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When the chips are down: Linking military autonomy and regime survival

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Abstract

This study argues that the military is the key actor in ensuring the survival of non-democratic regimes in cases of anti-regime mass mobilisation by exerting potentially lethal violence. Following a principal-agent approach it suggests that the likelihood of military loyalty in such cases is a result of the military's autonomy from the regime and the effectiveness of the regime's strategies to tie the military to its own survival. It therefore examines the impact of group incentive based regime strategies on military loyalty. Those strategies comprise of ascriptive recruitment into the military, institutional competition between branches of the security apparatus, and identitarian ties between regime and military, including ethnic, religious, and tribal affiliations. In terms of methodology, the paper challenges the prevalence of small-N studies in the field and employs statistical analysis to determine more generalisable findings. Its investigation period spans from the end of the Cold War up to the most recent events of the Arab Spring in 2011.

Keywords

military autonomy, military loyalty, revolution, mass protest, regime survival, regime violence, autocracy

Prior note: British English is being employed. Quotations or software commands based on other varieties remain unchanged without indication.

Extent of the study: 33.092 words.

Abstract

Tato práce zastává názor, že v případě protirežimní masové mobilizace je klíčovým hráčem pro zajištění přežití nedemokratických režimů armáda uplatňující potenciálně smrtelné násilí. V souladu s „principal-agent“ přístupem pak tato studie dále naznačuje, že pravděpodobnost vojenské loajálnosti v takových situacích závisí především na autonomii armády a na schopnosti režimu navázat armádu na své vlastní přežití. Práce proto zkoumá dopad strategií režimu, které se zabývají skupinovými motivacemi na zajištění loajálnosti armády. Pod tyto strategie spadají například askriptivní vojenské nábor, institucionální konkurence mezi odbory bezpečnostního aparátu nebo identitární vazby mezi režimem a armádou, jež zahrnují etnické, náboženské a kmenové afiliace. Co se týče metodologie, tato práce se snaží odvrátit od převážné většiny studií v tomto oboru, jejichž charakteristikou je především malý výzkumný vzorek, a využívá statistické metody, aby se dopátrala k zobecnitelnějším výsledkům. Výzkum se zabývá obdobím od počátku studené války až po nejnovější události arabského jara v roce 2011.

Klíčová slova

Nezávislost armády, loajálnost armády, revoluce, masový protest, přežití režimu, režimní násilí, autokracie

Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.
2. The author hereby declares that all the sources and literature used have been properly cited.
3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague, 28th of July 2017

Fabian Mayer

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Abbreviations

AAPD	-	Arab Awakening Protests Dataset
ELF	-	Ethnolinguistic Fractionalization Index
EPR	-	Ethnic Power Relations Dataset
GNAD	-	Global Nonviolent Action Database
HIK	-	Heidelberger Institut für Internationale Konfliktforschung / Heidelberg Institute for International Conflict Research
MAD	-	Military Autonomy Dataset
MAR	-	Minorities at Risk Dataset
MB	-	The Military Balance (IISS)
MENA	-	Middle East and North Africa
MRD	-	Military Recruitment Dataset
MSCDMV	-	Military Structure, Civil Disobedience, and Military Violence 1972-2012 Dataset
NAVCO	-	Nonviolent and Violent Campaigns and Outcomes dataset
NCO	-	Non-commissioned officer
NGO	-	Non-government organisation
PGM	-	Pro-government militia
PRM	-	Political Roles of the Military Dataset
SIPRI	-	Stockholm International Peace Research Institute Military Expenditure Database 1949-2016
WBD	-	World Borders Dataset

1. Introduction

1.1 Relevance of the topic: Military decision-making as key to revolutionary success

“But support from a preponderance of the armed forces is a necessary condition for revolutionary success.” (Barany 2016: 5)

Revolutionaries throughout history had to face an inconvenient truth: since the introduction of standing armies equipped with firearms, uprisings aiming to overthrow the government hardly, if ever¹, managed to succeed without the support or at least the connivance of a significant portion of the state’s military². (Barany 2016: 5-6) As indicated in this study’s title, for incumbent governments, especially those with a non-democratic background, the use of the armed forces to crush protests against its rule is comparable to a joker in a card game that is only available to one of two players. But the card exhibits a special and very characteristic feature: it might well trump opponents - yet might also backfire and make the player lose the whole game.

Recent experience with the behaviour of militaries during the Arab Spring illustrates this metaphor. The turn of the year 2010/2011 saw a highly unusual phenomenon in several countries of the Middle East and North Africa: widespread anti-regime protests beyond the scope of civil policing. Such occasions are rare in authoritarian regimes in general (Stephan and Chenoweth 2008) and even less common in this particular region, which until recently was dominated by regimes which already persisted for decades with only minor challenges to their existence (Lüders 2011; Bellin 2004: 142). However, within a few months the very existence of many of these long-standing regimes and their often decades-long serving leaders was threatened by public demands for regime change. In this situation, the importance of the metaphorical joker was proven: the pivotal role of the armed forces in ensuring regime survival in critical situations. In some countries like Syria (Leenders 2015; Hinnebusch 2012) or Bahrain (Louer 2013), in the case of the latter with support of Saudi Arabia, the military stood by the regime in the early days of the uprisings

¹ Barany (2016: 5-6) claims that actually no revolution at all succeeded without the support or the connivance of a significant portion of the incumbent government’s armed forces but due to the widely disputed character of all those entities (revolution, armed forces, significant portion, success) this maximalist claim might be slightly over the top.

² A comprehensive definition of the phenomenon will be conducted during the course of the study. Generally speaking, the term “military” is used to describe the entirety of the regular military branches of a state (Barany 2016: 6).

and was willing to obey orders to exert potentially lethal violence against protesters to protect the incumbent regime elites. (Anderson 2011) However, in other cases the two-edged nature of the joker became visible when the armed forces of Tunisia and Egypt quickly abandoned their political masters and by doing so enforced or at least allowed for their loss of power. (Anderson 2011; Steiman 2012; Townsend 2015) Even though the Arab Spring is the most recent and probably publicly best known example of the importance of military decision-making for regime-survival, similar examples are widespread both geographically and over time. Amongst a variety of cases in Latin America, Southeast Asia, and Sub-Saharan Africa, the regime changes in the Soviet sphere of influence 1989/1990, the Colour Revolutions in the post-Soviet space in the 2000s, the overturn of the Shah in Iran 1979, or the Tiananmen Square massacre in China 1989 provide for possible examples with diverging outcomes. (Barany 2016)

Turning back to the analytic issue, it should be noted that even though both the short- and long-term results of the Arab Spring and the other uprisings mentioned above were quite diverse across the board, two points were proven: first, the military played a pivotal role as the last line of defence against widespread popular anti-regime protests; and second, the military's willingness to exercise such orders could not be taken for granted easily. Accordingly, the most relevant question turns out to be: *Which factors influenced the armed forces' decision to stay loyal or to defect from the regime?*

The aim of this study is to contribute to this question by following a military-centric approach focussing on the link between military autonomy and regime survival. Given the different configurations of links between the military and the regime in democracies and non-democratic regimes, this study will limit itself to the examination of the latter. Based on a principal-agent model it is argued that even non-democratic regimes are no "black boxes" but are composed of interlinked actors with a certain institutional autonomy which regulates their respective room for manoeuvre. The military as one of those actors is therefore not a mere tool of the regime elites circle but enjoys a certain degree of autonomy in its decision-making which is determined by a variety of factors. The main hypothesis of the study is that the more reduced the institutional autonomy of the military is, the more likely it will come down on the side of the regime elites in cases of critical anti-regime protests to ensure regime survival.

While many conceptual papers have aimed to establish theoretical links between incentives and measures used by regimes towards the goal of limiting their militaries' autonomy, they tend to be limited to a small set of cases and often prove to be

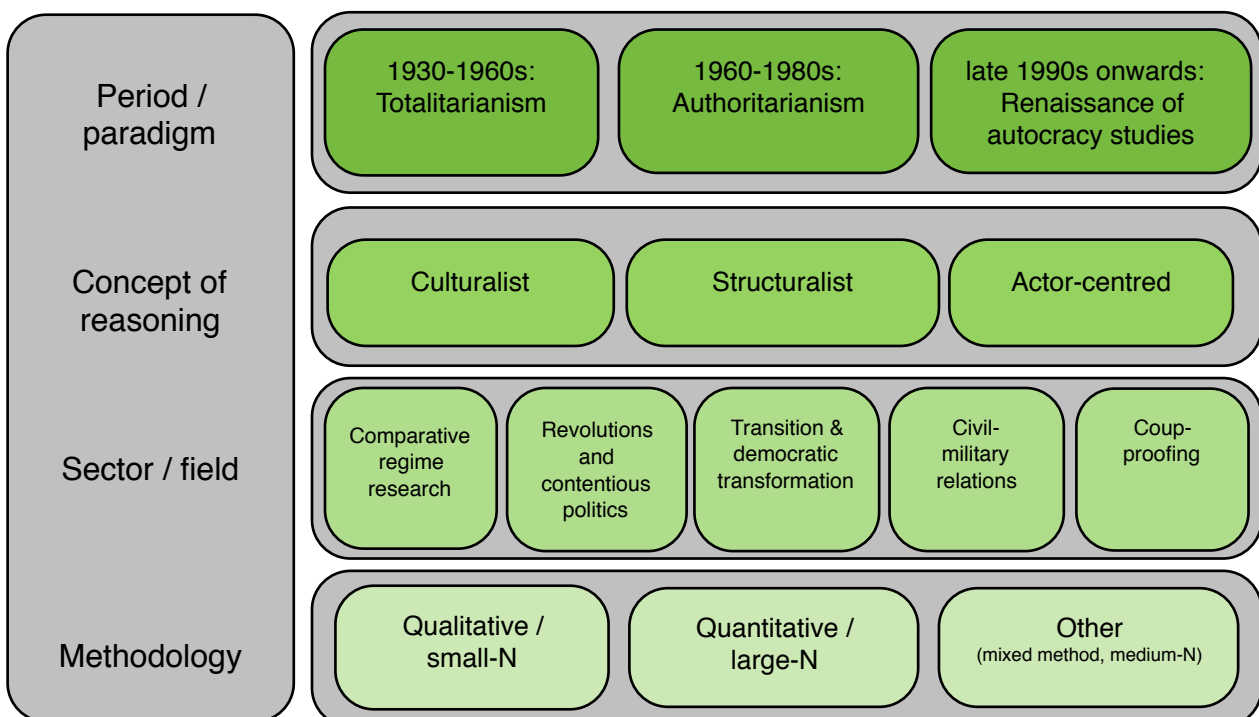
inconclusive or even contradictory. (Kühn 2016) Having assessed the general arguments of different research strings, this paper will follow the approach of regarding military-centric factors such as identitarian ties with the regime, institutional competition within the security sector, and ascriptive military recruitment patterns as being most crucial and even decisive. Instead of adding another qualitative case study to the sizeable collection already available, this paper will try to generate generalisable findings by assessing a larger set of cases in a quantitative manner as mere theoretical reasoning without a proper quantitative analysis supporting or rejecting hypotheses is seen as a hampering factor for the further analysis of military decision-making. Therefore, following the numerically negligible tradition of quantitative studies in the field (Tofalvi 2013; Koren 2014), this paper will employ a statistical analysis of the link between the independent variable military autonomy and the regime measures trying to limit it on the one hand and the dependent variable military decision-making of those militaries during anti-regime mass protests on the other hand. The investigation period is limited by the end of the Cold War and the events of the Arab Spring until the end of 2011 respectively. These choices will be discussed extensively during the case selection section.

In order to achieve the goal outlined above, the study will proceed as follows: succeeding this introduction, a comprehensive literature review will provide for an overview of the current state of the academic research on military decision-making and concepts related to the topic such as coup-proofing and other regime survival strategies. Based on this review, research gaps will be identified and appropriate research questions will be developed. The third section will be devoted to the development of a theoretical framework linking military autonomy and military loyalty and the regime strategies manipulating it as well as the formulation of testable hypotheses. Moreover, this part will see a discussion of key concepts. The fourth section will deal with case selection criteria, the investigation period, the operationalisation of variables and the exploration of available data sources and an assessment of their relative strengths and weaknesses in order to compile a dataset for statistical analysis. The fifth section will deal with the statistical model, its configurations, the actual empirical statistical analysis and the discussion of its results. The last chapter is devoted to limitations of the study and potential avenues for future research provides a conclusion. Bibliography and annexes form the end of this paper.

1.2 Mapping the field: literature review and research gap

In this section, a comprehensive literature review will present the current state of research in the field of the military's relevance for regime change or regime survival. Subfields covered are the role of the military in non-democratic regimes as part of the repressive apparatus, military autonomy and military decision-making, and finally the impact of specific military structures and regime incentive strategies to tie the military to its survival. Questions of particular interests are the perception of the military as a “black box”, its role within the regime, and its links to the regime elites. (Kühn 2016: 360)

Starting this section, it is vital to be aware of the major changes in the research agenda and the research intensity in the field over the last couple of decades. In order to structure this attempt to map the field, a short temporal overview of the succession of central paradigms will be employed, turning to the three central concepts of reasoning (culturalist, structuralist, and actor-centred approaches), and exploring the different sectors employing those in closer detail before closing with a remark on the methodological approaches used in the field. Even though concepts are often overlapping, this graph is meant to visualise the general approach followed:



Graph No. 1: Mapping the field: paradigms, concepts, sectors, and approaches.
 Source: Own illustration.

1.2.1 Temporal approach

After the second world war, several influential schools of military research were established, even though the military as such, its structures, and its behaviour tended to be widely understudied as a subject in its own right. (Barany 2016: 2-3) In the majority of research dealing with the military and its behaviour the focus was not on its capacities as an independent actor. (Kühn 2016: 351-54) The periods presented here are ideal types and temporal overlaps are not the exception but the rule and exhibit the diversity of the research community. (Art 2012) However, some general trends over time can be identified. Following Gerschewski's (2013) seminal paper on the pillars of autocratic stability, this temporal approach divides the research into non-democratic regimes and their militaries into three main phases: the totalitarian paradigm (1930s-1960s), the rise of authoritarianism (1960s-1980s), and the renaissance of autocracy studies (late 1990s-today).

