers, troops, police force, investigate personnel); (2) control over *weapons*; and (3) *funding*. Security councils, which are groups of security leaders meeting together, do have their own personnel or weapons and are therefore not security organizations.

- An **operationally indepdendent** security organization is one in which the regime leader has a direct control over the organization. Direct control is observed when the regime leader can appoint/dismiss the organization leader and/or has a direct line of communication to order repression. If particular (e.g. branch or regional) military, intelligence, or police units are coordinated/directed by the defense or interior minister and the regime leader does not directly control the lower units, then these units are NOT operationally independent.

- A **family relative** of the regime leader is either: (1) *direct*, defined as a blood relation such as brother, son, uncle, or cousin; or (2) *indirect*, defined as a relation via marriage such as a son-in-law or brother-in-law.

- A country with **politically relevant** ethnic groups is one in which the ethnic group of the regime leader is MONOPOLY or DOMINANT or SENIOR PARTNER or JUNIOR PARTNER in the ruling regime AND the ruling executive coalition rules over a majority of citizens from other groups that are not MONOPOLY or DOMINANT or SENIOR PARTNER. These categories are operationalized in the Ethnic Power Relations data set (Wimmer, Cederman and Min, 2009; **?**; **?**).[29] This definition allows for regimes with a minority group regime leader who has an executive coalition with majority groups (coded as JUNIOR PARTNERS but not SENIOR PARTNER or DOMINANT by EPR) to still have politically relevant ethnicities (e.g. Tigray rule in Ethiopia is still politically relevant when Zenawi has Oroma and Amhara coalition partners). Further, this rule codes a case as 'NOT politically relevant ethnicity' when the regime leader is from a JUNIOR partner group when the SENIOR partner group is the majority (e.g. Musharraf in Pakistan) or a minority (Lee in Taiwan). If the SENIOR partner plus the regime leader's JUNIOR partner group form a majority, then we do NOT consider the case to have politically relevant ethnicity. If the regime leader comes from a majority group that is not in the ruling coalition, then ethnicity is coded as 'politically relevant' (e.g. Hausa are powerless majority in Niger under Mainassara). We still identify the regime leader's ethnicity during periods of STATE COLLAPSE (e.g. Sierra Leone under Strasser).

To measure links between the dictator and the security forces we proceed in the following three general steps:

- identify the operationally independent organizations, by name, that comprise the main branches of the military as well as operationally indepdent organizations in the security apparatus that lie outside of the formal military institutions

[29]For yearly data, we code on January 1 of each calendar year; EPR codes on December 31. For sub-Saharan African cases, all countries have politically relevant ethnic groups, according to our coding rules using the EPR data, except the following: Burkina Faso, Lesotho, Mali, Somalia, Swaziland, and Tanzania. Ethnicity in these cases is coded by EPR as IRRELEVANT. Regimes with a leader from a majority ethnic group include: Botswana under Tswana (Bangwato) rule, Burundi and Rwanda under Hutu regime leaders, and Zimbabwe under a Shona regime leader.

- for each organization in (1), identify the individual, by given and family name, who is the chief, leader, or head of the organizations
- for each individual in (2), identify whether he has a personal family tie with the dictator or if he belongs to the same politically-relevant ethnic group

The data file takes a country-year format. Please follow the steps outlined below to populate the data sheet.

1. Indicate the name of the **country**, **COW** country code, and **year** from Geddes, Wright and Frantz (2014) data. The period covered by the "Leader-Security Ties Dataset" is 1990-2012.
2. Indicate the name of the de facto **regime leader**, as of January 1st, from the Geddes, Wright and Frantz (2014) data.
3. Identify and the name of the perationally independent **organizations** that comprise the main branches of the military as well as the security apparatus outside of the formal military institutions. To do so, proceed by answering the following questions and include the information in the excel file.