The totalitarian paradigm (1930s-1960s)

Early works in the comparative regime research after 1945 by authors like Hannah Arendt or Carl J. Friedrich can be best associated with the research into totalitarian states and tended to disregard military autonomy at large. (Vollnhals 2006; Merkel 2016) Influential studies such as those by Friedrich and Brzezinski regarded undisputed control over the military as one key aspect of the totalitarian state (Gerschewski 2013: 15) but did not elaborate on the internal structures of the military, its autonomy or decision-making processes. This perception shaped for a long time the scientific perception of non-democratic regimes as monolithic blocks, the infamous *black boxes*, and thereby neglected the complex relationships between the different entities within such regimes.

The rise of authoritarianism (1960s-1980s)

A second stage in the exploration of the military as an actor took place in the aftermath of Juan Linz' seminal paper on the Franco regime in Spain and the following focus of the discipline on authoritarian rather than totalitarian regimes. (Gerschewski 2013: 15; Linz 1964) Especially with regard to non-democratic regimes in Southern Europe, South America, and Southeast Asia, the role of the military as an independent actor was widely acknowledged, even though the majority of research was rather interested in generals assuming power themselves instead of the military's role during anti-regime mass protests. (Linz 2009; Kühn 2016: 354) A sub-string within this paradigm centred around the

comparatively low temporal durability of military regimes in comparison to other types of authoritarian rule and asked for military-specific reasons for this phenomenon. (Geddes 1999) This statistical anomaly sparked off increased research in a second major sector, namely transition and democratisation studies, as military regimes seemed to be relatively easy “targets” for democratisation. (Kühn 2016: 354) Unfortunately, the interest in the role of the military in those studies was merely limited to its function as a loyal instrument of the regime for the repression of its population. However, single innovative studies proved the importance of the military, even though still seen as a black box, as an actor independent from the regime which proved to be key for transition attempts by withholding support for the incumbent regime and accepting the former opposition as legitimate new ruler. (Kühn 2016: 354; O'Donnell and Schmitter 1991) Amongst the pre-2000s studies, this perception probably comes closest to the current perception of the military in the academic community and the standpoint taken in this study.

A fourth research string proved to be highly influential as it focussed on revolutions and later on turned towards the phenomenon of so-called contentious politics. (Kühn 2016: 353-54; Barany 2016: 8-10) In contrast to former studies, this heterogenous group of researchers mostly examined the social reasons for revolutions and civil uprisings and the characteristics of social movements as such. They are therefore important for this study in terms of the control variables concerning the social movement and to a certain degree with regard to the principal-agent theorem. Prominent examples are Tilly's (1973) book linking modernisation and the risk of revolutionary uprisings and Skocpol's (1979) study on the structural explanations for revolutions. Skocpol, even though not explicitly drawing on the military as an independent actor, hints on the question of the potential independence of fundamental state organisations from, as she frames it, “direct dominant-class control” (Skocpol 1979: 29-30). Her basic claim is therefore that the state structures are essentially agents of some kind of principal. In non-democratic regimes, regime elites and their winning coalition will typically be this principal.

A subgroup of this string of social movement research is formed by Gene Sharp (1973) and her landmark study on nonviolent uprisings. Especially her claim that nonviolent campaigns tend to be more successful in achieving their goals and in general lead to more stable new regimes sparked off a whole new research tradition of which Chenoweth and Stephan (2008) with their Nonviolent and Violent Campaigns and Outcomes (NAVCO) datasets are probably the most influential adepts. For this study, their claim about the link between peacefulness of the social movement and success will be modified as case selection criterion. However, focussing on reasons for uprisings and the characteristics of

the social movement, this set of studies remains relatively silent about decision-making processes of the military. (Kühn 2016: 353-54)

The renaissance of autocracy studies (late 1990s-today)

Generally speaking, during the next decade relatively few innovations took place in the research on non-democratic regimes and their militaries. (Gerschewski 2013: 13-14) According to Gerschewski (2013: 13-14), this relative standstill changed with the diagnosed end of the third wave of democratisation (Huntington 1993) and increasingly widespread perceptions of a democratic rollback (Diamond 2008). Consequently, following a seminal paper by Geddes (1999) summarising the deficient state of affairs in researching authoritarian regimes and their militaries, a “renaissance of autocracy studies” (Gerschewski 2013: 16-18) occurred from the late 1990s onwards and lasted until today. While the focus of earlier studies was mostly set on explaining autocratic persistence (Bellin 2004; Geddes 1999), the recent events of the Arab Spring boosted both quantity and quality of studies (Kühn 2016: 351-52) and made many authors reconsider or update earlier work. (Bellin 2012; Wahman, Teorell, and Hadenius 2013) This last period is characterised by the lack of a comprehensive research paradigm, even though most of the papers follow either a structuralist or an actor-centred approach. This lack of an overarching research paradigm allows for a variety of subjects being examined through different theoretical and methodological lenses and therefore was probably the most productive one in terms of papers being relevant to this study having been published.

1.2.2 Sectoral approach and concepts of reasoning

Having provided a basic temporal overview of the most important research paradigms and schools this paper touches upon, this review will focus especially on the last period from the late 1990s onwards and assess the three basic concepts of reasoning predominant in the field and the variety of sectoral approaches which developed across time.

According to Kühn (2016: 353-54), four major strings of research touching upon military decision-making during public unrest can be identified: comparative research into authoritarian regimes, research into revolutions and contentious politics, transition and democratisation studies, and civil-military relations. As basic information on the first three fields were already given above, this section will abstain from repeating their respective research agendas and focus on relevant individual papers and major trends only.

Furthermore, in addition to the above-mentioned four research approaches, this study will employ the extensive literature on coup-proofing, even though often seen as a subfield of either comparative regime research or civil-military relationships, as a research string in its own right.

Furthermore, in this section, individual arguments on regime incentive structures for the military are being discussed under the appropriate approaches. As a prior note, it should be taken into account that the vast majority of studies discussed here are qualitative papers with a small-N focus.

1.2.2.1 Culturalist explanations of military behaviour

Culturalist explanations for military decision-making form a minority within the field and are characterised by a focus on cultural and normative, thereby non-rational, factors which are internalised by the military through socialisation and military doctrines. (Kühn 2016: 357-58) Within the sub-field, three schools of thought are dominant: the normative self-perception of the military, the normative mission of the military, and international norms.

In recent years, a set of authors focussed on the normative self-perception of the military. They argued that the behaviour of the military during a regime crisis is heavily influenced by its self-perception: where the military perceives its role as being the defender of the regime, it will more willingly stay loyal and obey orders to exert lethal violence than in cases in which it sees itself as the non-politicised guardian of the state, the national interest, or the population. (Kühn 2016: 358; Bellin 2012; Pion-Berlin, Esparza, and Grisham 2014; Barany 2011: 31-32)

The second school of thought is closely linked to the first but puts further emphasis on the codified mission of the military. They claim that militaries championing territorial defence against external enemies of the state exhibit a lower likelihood of intervening on behalf of the regime than such militaries being regularly engaged with issues of internal security or policing tasks.³ (Pion-Berlin and Trinkunas 2010; Pion-Berlin, Esparza, and Grisham 2014) Some authors claim the appropriateness of the military's mission to be another critical issue, putting forward the contrasting opinion that militaries which have to take over non-typical tasks such as providing internal security or acting as state-sponsored labour forces on a regular basis feel their *raison d'être* being violated and therefore lose respect and

³ Pion-Berlin and Trinkunas (2010) make this claim for defect presidential democracies in South America and are confident of the argument being applicable to consolidated authoritarian regimes. (Kühn 2016: 358)

loyalty towards the regime, which makes them more prone to disloyalty. (Barany 2016: 32-33)

The last and numerically negligible string argues that the internalisation of internationally accepted norms by the military and especially by the officer corps, for example by exposure to foreign military advice or training, will reduce the likelihood of violent crackdowns by the military and reduce its loyalty if asked to perform those. (Barany 2016: 38-39) However, empirical evidence of the claim's importance is scarce. (Barany 2016: 172)

The vast majority of culturalist approaches is based upon qualitative case studies, which, even though they employ plausible models, quite often lack methodological rigour. (Kühn 2016: 358) Moreover, hardly any verification approaches through statistical analysis exist. This is most probably due to the lack of data in terms of access to reliable information on the self-perception of militaries in non-democratic regimes and the difficulties in quantifying the often ambiguous concepts. (Kühn 2016: 358)

1.2.2.2 Structuralist explanations of military behaviour

In contrast to culturalist explanations, structuralist explanations and actor-centred models share basic assumptions about the rationality of actors. The military as an entity has institutional preferences and acts opportunistically according to its best interest. Given the research agenda of this paper, it should be mentioned that the room for manoeuvre to act in such fashion is an elementary part of military autonomy.

Structuralist approaches explain the military's behaviour according to macro-structural variables but are significantly less pronounced in today's research agenda than actor-centred models. (Kühn 2016: 355) The focus of structuralist explanations is on the development of revolutionary tendencies through macro-phenomena in the demographic (youth bulges), economic (crises), or social sector (class conflicts). (Kühn 2016: 355) It can furthermore add some explanatory value on the actual behaviour of the military in crises based on assumptions of macro-structural cleavages in society but usually focusses on the international dimension of anti-regime uprisings and military behaviour. Therefore, regional diffusion processes, as for example in the MENA region during the Arab Spring, are a major area of interests. (Barany 2016: 38-39) As Owen (2016) states, transnational polarisation might well change the threats and chance-of-success perceptions of both regime and opposition. The military as an entity will therefore carefully take into account the actions taken by other regimes in the region and their outcomes. However, the effect of

those calculations is certainly not deterministic - the same news from a neighbouring country might trigger completely different reactions in militaries across the region.

Another question of interest for the military's behaviour are international alliances or enmities. The less pronounced version of this is the risk of losing international military aid if the military is seen as violating human rights or giving up its officially proclaimed neutrality in political questions.⁴ (Bellin 2004: 144; 2012; Nepstad 2013) The second question concerns anticipated or announced external support for either the regime or the opposition, which might alter the military's decision-making process. External support for the regime might hamper the military from switching sides due the expected high costs and remain loyal to the regime instead while an expected external intervention on behalf of the opposition might ease the decision of the generals to defect. (Kühn 2016: 355) Examples for such a behaviour can easily be found in the Soviet interventions in the 1950s and 1960s into the countries of the Warsaw Pact. (Mählert 2006: 72-76; Barany 2011: 30-31)

1.2.2.3 Actor-centred explanations of military behaviour

Like structuralist explanations, actor-centred explanations stress the rationality of the actors but try to account for the specific and not pre-determined actions of the three most relevant parties to an uprising: the regime elites, the protesters, and the military. (Kühn 2016: 355-56) This string of explanations is the one which puts most emphasis on the military's autonomy and its space of manoeuvre as an actor independent from the regime. Within this section falls the majority of literature covering coup-proofing and civil-military relations. In order to proceed in a logical way and avoid redundancies, a short overview of these two sectors will be provided here while the relevant literature will be discussed in the sections on individual arguments tying regime and military together.

Civil-military relations are a wide field of research but in their majority predominantly focussed on democracies. Attention will therefore primarily been given to a relatively small set of representative studies focussing on authoritarian systems or defect democracies. As many papers dealing with civil-military relations tend to be related to coups and coup-

⁴ In contrast to the majority of researchers, Savage (2017) claims that external military aid meant to tie a country's military to human rights and make it more receptive to democratic values could easily produce unexpected counter effects when the military feels threatened concerning its future role after a potential regime change. In such cases, repression through a sizeable military might even increase and hamper the spread of democratic values and transition attempts.

proofing strategies (Croissant 2013; Svolik 2013), the majority of research intersecting both areas will be presented in the latter section. In essence, civil-military relations were established as an academic discipline following the publication of Samuel Huntington's seminal book *The Soldier and the State* (1957) and deal with the relations between the military and the whole of civil society in general and the civil leadership of the state in particular. The research paradigm tends to be shaped by the assumption that civilian control over the military is the preferable state of affairs in comparison to a dominance of the military over the state. (Feaver 2003) Therefore, the field empirically deals with questions of establishing and maintaining civil control over the military and conflicts between these agencies based on their different sets of ethics, principles, norms, and interests. For this study, those questions turn virulent under the increased tension of anti-regime mass protests - how do control mechanisms need to be configured to ensure regime control over the military even in situations of severe crisis?

This question has also been tackled by academics focussing on coup-proofing, even though their main research interest tended to be not the reactions of the military to anti-regime mass protests but the regime's strategies to avoid original coups d'état. Since the army empirically proved to be the key player in coups d'état, regimes developed measures to prevent such actions being taken. To quote:

"If the essence of a coup is the seizure of the state by a small group within the state apparatus, the essence of coup-proofing is the creation of structures that minimize the possibilities of small groups leveraging the system to such ends. I define "coup-proofing" as the set of actions a regime takes to prevent a military coup." (Quinlivan 1999: 133)

An initial list of measures provided by Quinlivan in his influential paper on the topic included the exploitation of family, ethnic, and religious loyalties, the creation of parallel armed forces ("counterbalancing") with diverging chains of command, the fostering of expertness in the military, and appropriate financing. (Quinlivan 1999: 133) Many of these strategies listed here were then further developed by individual scholars or clusters of academics (amongst others Quinlivan 1999; Belkin and Schofer 2003; Bellin 2004; Belkin and Schofer 2005; McLauchlin 2010; Hinnebusch 2012; Powell 2012; Croissant 2013; Gaub 2013; Louer 2013; Makara 2013; Nepstad 2013; Albrecht 2015a, 2015b; Böhmelt and Pilster 2015; Nassif 2015; Bell 2016; Harkness 2016; Marcum and Brown 2016) and will be examined in detail below.

Turning to central arguments within the actor-centred explanations of military behaviour, Barany (2016: 18-22) identifies professionalisation/institutionalisation vs. patrimonialism, conscription vs. enlistment, and cohesion and esprit de corps. Kühn (2016: 355-57)

employs a similar distinction but adds the importance of the social movement's composition, goals, and conduct. Another string of arguments focusses on economic incentives. (Bellin 2004, 2012) As all of these five factors will play into the empirical analysis, a closer examination is key for their understanding.

Professionalisation/institutionalisation vs. patrimonialism

In the professionalisation/institutionalisation vs. patrimonialism string, which is closely related to the name of Eva Bellin (2004, 2012), the key to the military decision-making processes is its degree of professionalisation. To quote:

“The more institutionalized the security establishment is, the more willing it will be to disengage from power and allow political reform to proceed. The less institutionalized it is, the less amenable it will be to reform.” (Bellin 2004: 145)

For Bellin, professionalisation means a system which is

“rule-governed, predictable, and meritocratic. It has established paths of career advancement and recruitment; promotion is based on performance, not politics; there is a clear delineation between the public and private that forbids predatory behavior vis-a-vis society.” (Bellin 2004: 145)

A patrimonially organised military on the other hand is characterised by cronyism, discipline based on primordial cleavages such as ethnic or religious rivalry amongst groups, and a blurred distinction between the military's public and private mission interlinked with corruption and abuse of power. (Bellin 2004: 145) Also important are the military elites' personal ties to the regime based on such methods, as they increase personal investment in the regime and therefore raise incentives to preserve it. (Bellin 2012: 132) Typical and often-cited cases for the two extreme ends of this spectrum are, as Townsend (2015) shows, Tunisia and Libya, the former with a highly professionalised military and the latter characterised by tribal groups associated with Qaddafi forming the majority of the armed forces. Another possible example might be Syria with its predominance of regime-affiliated Alawites within the officer corps. (Leenders 2015; Lund 2015; Hinnebusch 2012; Holliday 2013a, 2013b) To boil it down to a handy formula: professional armies are a tool of the state while patrimonial army's are a tool of the regime elites.

However, some critique needs to be kept in mind. Barany (2016: 18-19) diagnosed a selection bias within Bellin's argument, based on the fact that highly professionalised armies predominantly tend to exist within liberal democratic states where uprisings against the regime aiming at its overthrow are a rare occasion. Moreover, counterexamples of

highly professionalised armies which were willing to exercise lethal violence on behalf of their regime exist, for example in several former communist countries. (Barany 2016: 19) He therefore claims the military decision-maker's view of the regime's legitimacy to be another crucial variable but fails to provide a comprehensive operationalisation. (Barany 2016: 29-30)

Economic incentives

Another tool for controlling the military is ensuring its fiscal health, even though its relevance is disputed. While Bellin (2004: 144; 2012: 128-29) states that providing the military with the monetary supplies necessary to fulfil its mission is a question of ensuring its capacity⁵ to do so, for example by recruiting sufficient numbers of soldiers and buying equipment, other authors stress the relevance of providing budget increases and other economic advantages as incentives to remain loyal (Steiman 2012; Leon 2014) or stress both (Geddes 2004). Based on this, it should be noted that all regimes, especially non-democratic ones, suffer from a guardianship dilemma: they need to decide whether they establish and fund a strong force which is able to effectively guard them against both external and internal threats but is strong enough to stage a coup against the incumbent regime, too, or whether they prefer a weak military which is unlikely or even unable to stage a successful coup but on the same hand is insufficient to effectively protect them. (McMahon and Slantchev 2015; Kühn 2016: 355)

A typical example of economic incentives would be the Egyptian military under Mubarak; the Egyptian vice versa the Tunisian case also illustrates the consequences of the guardianship dilemma. (Steiman 2012; Anderson 2011; Nepstad 2013) Regardless of the argument, fiscal factors remain an important control variable for every statistical analysis.

Conscription vs. enlistment

Another major school of thought centres its assumptions around the conscription vs. enlistment nexus, based on two major arguments: individual incentives and social distance. Based on a rationalist model, the first group claims that professional soldiers with a long-term career prospect, whose income, promotion perspectives, and pensions are linked to a regime, are more likely to come down on its side to defend their own future. (Tofalvi 2013: 85) Having already invested much into the regime, the costs of defection are

⁵ For example, Bellin claims that, maybe apart from Bahrain, military capacity was sufficient in all countries during the Arab Spring (Bellin 2012: 131) while Nassif (2015: 270-74) doubts this very fact at least for the case of Tunisia.

considerably higher than for a conscript who is being drafted for a couple of months or years but without building his future upon the guarantee of the institutional integrity of the army by the regime. (Tofalvi 2013: 85) Accordingly, conscripts' likelihood to defect or to withhold their support is therefore higher.

The second argument focuses on social distance. First developed in Tilly's (1973) influential article on revolutions, the general assumption is that "[i]nhibitions to the use of coercion are likely to increase when the coercive forces are drawn from (or otherwise attached to) the population to be controlled." (Tilly 1973: 443) Social similarities between the military and the protesters are expected to be higher in cases of conscript armies as compared to professional armies. The social distance is therefore lower and the likelihood of lethal violence decreases. (Barany 2016: 29; examining militias: Stanton 2015: 901)

The empirical evidence regarding this argument is mixed; while being important in the Arab Spring it fails to explain the actions of many communist armies or the Chinese forces in 1989. (Kühn 2016: 357) Possibly a proxy for ideological inclination would help to account for those cases.

The social movement's composition, goals, and conduct

This set of arguments is closely interlinked with the one above and focuses on the military's perception of the social distance between itself and the protesters, the size of the protests, the protesters' general conduct, the compatibility of their goals with the military's institutional interests, and its perception of the regime's legitimacy and the popular support for the uprising. (Barany 2016: 35-36)

Based on the social distance argument, the military's likelihood of cracking down on protests is the lower the more representative for its own social and identitarian structure and the more representative for the general population in socio-economic and identitarian terms the composition of the protesters is. (Kühn 2016: 357) As a rule of thumb, young men of a diverging ethnic background from the majority of the military are more likely to get cracked down upon than protests including children and old people from a variety of backgrounds.⁶ (Barany 2016: 35) No clear correlation could be established between the size of the protests and the decision-making of the military. (Tufekci 2017) It has been argued that large crowds prove the popularity of the movement and undermine the regime's legitimacy in the eyes of the military, but it is also true that there is an established

⁶ During the Ukrainian Orange Revolution in 2004 the organisers of the protests strategically placed young women at the edges of the crowds which were likely to get in touch with riot control forces in order to make them refrain from violence. (Barany 2016: 36)

correlation between the size of the protests and the likelihood of the military being called in, thereby increasing the initial potential for violence. (Barany 2016: 25-26)

Turning to the conduct of protesters, nonviolent protests tend to be more successful in general and decrease the chance of the military cracking down on them.⁷ (Stephan and Chenoweth 2008; Tofalvi 2013: 89-90) It is argued that the inherent violation of the military's mission and logic of functioning, namely to protect the people and to fight armed opponents, is violated in such cases and increases the risk for disloyalty.

Even though it could easily be turned into a question of hen and egg, empirically violent protests are met with counter-violence and through attacking the military its likelihood to remain loyal increases based on its own threat perception. Transferring Earl and Soule's (2006) police-centred explanations for the principal-agent implications of violence and counter-violence, one needs to take into account that even though small-scale violence like throwing stones does not threaten the military as an entity and has theoretically little impact on the decision-making of the generals, the personal threat perceptions of individual soldiers on the spot might easily trigger unintended violence and produce interaction effects which in the long run could narrow the military leaderships' room for manoeuvre. (Earl 2003; McPhail and McCarthy 2004)

Popular support for the protests, besides protest size, and the regime's legitimacy and chance of survival are hard to measure and often remain vague. It is generally assumed that the military is less likely to come down on behalf of a generally detested regime and especially on the side of a regime that in its eyes is likely to lose power. However, as this easily turns into a self-fulfilling prophecy by the military withdrawing its support and letting the regime down, the empirical value of the variable is doubtful. (Barany 2016: 36)

Some researchers also include the past conduct of the army against society in the relations between the military and the protesters. They argue that a history of repression and human rights violations makes it unlikely for the military to switch sides and ties it to the regime due to expected backlashes under a new regime like the withdrawal of impunity for committed crimes. (Barany 2016: 30) Accordingly, some regime might even employ a strategic policy of human rights violations by the military or specific ascriptive units to hamper their defection. (Kraitt 2013; Lefèvre 2013; Leenders 2015)

⁷ However, a notable number of exceptions like Dara'a in 2011 or Tiananmen Square in 1989 prove that this strategy is not universally adaptable. (Barany 2016: 36)

Cohesion and esprit de corps

Cohesion is the essence of the military. If its institutional cohesion is broken up, its very logic of functioning and therefore its existence as an entity is endangered. Accordingly, Barany (2016: 25) emphasises cohesion as the key variable in military decision-making. Several authors examined potential mechanisms of ensuring cohesion and potential risks to it. The first and empirically most robust variable is the existence of ethnic, religious or sectarian, tribal and regional splits within the military or the exploitation of those characteristics by the regime. (Barany 2016: 25) Those so-called ascriptive or identitarian factors are primordial in character and therefore very effective in ensuring long-term commitments to the regime due to the impossibility of individuals to switch those characteristics. A major instrument of exploiting these intra-societal cleavages is the measure of so-called ascriptive recruitment, in which certain ascriptive groups are favourably recruited into the military or the security sector at large. A useful distinction should be made between the favoured numerical incorporation of certain groups into the military and the general exclusion of other ascriptive groups and the preferred recruitment of certain groups within special (elite) units or alternative structures within or outside the regular military.⁸ In his paper on coup-proofing measures, Quinlivan (1999) formulates the hypothesis that the majority of ascriptive recruitment will take place within the regime's "community of trust", meaning the groups which are related to the regime elites through identitarian ties while recruitment outside of this community of trust tends to be lower. This is supported by Johnson (2013) and McLauchlin (2010; McLauchlin and Pearlman 2012) who later argued that group-based incentives and preference structures provide a better guarantee for survival for the regime compared to individual incentives. In cases of conflict, McLauchlin believes individual incentives such as rewards (remuneration, pensions, careers) and punishments to be less effective, as the individual preferences of single soldiers are unknown to the regime and therefore difficult to match. In contrast, group-based incentives, such as being part of the ruling ethnic group, are more stable as they satisfy the relatively well-known preferences of a larger set of soldiers. Those in-group members are unlikely to defect while members of other ethnic groups, the so-called out-group, will probably abandon the regime if they are seriously probed. Examples for such a behaviour can easily be found in the current situation in Syria with the defection rates of

⁸ A well-known example is Syria where Alawite rank and file soldiers were drafted into certain elite units such as the 4th Armoured Division, the Special Forces Regiments or the Republican Guards, making up in between 60-100% (Holliday 2013b: 6-8) respectively compared to their share amongst the general population of about 12% (van Dam 2011). Another prominent example would be Bahrain. (Louer 2013)

Alawite soldiers remaining considerably below those of other ethnic or sectarian groups. (Lund 2015) Similar mechanisms are known to have been employed for tribal or regional affiliations, for example in Libya or Iraq (Townsend 2015; Khan 2007) or in parts of Latin America and Southeast Asia. (Barany 2016: 25) Unfortunately, most of the research focuses on the MENA region, with a small number of papers on Asia (e.g. Croissant 2013), and lacks quantitative backing. (Kühn 2016: 356) Even though ascriptive recruitment tends to be highlighted as one of the most effective ways of tying the military (or parts of it) to the regime, Hendrix and Salehyan (2016: 8-9) pointed out that “regimes with factionalized security forces are likely to use repression sparingly”. They encounter what McLaughlin called out-group difficulties with the cohesion of the military if being deployed against identitarian groups amongst its population which are incorporated into the armed forces. Accordingly, the regime needs to employ tactics of maximising social distance between protesters and military, for example by deploying only non-regional troops or such with a different identitarian background.

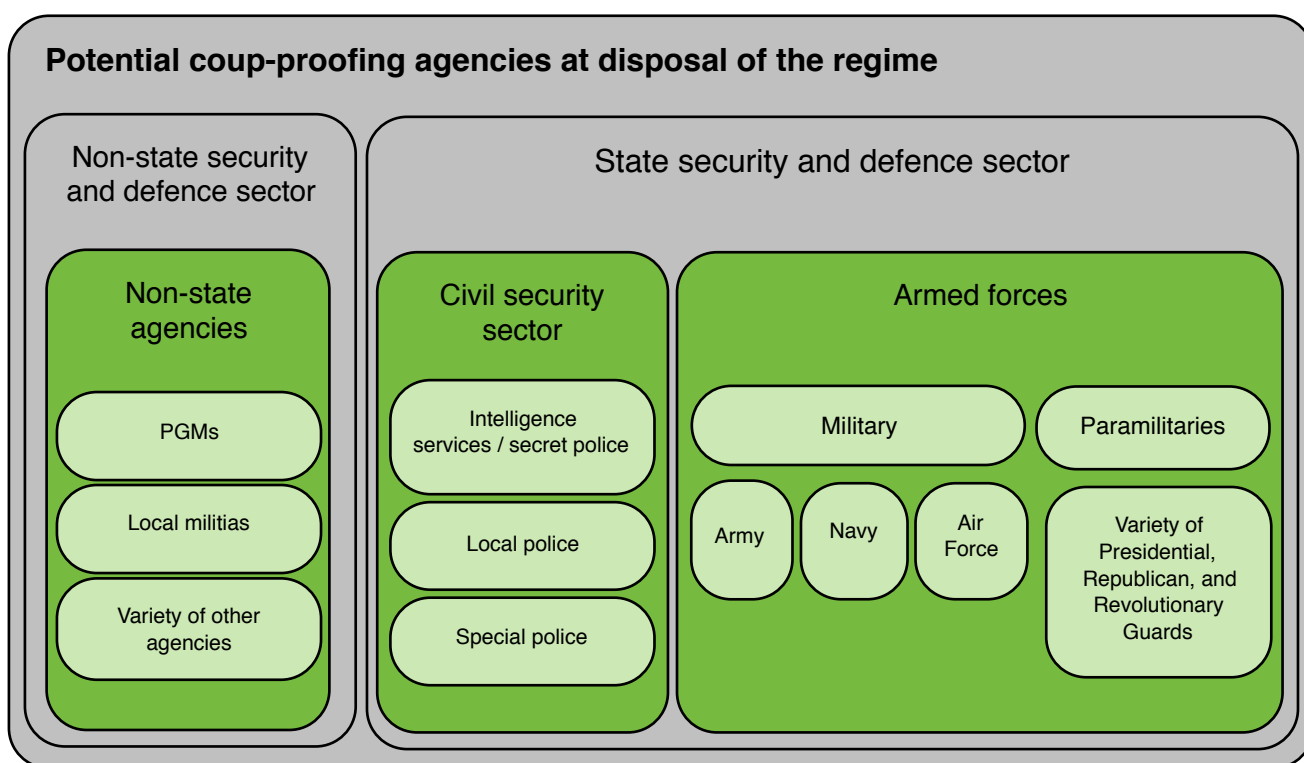
Turning to generational and rank divisions, only a relatively small set of studies deals with those variables so far. Lee’s (2015) work on intra-military dynamics during uprisings in Asia has been highly influential with regard to this string of research. He distinguishes between military winners and losers of the current regime and argues that it is vital which group is larger, better organised, and able to marginalise or co-opt the other one in determining whether or not the military will come down in favour of the regime. Kühn (2016: 356) acknowledges the innovative capacity of the study but highlights that a merely dichotomous variable neglects the possibility of a military coup in which the army seizes power itself. Moreover, such divisions into winners and losers are just not given in each and every case, as Nassif (2015: 270-74) highlights for the case of Tunisia.