    - What are the organizations in charge of internal security in that country? List the following if they are operationally independent:
        - Branches of the military and specialized military units within the military used to repress and control the population (e.g., Syria's 4th Armored Division). Identify government organizations that are involved in observed political arrests and non-combat torture.
        - Groups and organizations that the regime uses to repress outside of the formal military institutions, including: a) any civilian police force with military status (e.g., gendarmerie); b) any independent presidential or royal guard, and (c) any official party militia or paramilitary forces and other specialized units under the command of the Ministry of Interior or Defense or under direct control of the dictator. For example, after a coup attempt in 1958, Haitian dictator François Duvalier, disbanded the army, executed many officers, and created a paramilitary force under his direct control (Nicholls, 1986, 1248).
        - Intelligence agencies.
    - If the regime leader is also a security leader, then code all organizations that are directly controlled by this position as separate organizations. For example, the regime leader/chief executive may also be the Commander of the Military (e.g. Musharraf in Pakistan), and thus all division under the Commander of the Military
    - Do not code each military branch as a separate organization if the branches of the military are controlled by the Defense Ministry or an overall military commander. In this case, code the Defense Ministry or the military high command as the operationally independent organization.
    - For military and security organizations that have regional branches, try to identify whether distinct regional commands are *operationally independent*. If a particular regional branch takes orders from someone outside the branch command structure (e.g. the regime leader, the head of the military or someone in the intelligence services), then code

each regional branch as a distinct organization (i.e. the regional branch is operationally independent from the larger branch structure). If each regional branch appears to be under the defacto control of national branch and takes orders from within the branch structure, then code the national organization and not the separate regional branches. If the coder does not code each regional branch as separate organizations, note that they exist in the regime narrative, and try to cite evidence that their command structure remains within the larger organization.

  - If the regime leader suspends a regional political leader/military commander/police commander and appoints a loyal leader for that regional unit, code this as a separate organization.

- In some countries, the regime leader will use pre-existing regional or ethnic militias as part of the military or security strategy. These militias may at times be allies of the regime and at other times adversaries of the regime. Code pre-existing militias as part of the regime's military/security apparatus only if they have been formerly incoporated into the regime's military structure, which we identify by whether they compromise divisions or branches in the formal military structure with corresponding leadership titles. Do not code them as part of the regime's military if they are only nominal allies for a period of time and work in joint operations with the regime military. If a regional/ethnic militia is incorporated into the formal structure of the regime's military and later defects, code this militia as a separate organization until the date of that defection.

  If the regime leader uses pre-existing militias as part of his military and security forces and gives them formal titles within the goverment (e.g. position in the army or cabinet positions) but these positions overlap or multiple militia leaders retain the same title (e.g. Defense Minister), then code each militia leader (and his militia) as separate organizations. In each case, identify the organization by the militia's name (which may be the name of the militia leader).

- Some military or security organizations may arise during the sample period; some may end during the sample periods; others may merge under a new name. When an organization arises or ends, include it in the list of organizations but only for the calendar years for which it exists on January 1 of the observation year. Years when an organization does not exist can be left blank. Finally, if two (or more) organizations merge under a newly titled organization, treat the new organization name as a separate organization – even it is largely made up of one of the pre-existing organizations. The rise, end, and merger of organizations should be noted in the write-up of the country, with appropriate citations.

- Suggested sources to identify internal security agencies and organizations:
  - For formal cabinet positions, consult the annual editions of the Worldwide Government Directory, Europa World Books, and Africa South of the Sahara.
  - Other data sources: The Military Balance; the Statesman's Yearbook; country Historical Dictionaries; regional surveys (e.g. Middle East Contemporary Surveys); encyclopedias (e.g. Europa Books, Africa South of the Sahara); CIA World Factbook; .
  - For paramilitary groups see The Military Balance and the new data set on progovernment militias: `http://www.sowi.uni-mannheim.de/militias/`
  - For Intelligence agencies, see the Global Security website on intelligence: `http://www.globalsecurity.org/intell/index.html`. See also the Federation of

American Scientists (FAS) Index of Intelligence Agencies: `http://www.fas.org/irp/world/index.html`.

- Further sources: human rights reports from the U.S. State Department and Amnesty International; biographical dictionaries; OFAC Sanctions Program reports from the U.S. Department of the Treasury; news and wire service reports
- LexisNexus; regional news sources such as Africa Confidential, the West Africa Newsletter, Maghreb Confidential, and the West Indian Newsletter; case study literature in books and journals.
- Wikipedia may be used to identify further sources but reference to Wikipedia alone is NOT sufficient evidence for the data base.