Barany (2016: 26-28) proposes a more refined system which highlights generational divisions between senior and junior officers, divisions between officers and NCOs/privates, and sociopolitical divisions amongst military elites. However, the measurement of those variables proves notoriously difficult with both data availability and reliability being questionable. Moreover, intentions, motives, and preferences tend to be difficult to operationalise, as they usually rely on anecdotal evidence.

As another strategy, regimes can create and foster frictions within the armed forces by employing counterbalancing measures. (Quinlivan 1999) Counterbalancing in its very structure means the creation or fostering of a second force as an institutional rival which is

able to counterbalance the regular military and its influence. (Barany 2016: 26-27) By creating praetorian units which are perceived to be absolutely loyal to the regime, two effects are expected to take place: having an absolutely loyal body of in-group units reduces the military's unilateral capacity to "tip the balance" by withholding its support during anti-regime protests, and also allows to discipline units fearing to be replaced or to have to take up a fight in case of supporting the opposition.

As depicted in Graph No. 2, counterbalancing comes in four versions: within the regular military, paramilitary forces inside the state's regular armed forces, agencies outside the state's regular armed forces but within the state's security sector, and non-regular groups outside both the state's armed forces and official security sector.



Graph No. 2: Potential coup-proofing agencies at disposal of the regime.

Source: Own illustration.

In a first version such measures are being applied within the regular military⁹, for example by favouring one branch over the others by supplying it with better training and equipment or by raising salaries and non-monetary benefits, in order to ensure increased support from this specific branch in times of crises. Empirically, this branch within the regular military tends to be the army. (Barany 2016: 27-28) Quite often only certain units within one branch receive this preferable treatment. (Holliday 2013b: 7) Besides ensuring in-

⁹ It might be discussed whether the concept of counterbalancing encompasses intra-military balancing but as empirical evidence (e.g. Greece 1967-1974, see Barany 2016: 27-28) proves the existence of the phenomenon it is included in here.

group support, such measures are meant to incentivise units from other branches sympathising with the uprising to remain loyal as in case of their defection or active support of the uprising they might have to take up a costly fight with the loyal branch.

Some authoritarian regimes favoured the creation of paramilitary praetorian units outside of the structures of the military but within the state's regular armed forces to undermine the decision-making capacity of the generals by creating two competing institutions. (Quinlivan 1999; Holliday 2013b) Most often those units are integrated into a chain of command bypassing official structures and reporting to the regime elites directly. The variety of possible examples is high, especially common are Presidential, Republican, or Revolutionary Guards, as well as special forces units. (Quinlivan 1999) Paramilitary units are regarded as the most important actors of counterbalancing measures within the coup-proofing literature and will therefore be the focus of this paper's control variables.

Outside the state's regular armed state forces but within the state's official security sector, counterbalancing is theoretically possible but hardly ever empirically enacted. While most authoritarian regimes massively rely on non-military agencies for providing internal security and repression (Greitens 2016: 21-22), ranging from local and nationwide police, special police forces such as riot control units, and intelligence agencies and secret police, those agencies are rarely used for counterbalancing. This is mainly explained through the incompatibility of training, equipment, and mission between the regular armed forces and non-military internal security forces. Even well-funded and numerically superior police and secret intelligence forces are empirically not an effective counterbalancing force even against small and badly funded militaries. (Nassif 2015) Accordingly, agencies from this area will be disregarded during the analysis.

The last set of papers relevant to coup-proofing focuses on agencies outside both the state's regular armed state forces and the state's official security sector. The examples for such units are countless, ranging from pro-government militias (PGMs), local militias and self-defence forces, armed vigilante groups, armed youth groups or paramilitary wings of political parties and social movements to personal guards of politicians. (Carey, Mitchell, and Lowe 2013; Carey, Colaresi, and Mitchell 2015; Staniland 2015a, 2015b) Quite often they are being employed for the most "dirty" operations neglecting human rights. (Mitchell, Carey, and Butler 2014; Ahram 2016) Moreover, they most often suffer from a lack of certain characteristics of the armed forces like professionalism, strict hierarchies, embedment into official chains of command, constitutional regulation, official responsibility, and funding through state channels. (Ahram 2011; Kacowicz et al. 2012; Carey, Mitchell,

and Lowe 2013; Carey, Colaresi, and Mitchell 2015) As those agencies did not pose an institutional challenge to the military in any relevant case, they are excluded from analysis.

Having established the potential agencies and expected benefits of counterbalancing, it should be mentioned that counterbalancing tends to be a two-edged sword. In some cases the well-equipped praetorian troops might stage a coup themselves which the weakened regular military is then unable to stop.¹⁰ Additionally, the assumption of disciplining non-praetorian units by making them fear to be replaced could easily backfire as the military might try to prevent such action being taken, attempting an essentially “unnecessary” coup d’état or siding with the opposition to get rid of the competitors through regime change. (Barany 2016: 27; Sudduth 2017) As Lutscher (2016) shows in one of the rare quantitative studies on the issue, even though he is focussing on individual defection during nonviolent uprisings only, the relationship between the number of security agencies and the risk of defection is U-shaped with an optimum value of two agencies and massively increased risks for individual defections within both minimally and highly fractionalised security sectors. It is assumed that beside rivalry, collective action problems are likely to explain a great deal of the defection risk in highly fragmented coercive apparatuses. (Lutscher 2016) During analysis, this variable will be included as institutional competition.

One last set of coup-proofing measures already laid down by Quinlivan (1999: 133) needs to be explored: “the effective exploitation of family, ethnic, and religious loyalties for coup-critical positions”. Parts of this strategy are covered by ascriptive recruitment and counterbalancing strategies. However, this provision also includes the appointment of the top echelons of the military and their identitarian ties to and personal relations with the regime elites. Besides ethnic, sectarian or religious, and regional affiliations, this might also encompass tribal, kinship, or family affiliations. Typical examples would be Saddam Hussein’s Iraq, Qaddafi’s Libya or Assad’s Syria in which close family or kinship members or tribal affiliates held highest military positions. (Khan 2007; Anderson 2011; Hinnebusch 2012; Gaub 2013; Townsend 2015)

By appointing individuals which are, for identitarian and personal reasons, extremely tied to the regime elites, the grip on the military is expected to be firmer. The institutional autonomy of the armed forces is reduced by external oversight which makes internal plans for coups or defection more easily detectable. Moreover, appointing such persons to the

¹⁰ A classical example for such an incident is the coup d’état in Ethiopia in 1960. (Barany 2016: 27)

top of the military more closely links the military to the regime in public perception and makes it a tool of the latter, therefore reducing its chances to easily switch sides and continue serving under a new government. To quote Geddes (2004), it is harder for them to simply “return to the barracks”. Accordingly, identitarian and personal ties between the regime and the military need to be accounted for in a separate variable.

Closing the section on coup-proofing strategies, it should be noted that the recent events of the Arab Spring gave rise to a new wave of studies questioning the effectiveness of coup-proofing strategies at large. (Albrecht 2015a, 2015b; Albrecht and Ohl 2016; Koehler, Ohl, and Albrecht 2016; Sudduth 2017) While Albrecht (2015b) initially shed doubt on the effectiveness of coup-proofing measures by employing a statistical analysis of coup-risk for the MENA region over several decades, in his recent study together with Ohl (2016) he demonstrates the necessity of analysing principal-agent relations between regime and military and even attempts to break up the military black box on a micro-level by distinguishing officers and rank and file.

1.2.2.4 Methodology in the field: lack of medium and large-N studies

Generally speaking, the majority of research from the late 1990s onwards tended to be actor-centred, qualitative small-N studies with a significant lack of quantitative work being available. (Tofalvi 2013: 80-81) Mixed methods are rarely employed as well, only a certain number of medium-N studies exist, most often with a regional focus which does not reduce the issue of missing generalisability. (Tofalvi 2013: 81) This problem was not much improved by a perceived tendency within the scientific community towards emphasising individual factors or even employing monocausal explanations rather than providing a comprehensive model and lacking statistical backing. (Barany 2016: 18)

Amongst the small number of existing medium-N or mixed method approaches, Barany’s recent book *How armies respond to revolutions and why* (2016) needs to be highlighted as he follows an innovative approach. He establishes a relatively comprehensive analytic raster by merging most of the approaches listed above, thereby overcoming the strict division of sectoral approaches and monocausal explanations. He applies an ordinal scale ranging from 0 to 6 (irrelevant to critical/decisive) to evaluate the importance of individual variables for a low two-digit number of empirical cases and thereby allowing for a comparative assessment of individual variables’ impact over space and time. Comparing cases from different regions and historical periods, he is improving the external validity of his approach. Unfortunately, his helpful and systematic approach

suffers from a couple of issues. First of all, his scale is ordinal in character and therefore does not allow for further statistical analysis or proper value comparison. Moreover, the value assignment is not thoroughly argued and based on his own estimations only, without a chance for external control or replication. Lastly, as he argues himself, his model is not meant to be generalisable but only to be a guideline for prediction of outcomes for individual cases.

Leaving behind the small and medium-N research and focussing on the few studies employing large-N quantitative models, one needs to pay special attention to the studies by Koren (2014) and Tofalvi (2013). Even though their initial research interest, framing, and underlying assumptions differ quite substantially from this study's approach, their methodology comes closest to it.

For Koren, the initial research interest does not concern military autonomy and loyalty or military decision-making during anti-regime mass protests. Even though he employs a set of variables partly similar to those of this paper, his main interest is on the factors determining both the likelihood of violence being exerted as well as its intensity with a special focus on mass killings. (Koren 2014: 688-89) His claim of being interested in the effects "of certain factors related to the structure of the military on the occurrence and level of violence against civilians" (Koren 2014: 689) and "the role of military and paramilitary organizations in this violence" (Koren 2014: 692) shows that his interest is less on military autonomy or loyalty but rather on their symptoms.

In his dataset, covering the period 1972 to 2012, he lists in his Military Structure, Civil Disobedience, and Military Violence 1972-2012 (MSCDMV) dataset 97 cases which were "primarily nonviolent civil disobedience campaigns that presented an existential threat to the regime", which for him equals maximalist aims of overthrowing the incumbent regime. (Koren 2014: 689-90) He therefore relies mainly on Chenoweth and Stephan's NAVCO dataset and his own continuation of their data after 2006, thereby completely excluding any campaign which presented any violent resistance or deteriorated into civil war at some point. (Koren 2014: 689) Even though highly problematic, this definition will prove to be very helpful as a starting point for discussion in this study's theoretical section. Additionally, in contrast to the intentions of this paper, Koren includes even liberal democracies into his analysis, arguing that an existential threat could push even the most liberal regimes into employing force and that the essential factors are to be found in the structure of the military, regardless of the political regime harbouring it. (Koren 2014: 689-90)

Koren highlights the importance of breaking up the black box regulating the interaction effects between regime and military. Even though he does not explicitly employ a principal-

agent approach, he acknowledges the discrepancy between “the orders given by the political leadership and their implementation in the field” and explicitly states that the threat perception of the regime, the military as an institution, and the forces in the field might differ substantially. (Koren 2014: 692-93, 707) This claim is very close to Earl and Soule’s focus on agency problems caused by imminent threats on the spot. (Earl and Soule 2006) Koren believes strong praetorian armies to be more likely to exert lethal violence but argues that this is not explained by their loyalty to the regime but rather by their feeling of superiority over the state institutions, overruling the latter’s decision-making rights and assuming the prerogative. (Koren 2014: 694) This assumption is completely at odds with the theory applied in this paper and will provide for fruitful discussions later on. More in line with this study’s assumptions, he shares the social distance argument regarding conscription as well as the ascriptive recruitment argument which he calls military discrimination. (Koren 2014: 695-96) Both variables prove significant in his analysis, especially with regard to mass killings (Koren 2014: 701-04), and therefore should be incorporated into a more comprehensive model on the link between military autonomy and loyalty.

He explicitly codes paramilitaries, pro-government militias, and special police forces as important variables and proves their effect on violent crackdowns and mass killings to be statistically significant (Koren 2014: 701-04), which lends leeway to this paper’s argument regarding institutional competition. However, he is less interested in the institutional rivalry and rather places emphasis on the likelihood of such alternative agencies structurally recruiting certain individuals which are more likely to exert lethal violence and therefore raise the overall probability of violent crackdowns over the whole of the security sector. (Koren 2014: 692-93) Moreover, he makes a strong point in excluding local police forces from his analysis by claiming them to be of little statistical significance with regard to fatalities caused, and lacking the appropriate means in terms of training and equipment for being an effective tool in cases of existential threats posed to the regime by civil protest. Lastly, obtaining and coding reliable data for police forces on a local level for a higher number of cases would pose a very extensive challenge. (Koren 2014: 690)

As the majority of the controls employed by either Koren or Tofalvi will be included in this study, in order to avoid redundancies, they will be dealt with in the appropriate theoretical and operationalisation sections. Generally speaking, Koren delivers a very innovative piece of work in the quantitative sector, especially with his attempts to military discrimination, but fails to develop a comprehensive causal mechanism for this variable and to distinguish between different kinds of ascriptive recruitment. Second, even though he acknowledges

the relevance of paramilitaries, he regards them not as rivals influencing the behaviour of the military but as part of a somehow obscure overall security sector with a focus on whether their inclusion improves the overall likelihood of violent crackdowns and mass killings. Lastly, he completely omits the relations between the regime and the military both on an identitarian as well as a personal level. His research is therefore highly valuable as a starting point for this study but not yet an answer by itself.

Turning towards the second quantitative analysis of high relevance for this study, it should be noted that Tofalvi's (2013) initial research interest is more closely related to this study than Koren's but is theoretically less comprehensive and encompasses more disputable assumptions and variable operationalisations. Tofalvi tries to explicitly link military disloyalty and regime change under the conditions of mass protests and asks for the factors determining the military's decision and potential loyalty shifts. (Tofalvi 2013: 80-81) He claims that amongst the two options for authoritarian regimes to control their armed forces, repression and loyalty creation through ideology and rents, the latter is the determining one. (Tofalvi 2013: 81) For him, this includes

“financial benefits, the privileged position of the armed forces as compared to other coercive institutions, specific recruitment methods and the selection of the leadership of the armed forces from a specific group of society in order to keep the army distant from the rest of the population.” (Tofalvi 2013: 81)

Tofalvi even explicitly claims to employ a principal-agent relationship and to rely on a social distance model. (Tofalvi 2013: 83-85) As variables for the latter he uses conscription and discriminatory recruitment, especially with regard to ethnicity. (Tofalvi 2013: 85-86) In order to gain further insight into the functional logic of the military, he also distinguishes between the officer corps on the one hand and rank and file on the other hand. (Tofalvi 2013: 90-91) As a second major explanatory variable, he focuses on economic benefits decreasing the risk of disloyalty. (Tofalvi 2013: 85) Lastly, contrary to the theoretical propositions of this study and also different from Koren's treatment of the variable, he assumes that “[a]rmies whose influence remains primary compared to other coercive institutions (paramilitary forces, police) are less likely to be disloyal.” (Tofalvi 2013: 85)

Unfortunately, even though he raises many interesting ideas, Tofalvi's work remains fragmented and lacks a comprehensive causal mechanism linking his assumptions, variables, and data. Quite often central concepts remain incomplete or lack convincing causal links. For example, the claim that armies whose influence is superior to other coercive institutions are more likely to remain loyal is not adequately explained; in the

theoretical section of his work the emphasis is only on the general risk of creating alternative forces for military loyalty and how the fragmentation of the armed forces impacts coordination during public uprisings. (Tofalvi 2013: 88-89)

For his statistical analysis, he includes 48 cases of social movements from 1990 to 2012 which took place in non-democratic regimes and were maximalist in their aims, claiming regime change. (Tofalvi 2013: 91-92) Additionally he excluded all military regimes, countries which were involved in a civil war (regardless of whether or not this was related to the protests), countries in which the military initiated the regime change movement, and all cases from the Communist transition period. (Tofalvi 2013: 92) Even though some of these applications seem plausible at first glance, Tofalvi does not comprehensively argue for their exclusion.

Disloyalty, a concept which Koren is not interested in, was operationalised as dichotomous variable with any “significant disloyalty being where troops, a mass of soldiers, or officers have physically defected from the army, or at least a declaration of disloyalty or non-compliance with the regime occurred” being coded as disloyalty. (Tofalvi 2013: 94) Unfortunately, “significant” hereby lacks a numerical threshold and Tofalvi fails to disclose how he ended up coding 23 of his 48 cases as disloyalty.

The very same problem of a lack of comprehensive operationalisation occurs for the existence of a rival “coercive body existed, which was preferred by the regime“ (Tofalvi 2013: 94) - even though the idea is comprehensible, due to a lack of clear causal links and a comprehensive operationalisation, the reader is unable to control for the assignment of values for this dichotomous variable across cases. Additionally, Tofalvi claims that 75% of all armed forces with rivals turned disloyal (Tofalvi 2013: 102). One might either accept this high number, doubt it, or explain it through a selection bias based on the assumption that especially in vulnerable regimes with low trust in the regular military, the elites will tend to counterbalance.

The same issue of a lack of comprehensive reasoning and elusive operationalisation is detectable for the ascriptive recruitment variable, which had no significant effect for rank and file but only for the officer recruitment. (Tofalvi 2013: 94-95, 103) Conscription proved to be also highly dangerous for regimes, accounting for 74% of all disloyalty cases across the data - even though this number lacks a comparison to the relative amount of conscript armies with regard to the total number of cases and therefore again sheds doubt on the overall quality of the study.

Economic benefits were operationalised by the comparison of budget change for the year before the uprisings against the prior five years average and showed ambivalent results

(Tofalvi 2013: 94, 97-99, 102) This operationalisation is easily comprehensible and replicable, therefore its potential critique will be dealt with in the theory and operationalisation section of this paper.

In conclusion, Tofalvi's study offers some interesting ideas and a primarily statistical analysis for a limited universe of cases but lacks comprehensive causal mechanisms and replicable operationalisation. Therefore, all of its results should be digested with a healthy portion of scepticism. However, regardless of their shortcomings, Koren's and Tofalvi's studies in collaboration with a variety of other authors will provide for a solid basis for discussion while formulating a comprehensive theoretical approach and outlining an empirical analysis. Having concluded the review of the extensive body of literature related to the topic, the following section will deal with the questions which were unanswered so far and how this study attempts to fill some of these blind spots.

1.3 Research gap and research questions

As demonstrated during the comprehensive literature review, several gaps regarding military decision-making during anti-regime mass protests and regime strategies to ensure military support during such crises are yet to be filled. Those gaps can be clustered along methodological and theoretical lines, with the former encompassing operationalisation and exploited datasets and the later including causal mechanisms.

In terms of methodology, one needs to once again stress that the majority of papers on this issue are small-N qualitative studies, either focussing on single cases or being comparative studies of a little set of regionally clustered cases with limited generalisability of findings. Moreover, most of the papers either merely focus on proclaimed causal mechanisms and omit tests for their hypotheses beyond the scope of one or two cases; some studies tend to even be merely descriptive. Few studies at all link thoroughly argued causal mechanisms with the examination of a larger set of cases and those who do tend to focus on a very narrow set of variables being tested for and quite often omit serious controls, thereby producing marginal explanations with monocausal character. Moreover, they tend to cover regionally clustered cases and/or very limited periods in time only, which leads to an assumed low generalisability and limited external validity of findings. Based on this selection bias, there is a high risk of regionally or temporally idiosyncratic factors and diffusion effects being overweighted and distorting the results. The very limited number of large-N statistical studies covering military behaviour during anti-regime mass protests both across regions and time are either not primarily interested in regime ties influencing

military autonomy and subsequently military decision-making, or suffer from serious flaws like the ones laid out above. Additionally, the existing quantitative studies tend to be limited in scope and lack at least partly thorough causal reasoning, proper exploitation of available data, and comprehensible and transparent operationalisation. Accordingly, a theoretically soundly argued, large-N statistical model both across time and space focussing on this issue is a necessity to test for the viability of variables being proclaimed to have influence without being empirically tested so far.

From a theoretical point of view, none of the reviewed papers offered a comprehensive theoretical framework explaining military loyalty or disloyalty during anti-regime mass protests by drawing on the military's institutional autonomy from the regime as explanatory variable through the employment of a principal-agent model. Even though a variety of papers developed potentially applicable causal mechanisms of military decision-making, the link between regime strategies to limit institutional military autonomy and the empirical decision of the military agents to stay loyal or to defect from the regime has not been explored in detail so far.

Strategical limitation of military autonomy as a tool of regime survival has received little comprehensive arguing yet. Especially the theoretical links between the composites ascriptive recruitment, identitarian and personal relations between military and regime, and institutional competition adding up to the explanatory variable military autonomy remained insufficient. Moreover, the causal mechanism linking military autonomy and likelihood of defection from the regime remained underdeveloped and widely untested. Additionally, this limited testing applies to a whole variety of highly relevant control variables as well.

Given the deficiencies in research so far, a couple of questions need to be answered. Starting with the most obvious one, it has to be asked why militaries stay loyal or become disloyal during anti-regime mass protests. Given the research attempt of this study, the according question needs to be framed like this: *Does the level of institutional military autonomy influence military loyalty during anti-regime mass protests in non-democratic regimes?* The aim of these questions shall be directed towards detecting general trends and patterns over space and time by employing a large-N approach. It needs to be determined which causal mechanism could potentially explain such effects and whether or not the three proposed composite variables ascriptive recruitment, identitarian and personal ties between regime and military, and institutional competition exhibit explanatory power. If so, are they sufficiently in their explanatory capacity or do other variables, categorised as controls in this study, need to be taken into consideration to come up with a comprehensive understanding of military decision-making under conditions of anti-regime

mass protests?

In conclusion, this paper aims at providing a comprehensive theoretical framework explaining military loyalty or disloyalty during anti-regime mass protests by drawing on the military's institutional autonomy from the regime as explanatory variable through the employment of a principal-agent model and featuring a large-N, cross-regional and time-variant statistical test based on a regression model to establish generalisable findings with high external validity and explanatory power for other cases.

2. Theoretical and analytical framework

“One must analyze a potentially large number of variables that interact in complex ways, and all explanatory factors are not created equal: some go much further in explaining the armed forces' reactions to revolutions than others.” (Barany 2016, p. 17)

Having established the research intentions of this study, it is necessary to provide a comprehensive theoretical framework linking military autonomy and loyalty and acknowledging the multitude of factors playing into it. To achieve this goal, several steps need to be followed. First, some basic assumptions on the role of the military for repression need to be made. Second, some thoughts about the respective threat perceptions of regime and military are brought up which lead to the configuration of the principal-agent model. In the last steps, working definitions of central concepts are provided and the causal mechanism linking military autonomy and loyalty is laid out.

2.1 The pillars of autocracy: legitimization, co-optation, and repression

“Besides co-optation of relevant elite groups into the winning coalition and legitimization processes, repression was and still is seen as ‘backbone of autocracies’” (Gerschewski 2013: 21).

As Gerschewski (2013) and Merkel (2016) concordantly argue, non-democratic regimes have three basic options to ensure regime loyalty and avoid or address dissent which could lead to regime failure: legitimization, co-optation, and repression.

Legitimation refers to all techniques which are meant to produce both long-term explicit and diffuse support for the regime through either input legitimization, such as possibilities for participation and policy advocacy, or more commonly through output legitimization by providing public goods like security, stability, property rights, social benefits, or economic growth to relevant segments of society. Accordingly, legitimization is an avoidance tool, trying to minimise incentives for public uprising initially or reduce their likelihood of gaining significant public support. If, however, the uprising gained momentum, usually only very

costly concessions by the regime will alter the cost-benefit calculations of the protest movement again and substantially reduce the risk of regime failure - costs which regimes are most often not willing to bear or unable to encounter without significantly weakening themselves. Accordingly, as a short-term anti-protest instrument, legitimation is only partially useful.

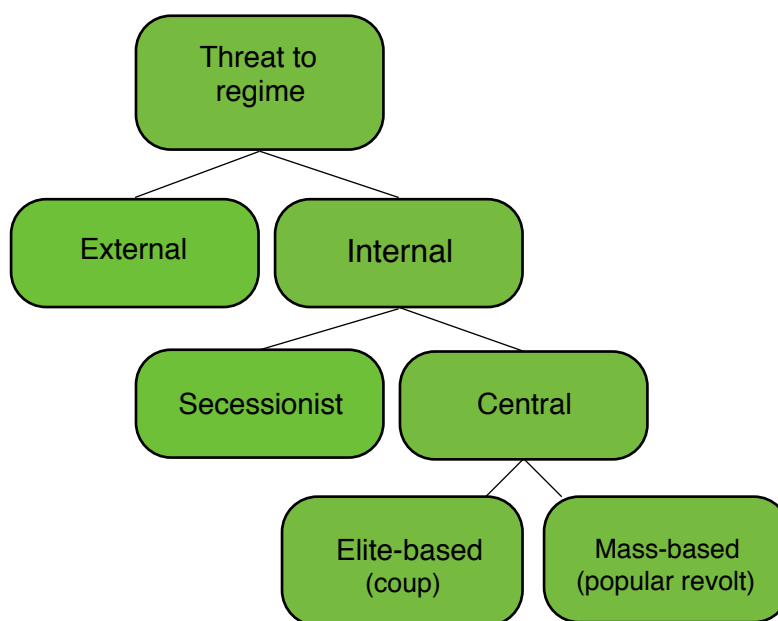
Co-optation refers to the strategic “buying out” of potential counter-elites or relevant veto actors, institutions, and interest groups in society by providing them with incentives to be incorporated into the regime structures. Most often this is being done by granting economic benefits in systems characterised by cronyism (Hinnebusch 2012) or by allowing pro-forma political competition of varying degree in competitive authoritarian systems, anocracies, or defect democracies (Merkel 2004). This entails everything from incorporation into the formal winning coalition, prestigious posts allowing for access to resources, or quotas for certain groups in decision-making bodies (for example the military in Myanmar). All of these measures are aimed at co-opting relevant players into the formal regime structures as either allies or at least loyal opposition to make them less prone to support regime change attempts as this would risk their sources of influence and revenue. Accordingly, this strategy follows long-term stability goals and resembles a less effective tactical move when protests are already occurring, even though the buying out of the main opposition figures might still be a viable approach in certain cases. However, beyond a certain point of promising anti-regime mobilisation, both the capabilities of the regime to do so and the willingness of the leading opposition figures to agree to tie themselves to a trembling regime will presumably decline.