- Once identified, mark the names of these organizations in the excel file under the variables for each organization identified: `security_org1`, `security_org2`, and so on. Add as many columns as necessary. For each organization, list the source of information and the date retrieved: `security_org1_source`, `security_org2_source`, etc.; and `security_org1_date`, `security_org2_date`.

4. Identify the ministers of defense and interior as of January 1st for all the years included in the data set. Write the names under the variables `minister_interior` and `minister_defense`. Identify the **head** or chief of each of the security institutions and organizations on January 1st for each year covered. Write their names under the variables `head_org1`, `head_org2`, etc. Note that the numbers of the variables: `security_orgX` and `head_orgX` must match; that is, the head of the `security_org1` must be specified under `head_org1`. For each security head, list the source of information and the date retrieved: `head_org1_source`, `head_org2_source`, etc.; and `head_org1_date`, `head_org2_date`.

5. Concerning the military, find information not only about the Defense Minister, and the heads of the different military branches and units, but also to answer to the following question: Is there a commander in chief of all of the armed forces? Record this information in the variable `military_commander`: enter zero for 'NO' and one for 'YES'. If yes, then enter his name in the variable `military_commander_head`, with corresponding source variables.

6. For many organization leaders, you will only find information to confirm that an individual is the leader of the organization in particular years (i.e. not all years). Only record information for which you have a source on the date. For example, if your source says that individual X is the leader of organization Y in 1992 and another source that indicates that X is Y's leader in 1998, then record this information for those years only. If you have a strong suspicion that individual X was the leader of organization in the intervening years (e.g. 1993-1997), color code the blank excel cell GREEN to indicate that the best guess for this missing data is simply to extrapolate from 1992 to 1998. If you have confirmation from a source that X was not the leader of Y for entire intervening years but you do not have information on which years exactly, color code the missing excel cells with RED.

7. For each individual in (4), code the response to the following question: Is the head or chief a **family relative** of the incumbent ruler?

- If the head is a direct relative, indicate, if possible, what kind of relative he is: Brother, son, uncle, father, cousin, etc. To include this in the data set create a new string variable named `familyr_orgX` (and `familyr_minister_defense` and `familyr_minister_interior`).

- If the head is an indirect relative, indicate, if possible, what kind of familiar link he has with the dictator: brother in-law, step brother, etc.? Enter this type of relation in the `familyr_orgX` variables. Being a member of the same tribe or clan does not qualify as an indirect relative; we need evidence of personal family relations through marriage or direct blood lines.
- Create a variable named `family_orgX` (and `family_minister_defense` and `family_minister_interior`), which take one three values: 2 if the head is a direct familiar relative, 1 if he is an indirect relative, and 0 if the answer is no. If no information could be found, code the case as missing value, -999. Again, these variables must match the numbers of variables `head_orgX`, so `family_org1` must indicate if `head_org1` has blood ties with the dictator.
- If you cannot find information to confirm that regime leader is not a family relative of the organization head, then treat this as missing information (-999). However, if from reading the case study literature you think it is likely that the regime leader has no family relatives in position as security or military leaders, then note this in your write-up of the country.

8. Finally, use the politically relevant coding of **ethnic** groups from Wimmer, Cederman and Min (2009) to code the following information:
   - Identify the ethnic group of the dictator and mark it in the the variable `leader_ethnicgroup`. If the leader of the regime (or an organizational leader) has a split ethnic identity, choose the dominant/large group of the two. Record information on the regime leader's split ethnic identity in the country write-up as well.
   - Then answer the following: Does the regime ruler belong to a politically relevant ethnic group? Create a new variable named `leader_ethnic` coded 1 if the answer to the question above is 'YES' and 0 if the answer is 'NO'.
   - If the regime leader *belongs* to a politically relevant ethnic group, then identify the ethnic group of the heads of security forces and organizations and mark it in the variable `head_ethnicgroupX`
   - Answer the following question for each head: Does he belong to the same ethnic group than the leader? Create a variable for each head named `head_ethnicX` coded 1 if the answer to the question above is 'YES', and 0 if the answer is 'NO'. Again missing cases with no information should be coded as missing. Also, remember that the numbers of this variable must match the other 'head' variables. So, `head_ethnic1` must refer to the leader identified in `head_org1`. If a source indicates that an individual in the data base is a family relative of the regime leader, we use this information (and source) to assume that the individual is also a member of the same politically relevant ethnic group.
   - If the regime leader *does not belong* to a politically relevant ethnic group or no politically relevant minority group is ruling, then enter `No PREG` for no politically ethnic group for the variable `head_ethnicgroupX`. This means that if there are no politically relevant ethnic groups, the coder does not need to identify the ethnicity of head of the security organization.

To summarize, the data base (excel sheet) should contain the following information. `(sources)` indicates that the data base should contain documentation of sources for these variables. Be sure to keep track of all sources so that they can be included in a reference bibliography.

- **Country** name
- **Year**
- **COW** code
- **Leader** name
- Security/Military **Organizations** `(sources)`
  list names of each organization
- Security/Military **Heads** `(sources)`
  list names of each head of each organization
- **Family Relative** `(sources)`
  record specific family relationship for each head
- **Family**
  code relative for each head
- **Ethnic Group** `(sources)`
  record ethnic group for each leader and head
- **Ethnic**
  code politically relevant ethnic tie

Country write-up

After completing the data base entries and the research, please write a 2-4 page summary of your results in which you: (1) briefly describe the organizational structure of the military and security organizations; (2) detail any problematic or difficult coding decisions you made; (3) describe any organizational changes such as the creation of new organizations, the end of existing organizations, and the merger of existing organizations; (4) provide citations or sources to indicate why you coded particular organizations as *operationally independent*.

Bibliographic References

In the Excel worksheet, identify sources by the last name of the author and the last two digits of the publication year (e.g. `Huntington91` or `AmnestyInternational98`). Create a bibtex file which contains the full bibiographic reference information.

Table A-2: Yemen Security Ties

1990	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1991	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1992	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1993	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1994	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1995	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1996	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1997	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1998	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
1999	Republican Guard	Ali Saleh al-Ahmar	F	Presidential Guard	Mahdi Maqwallah	NF
2000	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2001	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2002	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2003	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2004	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2005	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2006	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2007	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2008	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2009	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2010	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2011	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
2012	Republican Guard	Ahmed Saleh	F	Presidential Guard	Tariq Mohammed Abdullah Saleh	F
1990	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1991	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1992	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1993	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1994	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1995	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1996	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1997	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1998	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
1999	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mohammed Ali Muhsin	F
2000	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2001	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2002	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2003	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2004	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2005	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2006	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2007	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2008	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2009	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2010	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2011	NW Commander	Ali Muhsin al-Ahmar	F	Southern Commander	Mahdi Maqwallah	NF
2012				Southern Commander	Mahdi Maqwallah	NF
1990	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1991	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1992	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1993	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1994	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1995	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1996	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1997	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1998	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
1999	SE Commander	Mohammed Ismail al-Qadhi	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2000	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2001	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2002	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2003	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2004	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2005	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2006	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2007	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2008	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2009	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2010	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2011	SE Commander	Mohammed Ali Muhsin	F	Ta'izz Commander	Abdullah al-Qadhi	NF
2012				Ta'izz Commander	Abdullah al-Qadhi	NF

Table A-3: Yemen Security Ties

1990						
1991						
1992	Political Security Org	Ghalib Ghamish	NF			
1993	Political Security Org	Ghalib Ghamish	NF			
1994	Political Security Org	Ghalib Ghamish	NF			
1995	Political Security Org	Ghalib Ghamish	NF			
1996	Political Security Org	Ghalib Ghamish	NF			
1997	Political Security Org	Ghalib Ghamish	NF			
1998	Political Security Org	Ghalib Ghamish	NF			
1999	Political Security Org	Ghalib Ghamish	NF			
2000	Political Security Org	Ghalib Ghamish	NF			
2001	Political Security Org	Ghalib Ghamish	NF			
2002	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2003	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2004	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2005	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2006	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2007	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2008	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2009	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2010	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2011	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
2012	Political Security Org	Ghalib Ghamish	NF	National Security Bureau	Ammar Mohammed Saleh	F
1990	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1991	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1992	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1993	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1994	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1995	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1996	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1997	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1998	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
1999	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
2000	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Mohammed Abdullah Saleh	F
2001	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2002	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2003	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2004	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2005	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2006	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2007	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2008	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2009	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2010	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2011	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F
2012	Air Force	Mohammed Saleh al-Ahmar	F	Central Security Forces	Yahya Saleh	F