This highlights the last available option for regime survival: repression. It should be noted that this study is neither interested in state repression as such nor in long-term techniques of oppressing social movements, covered operations against opponents, non-coercive repression, or methods of policing and the like. (Davenport 1995; Moore 1998; Davenport and Ball 2002; Earl 2003; McPhail and McCarthy 2004; Davenport 2007) Neither does it ask for the long-term costs of repression such as potentially declining public regime support, increased support for the opposition, a weakening of the winning coalition’s cohesion along lines of hawks and doves or the impact of using violence on international reputation and alike. (Bratton and Masunungure 2007) It merely focuses on repression or the willingness of the military to potentially exert violence during anti-regime campaigns as a short-term instrument of immediate regime survival. State repression is thereby

considered as an outcome variable.¹¹ Based on the assumption that the outcome of anti-regime mass protests is closely linked to the will of the military to exert potentially lethal violence to uphold the regime, the potential strategies for the regime to ensure the absolute loyalty and obedience to commands of its soldiers on that very occasion are a key to understanding empirical cases. At least in the short term, the question whether or not the military will obey such commands will determine the faith of both the regime and the social movement - repression is therefore the viable instrument of choice.

2.2 Threat perceptions of the regime

Based on Greitens' (2016) classification model, as depicted in Graph No. 3, the main divisions are between external and internal threats, secessionist and central threats, and lastly between mass-based and elite-based threats.



Graph No. 3: Threats to authoritarian regimes.

Source: Own illustration based on Greitens (2016: 19): Figure 2.1 Threat landscape for autocrats.

For this study, the threats of primary interests are internal threats which tend to be anti-regime protests aiming at regime change at the national level and therefore to have non-

¹¹ State repression can be used either as outcome variable when examining regime reactions or as an explanatory variable for a variety of political, social, and economical factors, for example when focussing on movement counter-violence, the interplay of regime-movement dynamics, movement consolidation or dissolution, or unintended side effects of long-term repression. (McPhail and McCarthy 2004; Bratton and Masunungure 2007; Davenport 2015)

secessionist goals. The initial main threat to the regime therefore arises from a mass movement but as potential disloyalty of the military, and especially the military elites, is the crucial point in encountering the mass-based crisis, the regime on the same time suffers from the need to internally safeguard against its own military and its commanders.

Moreover, it should be noted that Davenport (1995, 2007) and others argued that threat perceptions are multidimensional and highly diverse: what poses a serious concern to one incumbent regime might not be particularly bothering to another. Those differences arise from factors such as the length of reign, regime type and internal configuration, the expressive and diffuse support for the regime from amongst the general population and its relevant constituency, the popularity and size of protests, mutually influencing dynamics arising from actions taken by security agency against threats, secessionist tendencies, breaks in the winning coalition, external alliances, fear of coups from within the regime elite, the personalities of the regime leader and his closest circle, and alike. In addition, it should be noted that the threat perceptions of the regime elites and its military do not have to be in accordance with each other - what is highly threatening to a dictator does not necessarily pose the same burdens on his military and vice versa. (Hendrix and Salehyan 2016) It should therefore be clear that the very same outcome in the field might occur due to a variety of reasons based on strategic choices and unintended effects of the regime elites, the military elites, and the troops on the ground. Based on this assumption, the principal-agent approach this paper employs seems to be of extraordinary importance in explaining non-coherent outcomes and results diverging from initial strategic intentions of the regime elites and their approaches to safeguard the loyalty of the military.

2.3 Principal-agent models and agency theory

“In the civil-military context, the civilian principal contracts with the military agent to develop the ability to use force in defense of the civilian’s interests. Once the contract is established, the civilian principal seeks to ensure that the military agent does what civilians want while minimizing the dangers associated with a delegation of power.” (Feaver 2003: 57)

This study rests on two basic assumptions. First, regimes are no black boxes but are constituted of a variety of stakeholders, actors, and specialised agencies with individual personal or institutional interests and preferences. Second, each actor possesses a varying degree of autonomy from both the regime leadership and the regime as an institution. The degree of this autonomy is based on personal and institutional ties between actors and the regime and its polity, policies, and politics. The more closely an actor is tied

to the regime through a variety of factors, the lower his room for political manoeuvre or for switching sides during regime crises is.

Based on these assumptions, a principal-agent model is the most convincing theoretical approach to explain the relations between the regime and its military. Originating from economic theory (for an extensive discussion see Laffont and Martimort 2002), principal-agent approaches gained popularity in political science especially from the 1990s onwards and culminated in the *agency theory* developed by Feaver in his seminal book on *Armed Servants* (2003). Several authors recently employed similar explanations, besides classical civil-military relations (Sowers 2005) most often focussing on the outsourcing of violence to non-traditional armed groups and its impact on human rights violations. (Francis 2005; Blom 2009; Mitchell, Carey, and Butler 2014; Cohen and Nordås 2015; Jentzsch, Kalyvas, and Schubiger 2015) This study has been influenced specifically by Feaver's agency theory.

In principal-agent models a hierarchical relationship exists in which a principal delegates a task to an agent as he believes the agent to be able to fulfil this task in a more cost-effective way than by doing it himself. (Laffont and Martimort 2002: 8-27; Sowers 2005: 388) States are therefore principals, meaning centralised organs which have a variety of specialised tasks to fulfil, such as diplomacy, bureaucracy, and security provision. In a division of labour, the state takes on agents to deal with these tasks, ranging from a diplomatic corps or an army down to a vehicle licensing centre. Being experts in their field, they reduce the state elites' costs of pursuing those tasks by not wasting too much manpower, financial resources, and political capital.

However, principal-agent relationships suffer from intrinsic flaws, known as agency dilemma or agency costs. This dilemma arises from two sides: diverging interests and asymmetric information. (Sowers 2005: 388) The set-up of an agency, based on path-dependency arguments and bureaucratic politics research, leads more or less inevitably to the institution developing preferences and interests of its own. Amongst others, these include self-preservation, continued and increasing access to budgets and resources, and maintaining a certain institutional autonomy and room for manoeuvre from the central state structures. Based on this assumption, the interests of principals and agents might diverge in certain cases. (Sowers 2005: 388) Who will be able to enforce its will on the other side will most often depend on the relative power of each side to punish or withhold benefits from the other party and external circumstances: a strong, publicly popular agency with high institutional autonomy and credible potential to hurt the regime by withdrawing its

support in a critical situation will have better chances to derive concessions or even occasionally neglect orders without major punishments than a weak, closely tied, and publicly unpopular agency. Especially the institutional autonomy of the agent has a determining impact on his behaviour in times of crises: the more room for manoeuvre he has and the less pronounced the oversight of the regime and its prior attempts to tie the agent to its structures were, the more likely the agent will exhibit a diverging pattern of behaviour from the expressed wishes of its principal. (Feaver 2003: 57) Concerning the asymmetry of information, the principal normally lacks its agent's insight into a certain field and therefore can hardly countercheck advice given or actions taken by the agent. (Feaver 2003: 69)

Turning to civil-military relations, they have been claimed to be "a game of strategic interaction" (Feaver 2003: 58) between civilian principals and military agents which act based on rational assumptions.¹² Feaver argues that the military is a specialised agency contracted by the state principal "with the mission of using force on society's behalf" (Feaver 2003: 57) regarding external defence. Even though he acknowledges the potential for internal division amongst both principal and agent, he sticks to a single agent and principal each, for the benefit of modelling. (Feaver 2003: 98-99) This study will follow his approach for practical reasons, as the inclusion of divided agents would massively increase model complexity and presumably reduce data availability and reliability.

In addition to Feaver's democracy-based assumption, it should be noted that in non-democratic regimes the regime leadership might be the principal. (Rubin 2001) Moreover, the use of force can easily be extended to internal security tasks being taken over by the military as well. (Barany 2016: 32-33)

In terms of institutional interests of the military, Feaver claims a certain control over policy outcomes related to the military, acknowledgement of service and appropriate treatment, and as little civilian interference as possible being most important. (Feaver 2003: 64-65) Having contracted out the use of force, the civil leadership "seeks to ensure that the military agent does what civilians want while minimizing the dangers associated with a delegation of power." (Feaver 2003: 57) Even though Feaver based his explanations on democratic systems, the same general idea applies to authoritarian systems: measures need to be installed to avoid military shirking, meaning the systematic ignoring of the

¹² Even though the terms are confusing when considering military regimes, the mechanism stays the same with a small governing clique of senior officers commissioning other members of the military with state duties.

principal's wishes and oversight. (Feaver 2003: 57-58) However, it should be noted that Feaver, like Earle and Soule (2006), acknowledges the agent's potential for non-strategical derivation of the principal's wishes and arising unintended effects - or as he expresses it, "in fulfilling the principal's functional directions, things can go wrong simply due to Murphy's Law." (Feaver 2003: 64)

Challenging the wilful disobedience to the principal's wishes and orders, Feaver proposes a set of measures such as supervision, inter-service rivalry, and as a last resort withdrawing decision-making capacity from the military elites. (Feaver 2003: 70-87) Being closely related to the guardianship dilemma, those measures are highly important externally and internally: externally to safeguard the regime against a military defeat combating an external enemy, and internally against an overturn by the military through ensuring that the autonomy of its military agent is as small as possible. (Feaver 2003: 70, 76-80) Therefore, the higher the military autonomy and the higher its room for manoeuvre, the higher the risk for defection from the regime. (Feaver 2003: 90-94) As a solution he suggests "promoting military agents who hold preferences more similar to those of civilian principals" (Feaver 2003: 59) - as the next sections will show, all regime measures to limit military autonomy considered in this study fall into this definition.

2.4 Linking military autonomy and regime survival

2.4.1 Definitions

In this study, the non-democratic regime is the principal of the military and attempts to ensure the latter's loyalty during peaceful anti-regime campaigns. To allow for the formulation of a causal mechanism explaining this statement, several comprehensive definitions are required: non-democracy, regime, peaceful anti-regime campaigns, loyalty, and military, the latter in relation to paramilitaries and the totality of the armed forces.

Military

The term military describes one of the two sub-groups of the armed forces within a country's official state security sector. It is a specialised armed agency which is tasked mainly with the provision of security against external threats, even though internal duties might be taken up as well. It is hierarchical in its structure, permanent, subordinated to a chain of command within the official state channels, heavily armed, and militarily trained and equipped. It tends to consist of three branches: army, navy, and air force, sometimes

with a specialised marine corps or a coast guard as an addition. (Feaver 2003; Barany 2016: 6)

It is to be distinguished from the second part of the armed forces, the parallel military as Quinlivan (1999: 142) calls it, or more commonly named the official paramilitaries. They are “forces whose training, organisation, equipment and control suggest they may be used to support or replace regular military forces.” (The Military Balance 2017: 567) Additionally, such forces often tend to be less heavily armed than the regular military, to fulfil special duties or to adhere to special ideological, political, or personal preferences of the current regime leadership such as the Saudi National Guard or the former Iraqi Presidential Guard. (Quinlivan 1999; Khan 2007) Besides, a plethora of non-state armed groups exist, ranging from pro-government militias, local self-defence forces, armed vigilante groups, to armed wings of youth movements and political parties, and so on. (Carey, Mitchell, and Lowe 2013) Those groups are not considered in this study as they do not pose an *institutional* challenge to the regular military due to their position outside the state organisation.

Regime

Both definitions and classifications of regimes are a major point of disagreement amongst researchers. While Geddes et al. and Cheibub et al. in their respective approaches focus on the identity and selection processes of the regime elites as clarification criteria, Wahman et al. focus on the set of institutions used by the regime elites to “regulate the access to and maintenance of public authority” (Wahman, Teorell, and Hadenius 2013: 21). As a working approach, this study’s focus will be on the regime leader as the central figure linking the regime elites and the military and therefore increasing or decreasing chances of regime survival through reducing military autonomy. Regime survival is therefore defined as the respective ruler staying in power during the campaign or peacefully handing over power to a chosen successor within his own camp with the basic configurations of the regime remaining unchanged.

Non-democracy

Turning to non-democracy, it should be noted that both democracy and autocracy are ambitious concepts and controversially discussed. Most assessments either concentrate on a dichotomous measurement or provide for a plethora of classifications for the grey area in between full democracies and full autocracies. (Merkel 2004; Hartmann 2015; Merkel 2016) Due to its limits, this study’s goal cannot be to revise decades of

sophisticated discussion about the nature of democracy but only to provide a working definition in which a non-democracy is a system in which competitive political participation is sharply restricted and “chief executives are chosen in a regularized process of selection within the political elite, and once in office they exercise power with few institutional constraints” (Polity IV manual 2015: 15-16) This includes, amongst others, absolute monarchies, personalist regimes, one-party systems, and military regimes. (Wahman, Teorell, and Hadenius 2013) A more extensive operationalisation will be provided in the respective section.

Loyalty

The concept of military loyalty is an ambitious one and has proven to be very hard to operationalise. In this study, military loyalty does not take into account the actual attitudes of the military or parts of it towards the regime and does not ask for its perceptions or convictions. It is a merely functional, binary definition and refers to the absence of military disloyalty from the regime during a campaign. Disloyalty hereby refers to widespread patterns of behaviour across the military and includes high numbers of soldiers and/or the officer corps and/or the top military leadership. Adding to both Koren (2014) and Tofalvi (2013), it includes desertions, insubordination and refusal to obey orders, non-ordered withdrawal to the barracks and/or refusal to march out in the first place, fraternisation with the protesters, openly taking sides with the protesters, or the military attempting to perform a coup against the regime. Individuals or small groups performing any of those acts therefore do not qualify the whole military as being disloyal. A detailed operationalisation of the variable will take place in the respective section.

Peaceful anti-regime campaigns

Turning to the last definition, peaceful anti-regime campaigns are distinguished by two features: non-violence as the primary campaign mode and maximalist goals of the campaign. More detailed definitions will be employed during the operationalisation. For this section it is sufficient to say that based on NAVCO definitions anti-regime campaigns or just campaigns are “a series of observable, continuous, purposive mass tactics or events in pursuit of a political objective“ and might range from days to years with a minimum number of participants superseding one thousand which normally include major protests. (NAVCO 1.1 codebook, 2011: 3) Campaigns have to exhibit maximalist goals, aiming at regime change on the national level and/or self-determination and/or secession. Moreover,

they have to refrain from violence as primary mean of campaigning. Accordingly, the term protesters refers to members of anti-regime campaigns in general. (Koren 2014: 691)

Those points are highly important as they presumably influence the military's reactions extensively. First, while campaigns with limited goals such as minor social or political reform do not pose an existential challenge to the regime, maximalist aims naturally do, thereby raising the stakes for both the regime and the military. The regime will arguably be more prone to order violent repression if it is existentially challenged and the military has a more decisive role as its decision to intervene or disobey commands will probably determine the fate of the regime. Second, nonviolent protests are believed to alter the cost-benefit calculation of the military. From an anthropological point of view, violence is likely to produce counter-violence. Even militaries with a high distance to the regime and a certain proneness to defection will most probably stop thoughts of switching sides if they are attacked by protesters, both as individuals on the spot as well as an institution. Therefore, the likelihood of the military shooting at violent and physically threatening protesters is higher than for some peaceful old folks and small children with flower necklaces being targeted. Accordingly, the physical non-intimidation of the military is an important condition in order to justify the causal mechanism which will be laid down in the next section.

2.4.2 Causal mechanism

As argued above, the military acts as an agent of the regime. As an agent it is an institution which has interests and preferences beyond or even clashing with the interests, preferences, and orders of its principal, meaning the regime leader and his closest circle. Being not a mere instrument but a semi-independent actor, it enjoys a certain degree of institutional autonomy from the regime. (Pion-Berlin 1992; Feaver 2003) It is argued that the degree of this autonomy determines its institutional ability to independently decide on how to react to challenges, particularly regarding the options of staying loyal or defect from the regime, and is therefore a key determinant of regime survival in high-risk situations such as widespread mass protests.

Based on the principal-agent argument it is claimed that a military which enjoys a high degree of institutional autonomy from its political masters is more likely to act divergent from the latter's interests if it feels own positions or preferences being infringed by obeying given commands. Orders to violently crack down on protesters are highly difficult to obey for the military as it leads to a trade-off between two of its major missions, the defence of

the people and the defence of the regime. Empirically, in non-democratic regimes the latter is often overemphasised over the former. (Rubin 2001) However, violently cracking down on peaceful protests, given that they enjoy a certain sympathy or legitimacy across the population, is doing considerable harm to the military's reputation in society and puts a heavy burden on both the institution and its individual members. Moreover, it increases the risk for potential splits amongst factions of the military, thereby breaking up cohesion as the military's essential logic of functioning. (Geddes 2004; Hendrix and Salehyan 2016)

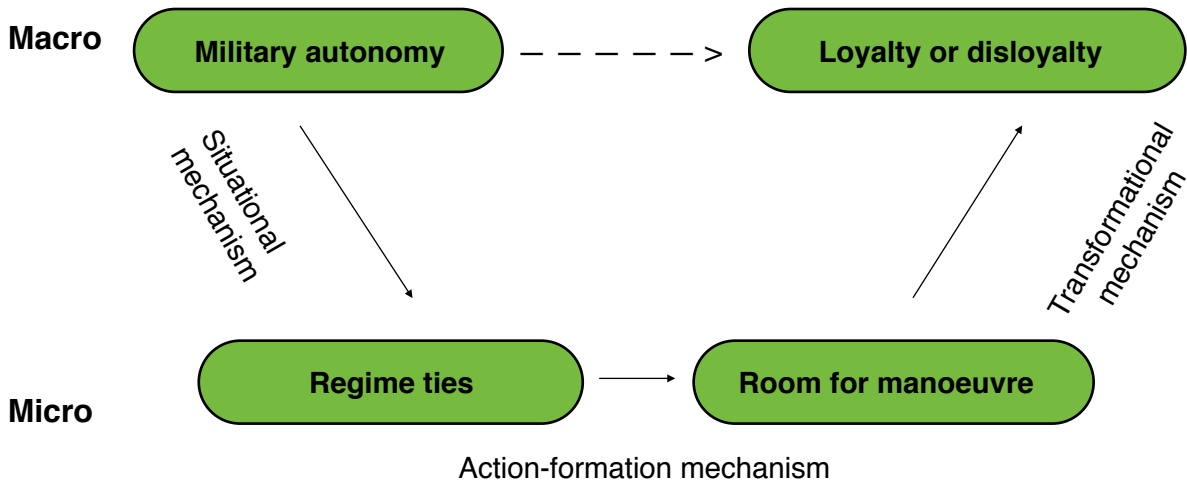
Accordingly, the military will carefully consider whether or not to obey such commands based on its autonomy and its incentive structures. Where the military is only loosely tied to the regime, it has a wide space for manoeuvre and might even be willing to accept regime change rather than to obey commands further on and either openly side with the protesters or at least stay neutral and stop defending the regime. Geddes (2004) claims that from the regime's point of view this "return to the barracks" has to be avoided at all costs and Bellin (2012: 131) adds that such disloyalties would probably determine the faith of the regime.

To limit the risks, the regime has to strengthen the ties between itself and the military so that the latter is, in effect, unable or at least highly unlikely to defect as it would give up preferential treatment and privileges. Even more effective is the credible threat of the military as an institution or relevant segments of it being severely damaged by a regime change, for example by losing impunity for prior human rights violations or by a different group taking over control which is expected to punish the members of the old regime's winning coalition. This is particularly relevant for identitarian ties between the military the regime as those are characteristic and unchangeable.

Loyalty is therefore a function of military autonomy which in itself is determined by the strategies employed by the regime to tie the military to its own survival and their effectiveness. Based on a Coleman-Esser bathtub (Albert 2009) the following graph is visualising the proclaimed mechanism on a macro-micro-macro level.

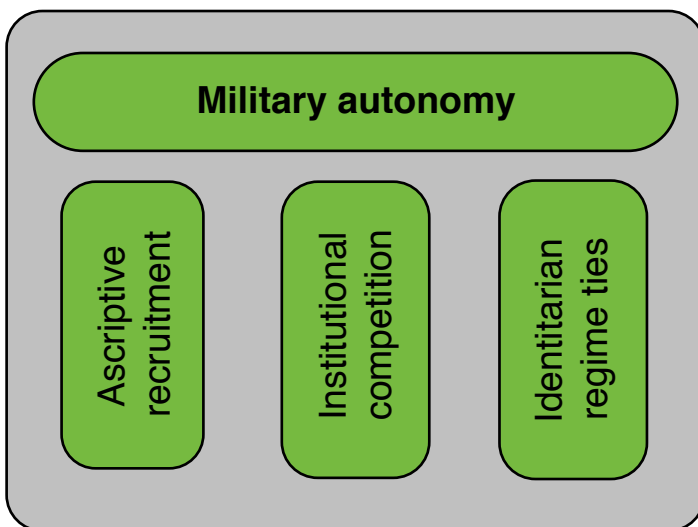
On a macro level, autonomy explains why the military opted to stay loyal or to defect from the regime. Breaking it down to the micro level through the situational mechanism, the given incentive structures and ties between the regime and the military determine the individual and collective preferences of the members of the military and its institutional interests. Accumulating individual interests and ties across the military through the action-formation mechanism determines the military's room for manoeuvre, meaning the capacity to judge independently about the potential denial of order. Where the room for manoeuvre is high, the military is unlikely to obey the commands of the regime given the high costs of

Graph No. 4: Coleman-Esser bathtub linking military autonomy and loyalty.
 Source: Own illustration.



cracking down on peaceful protesters in terms of burdening individual soldiers, ensuring institutional cohesion, and suffering losses in institutional reputation by the public. In this case, defection is likely to occur. If, on the other hand, the room for manoeuvre is limited or close to zero, the military will have few other options but to obey given commands and stay loyal to the regime. Thereby, the accumulated institutional preferences are re-transferred to the macro level through the transformational mechanism and observations for the dependent variable on the macro level are dichotomous assessments of loyalty or disloyalty of the military.

In terms of the components of military autonomy, three core independent variables are



Graph No. 5: Components of military autonomy.
 Source: Own graphic.

expected to exhibit explanatory power: ascriptive recruitment, institutional competition, and personal and identitarian ties between the regime and the military. These are chosen based on the study's argument that group incentives are more effective in tying the military to the regime than individual incentives. While the latter are mostly comprised of monetary or status incentives, the granting of promotions, pensions, and higher salaries to individuals acting loyal to

the regime, the former group aims at a larger set of people or the institution as a whole. (McLauchlin 2010) Group-based incentives and preference structures therefore provide a better guarantee for regime survival, as preferences of individual soldiers are unknown to the regime and therefore hard to match. In contrast, group-based incentives such as being part of the ruling identitarian group in fractionalised societies are more stable as they are satisfying the relatively well-known preferences of a larger set of soldiers or the totality of the military. (Townsend 2015; Khan 2007)

2.4.3 Hypotheses

Based on the theoretical framework outlined above, the overarching hypothesis is that the degree of military autonomy is causally linked to the military decision-making insofar as the existence of a certain set of regime ties decreases the chance of disloyalty. This section aims at formulating testable hypotheses for this claim. Theoretical justifications are kept short as the basic arguments are extensively provided for in the literature review. All hypotheses rest on the *ceteris paribus* assumption.

Based on the social distance approach (Earl and Soule 2006; McLauchlin 2010), ascriptive recruitment is proclaimed to increase military loyalty. By maximising the distance between repressive agents and the social movement on the one hand and minimising social distance between itself and relevant segments of the military, the regime is limits military autonomy and thereby increases its own chances of survival. In terms of maximising distance between oppressors and oppressed, some research has been conducted to prove the validity of the components ethnicity, religion/sectarianism, and regional/tribal affiliations as valid distance generators. (Quinlivan 1999; Khan 2007; Louer 2013; Nepstad 2013; Harkness 2016) Accordingly, the following hypothesis is formed:

H₁: The existence of ascriptive recruitment increases the likelihood of military loyalty to the regime in cases of nonviolent anti-regime campaigns.

The second independent variable is the institutional competition between the military and a paramilitary force. Drawing on insights from the coup-proofing literature, the existence of a sizeable second force is expected to function as a counterbalancing measure. This should result in the regime having at its disposal a loyal body of in-group units, reducing the military's unilateral capacity to "tip the balance" during anti-regime protests, and finally to

discipline the military which fears to be replaced or to have to take up a fight in case of supporting the opposition. (Quinlivan 1999; Barany 2016: 25-27; Greitens 2016: 23-30) Potential negative side-effects have already been discussed. The resulting hypothesis reads:

H₂: The existence of institutional competition increases the likelihood of military loyalty to the regime in cases of nonviolent anti-regime campaigns.

The third hypothesis, focussing on regime ties, has been split up in three sub-hypotheses. First, it is expected that the military autonomy is limited by personal ties and the likelihood of loyalty increased by the regime leader being an active or retired professional military. In terms of professional commonality and a shared mindset, it is expected that the military is more likely to support a regime leader which is sharing its esprit de corps (Barany 2016: 24-28) and who is looking favourably at the military as an institution and will more likely ensure its funding and institutional autonomy from civilian oversight. Second, following Feaver's (2003) argument on oversight, a military leader is more likely to partially overcome the information asymmetry issues as he knows the institution and is more likely to detect declining military support and take counter measures. The hypothesis reads:

H_{3a}: The regime leader being an active or retired professional military increases the likelihood of military loyalty to the regime in cases of nonviolent anti-regime campaigns.

Based on the argument about group incentives by McLauchlin and others, it is assumed that the existence of identitarian ties between the regime leadership and the military limits the military's ability to switch sides or defect from the regime due to the negative consequences of regime change institutionally, as well as to its members personally. Applying the same categories as for the ascriptive recruitment variable, namely ethnic, religious/sectarian, and regional/tribal ties, the hypothesis reads:

H_{3b}: The existence of identitarian ties between regime leadership and military increases the likelihood of military loyalty to the regime in cases of nonviolent anti-regime campaigns.

Based on the same argument of oversight, overcoming the information asymmetry, and esprit de corps as expressed in H_{3a} , it is expected that close family members or in-laws of the regime leader serving in high positions in the military will limit military autonomy:

H_{3c}: The existence of family ties between regime leadership and military increases the likelihood of military loyalty to the regime in cases of nonviolent anti-regime campaigns.

Having formulated testable hypotheses, the next section will deal with the operationalisation of the relevant variables and the compilation of the dataset in order to perform statistical tests on the hypotheses' empirical validity.

3. Operationalisation

In order to conduct a statistical analysis attempting to answer the research questions of this study, a dataset had to be compiled which contained the relevant variables. Based on the major explanatory variable of this paper, the dataset was named Military Autonomy Dataset (MAD) and consists of an MS Excel file. The following sections describe its case selection criteria as well as major variables contained in it and the data sources which were used for its compilations. In order to allow for quick referencing and to account for variables of minor interest or those variables which were just instrumental or procedural during the analysis, a codebook for the MAD has been produced and is attached to this study as Annex No III. Within the dataset the variable "sources_comments" provides for the exact source of every coding, referring to the dataset, academic paper, newspaper article, or NGO report serving as proof for classification. If data sources contradicted each other, the choice of coding was noted.

3.1 Case selection criteria

The case selection process started with identifying primarily nonviolent campaigns with maximalist aims. As described above, a campaign is defined as "a series of observable, continuous, purposive mass tactics or events in pursuit of a political objective" and can range from days to years with a minimum number of participants exceeding one thousand. (NAVCO 1.1 codebook, 2011: 3) All included cases saw anti-regime mass protests as integral part of the campaign.

Campaigns had to exhibit maximalist goals, aiming at regime change on the national level and/or self-determination and/or secession. As it might be argued that the incentive structures for all relevant parties might be different in the latter cases, it should be noted that in the dataset only four cases exhibited such features and a statistical sub-model excluding such cases will be compiled to account for potential differences. Domestic regime change on the national level refers to the enforced stepping down from power of the regime leader and/or his cabinet, military junta, party or family or otherwise defined closest circle and their replacement by another group. Claims for resignation of single ministers or figures apart from the regime leader do not qualify as maximalist. Triggers for coding included therefore a) the resignation of a head of state, president, prime minister, or entire cabinet/government and/or b) end of the rule of a certain regime (including military rule), and/or c) free elections, and/or d) secession or self-determination. In order to identify the relevant regime leader at the beginning of the protests, the Archigos 4.1 dataset by Gleditsch et al. has been used, which lists effective primary rulers for each country for monthly temporal resolution. Identifying the effective primary ruler by applying rules of qualitative assessments, the dataset tries to assess power beyond formal positions and exclude potential straw men. (Archigos 4.1 codebook, 2016: 1)

Even though it could well be argued that campaigns below the threshold of demanding regime change and with limited goals such as social, economic, or political reforms or the resignation of single government figures might trigger a serious threat perception by the regime (Davenport 1995), such cases were not considered as assessing regime perceptions in contrast to assessing the openly stated goals of a protest movement has proven to be notoriously difficult. Including them would mean a diffusion of selection criteria as from now on every event could be claimed to constitute a *perceived* serious threat to the regime. Moreover, from a military point of view, the incentive structures to intervene in cases of limited demands are hardly comparable as laid out above. Therefore, a strict selection regarding the campaign's maximalist character is applied in this study.

Lastly, campaigns had to be primarily nonviolent, meaning they overwhelmingly employ nonviolent means such as peaceful protests, boycotts, sit-ins, strikes and alike and refrain from violence against persons. Violent campaigns are characterised by violence being the primary tool of protest a) on a large scale by a considerable number of protesters, b) intentionally as a mean of campaigning, c) repeatedly over time. Occasional throwing of stones by individual protesters or likewise events therefore do not change the classification of the campaign. Even though the classification proves extremely difficult as different parts of the same campaign might employ different methods of overthrowing the regime or

different campaigns might act independently of each other at the same time towards the same goal using different levels of violence, for example the Palestinian organisations or segments of the ANC during the anti-Apartheid campaigns (NAVCO 1.1 codebook, 2011: 4), for most campaigns a classification as primary violent or nonviolent is possible based on an the extensive literature review on which the NAVCO datasets are based.

Data on campaigns until 2006 were derived from the NAVCO 1.1 and NAVCO 2.0 datasets by Chenoweth (2011) and Chenoweth and Lewis (2013) respectively. The NAVCO datasets treat campaigns as discrete events, regardless of their length. The main variable is the dichotomous nonviolent/violent differentiation. The datasets were also used for a variety of other variables in this study, such as protest size or regime violence against protests. Detailed information are given in the respective sections or in the MAD codebook. As NAVCO 3.0 with an extended coverage beyond 2006 was expected to be released in 2016 but fell short of doing so, cases after 2006 were primarily selected based on Koren's Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset (hereafter MSCDMV) and the World Protests 2006-2013 collection (Ortiz et al. 2013). Regarding the latter it should be noted that it is not a ready-to-use dataset but an extensive policy paper describing protest campaigns worldwide, their goals, modes, and the reactions of the authorities. As it is primarily interested in the reasons of social unrest rather than on the violent-nonviolent dichotomy, information needs more processing.

Additional sources, especially concerning the maximalist aims and primarily nonviolence of a campaign, were the Global Nonviolent Action Database (GNAD) and supplementary academic journal and newspaper articles as well as NGO reports. The GNAD (Lakey et al. 2011) started as a collaborative college research project and is comprised of a basic dataset and an extensive corpus of conflict narratives, which were highly useful for coding. However, it should be noted that the dataset is does not extend to all cases covered in this study and that the quality of the conflict narrative descriptions varies quite substantially across cases, both due to different data availability levels as well as the collaborative character of the project. Therefore, wherever possible cross-checks were performed using alternative data sources.

Second, in terms of the temporal focus of the study, it was argued that the end of the Cold War changed the global power structures and persistently altered the cost-benefit calculations of all parties to the analysis. First of all, external regime support for a considerable number of states declined with external military interventions like those of the Soviet Union in Central and Eastern Europe in the 1950s and 1960s becoming less likely. This change made the struggles between the regime and the protest movement more

genuinely domestic. Second, external military support declined as well, both financially and in terms of foreign advisers being attached to the respective domestic armies or structures like the Warsaw Pact or common inter-military manoeuvres reinforcing group-think, thereby altering the degree of internal military autonomy in domestic affairs. Even though the exact parameters of the end of the Cold War have been debated very controversially, the end of the year 1989 was chosen as a cutoff point with the majority of movements in Central and Eastern Europe overthrowing their domestic communist regimes. In order to account for campaigns which lasted over several years, inclusion into the dataset required that at least parts of the campaign took part in or after the year 1990. It was also decided to eliminate cases in Central and Eastern Europe during this time which were directed against domestic communist governments due to the then likelihood of external intervention by the Soviet Union. An example for this policy of restriction might be Lithuania where the campaign lasted until 1991 but was excluded due to the high risk of external intervention and issues in identifying whether both the regime and the military were genuinely domestic. As end point the year 2011 was chosen as this covers the first year of the Arab Spring in most countries but avoids issues due to campaigns changing their peaceful primary mode of operation over time in several countries. Ongoing campaigns were therefore cut off at the end of 2011.

The third limitation is the synchrony of regime, military, and protest movement in terms of national affiliation. Based on the NAVCO 1.1 selection rules, campaigns aiming at the expulsion of foreign occupiers, as for example in colonial protests (NAVCO 1.1 codebook, 2011: 32), are not covered in this study. This is based on the empirically well-founded assumption that confrontations between a foreign regime and army and a local protest movement will produce different, probably more violent results due to the massively increased social distance between the actors. (see Earl and Soule 2006) Amongst others, this rules out the Lebanese Cedar Revolution in 2005, which had the main goal of ending the Syrian Army's presence in Lebanon.

Fourth, the campaign had to take place in a sovereign state, excluding both stabilised de facto regimes as well as movements against colonial rule.

Fifth, the state in question had to possess a formal state military, which was armed, permanent in character, based on a hierarchical system, and subdued to a chain of command. This was given in all cases initially examined.

Finally, the state had to be no full democracy in the year prior to the conflict as for reasons laid down in the theoretical section, it is believed that militaries in non-democratic regimes act under different sets of incentives than those in full democracies. (Rubin 2001) Given

the controversial data collection and classification methods of different assessments of democracy and its grey areas and the risk of omitting either too many or too few crucial cases and thereby spoiling the coding (Hogstrom 2013), it was deemed essential to cross-check results by employing the two most widely used democracy indicators. Measurements of this variable were conducted by cross-comparing the respective assessments of the Polity IV project and the “Freedom in the World “ index by Freedom House. Cases were therefore only included in the dataset if they were not coded either “free” by Freedom House, resembling a “Freedom Rating” between 1.0 and 2.5, or “democracy” by the Polity IV project, resembling a score between +6 and +10.¹³ Even though it might be assumed that this cross-checking approach eliminated a relatively high number of additional cases, only four additional cases were eliminated compared to using either or approach.

Estimates were derived for t-1 respectively. This lag was included to avoid endogeneity issues due to reductions in democracy values based on counter measures against the protest movement as democracy measurements are compiled ex post for the prior year.

An initial sample of 62 post Cold War cases was examined based on these criteria, of which 44 managed to fulfil the criteria listed above.¹⁴ Most of the cases failed to qualify as non-democratic regimes or were effectively occupied by a foreign power at the time of the campaign. Having selected the cases, a thorough operationalisation of the variables employed in the analysis and the data sources used for data collection and coding will take place in the next section.

3.2 Operationalisation of variables and biases of data sources

This section will be organised along the categories of variables in the dataset: identifiers and descriptive variables, independent variables, dependent variables, and control variables. Only variables relevant to the analysis will be discussed here, merely procedural

¹³ Polity IV scores range from -10 to +10 with the following classifications being applied: autocracy (-10 to -6), anocracy (-5 to +5), and democracy (+6 to +10).

Freedom House “Freedom ratings” range from +1 to +7 with the following classifications being applied: free (1.0-2.5), partly free (3.0-5.0), and not free (5.5-7.0)

For detailed information on coding please refer to the Polity IV and Freedom House codebooks. For issues regarding the measurements refer to Hartmann (2015: 141-52) and Hogstrom (2013).

¹⁴ For purposes of comparison it should be mentioned that Tofalvi identifies 48 cases for a roughly similar time frame (1990-2012) while Koren lists 97 cases for a much more extended period from 1972-2011. (Tofalvi 2013: 92; Koren 2014: 701)

variables which are needed for intermediate computational steps are omitted and can be found in the MAD codebook, marked by an asterisk.

Moreover, it should be noted that many variables have to be derived for t-1 as otherwise the analysis would suffer from endogeneity biases. The very existence of a large-scale anti-regime movement in t is likely to influence the structure, size, and funding of the military, the creation of paramilitary forces, or socio-economic indicators.

Concerning datasets, they are introduced once and will be referred to afterwards without further explanation, if no particular cause advocates such behaviour. Concerning potential biases in the sources of the dataset, the mere number of datasets, academic sources, newspaper articles, and NGO reports limits their individual discussion. However, based on the main datasets used in the assessment, some likely biases include definition comparability issues, a centre-periphery bias, a tendency to more concise information being available for more recent cases, and a democracy level related reporting bias.

The majority of the datasets used employ a wide array of sources to determine coding but as all highly aggravated data are likely to suffer from comparability issues across datasets based on diverging definitions of phenomena. Furthermore, expert assessments widely used in datasets are based on readily available information and therefore suffer from the biases below as well.

In terms of temporal coverage, more recent cases are likely to exhibit more data points on every possible variable as information is more readily available even for remote countries in Sub-Saharan Africa or alike which is true only in a very limited way for the late 1980s. Modern communication technology allows for a plethora of information being spread outside the traditional channels of the major news agencies. Even though this is an advantage in terms of coverage, the sources need to be assessed more carefully if non-standard resources such as blogs are used as the reliability of the information cannot be as easily guaranteed as for traditional news sources.

Concerning centre-periphery issues, reporting on events in the periphery is less likely to take place with fewer correspondents being present and the international news agencies assuming that localised events in remote areas are of less interest for their readership. (Davenport and Ball 2002) Accordingly, accurate data on such movements is less easily available and could lead to campaigns being either not reported at all or failing to be incorporated due to missing information on protest campaign size or failing to cross the threshold. Self-determination and secession campaigns are expected to be more prone to this phenomenon as they tend to take place in remote areas rather than the well-covered capital cities. Their share of the dataset might therefore be lower than one might

reasonably expect. In conjunction with the prior argument on coverage and new information technologies, this might have changed for the 2000s but is certainly valid for the 1980s and 1990s.

Lastly, a democracy level bias exists which is based on the freedom of the press. While regimes close to the democracy threshold are relatively likely to allow for some freedom of the press and thereby making information about themselves accessible, the most closed autocracies can usually only be evaluated on educated guesses and expert estimates, thereby producing data availability and reliability issues.

Having assessed these general patterns, it is important that each and every data source exhibits some limitations and biases. Where those were expected to potentially distort coding procedures or estimates, they were highlighted in the respective variable section.

3.2.1 Identifiers and descriptive variables

Starting off with the most basic variables, every case has a specific numeric ID (*id*) attached for unambiguous identification. Campaigns have a name (*campname*) which is in most instances derived from either the NAVCO or MSCDMV datasets and contains the country name and the campaign period. The contemporary English country name is given as an extra variable (*name*); this is relevant where names changed over time such as in Burma/Myanmar. The variable might have a closer location attached to the country name in parentheses such as “Czechoslovakia (Slovakia)” representing the regional focus of the campaign. Two variables (*startyear* and *endyear*) mark the first and the last major manifestations of protests during the campaign and an additional variable (*t-1*) indicates the year prior to the first protests. This variable is instrumental for data collection on all variables with a temporal lag, comprising large parts of the dataset. Those variables are primarily derived from the NAVCO and MSCDMV datasets as well.

Maximalist aims (*maxaims*) is a binary variable measuring whether or not the campaign was maximalist in the sense of the NAVCO classifications, meaning being directed towards overthrowing the domestic regime (>90% of cases) and/or had self-determination or secession as primary goal.¹⁵ Most coding proofs are derived from NAVCO and the

¹⁵ This low number of secessionist or self-determination campaigns might be explained by the fact that the vast majority of independence-seeking campaigns has an identitarian, often ethnic, background and ethnic conflicts regularly tend to be resolved in a more violent fashion by means of terrorism, guerrilla warfare, and civil war. (Fearon and Laitin 2003; Denny and Walter 2014)

MSCDMV with some supplements from the GNAD, World Protests 2006-2013 and occasional additions from academic, newspaper, and NGO sources.

For each country the effective primary regime leader's name (*regleader*) at the beginning of the protests was determined using the Archigos 4.1 dataset by Gleditsch et al. as described above. (Archigos 4.1 codebook, 2016: 1) A valuable additional source were the respective rulers' Encyclopaedia Britannica Online entries. This source also proved useful in finding initial indications about a ruler's mode of entry into and exit from government as well as about his personal relationship with the military.

Concerning regime violence (*regviol*), this paper employs a binary variable identifying whether the regime used violence to crack down on a campaign. Having to decide between a qualitative and a quantitative measurement, the latter was deemed to be more adequate as the comparability and reliability of coding across cases can be better ensured this way. A threshold of 50 fatalities amongst protesters related to regime violence during the campaign was adopted for a positive coding, any fatality numbers below resulted in a coding of zero. (Koren 2014: 690) Protester fatalities were defined as active campaign members being intentionally targeted by state security agencies based on their role in the protests. Co-incidental deaths or fatalities due to clashes with counter protesters were not considered.

Even though the threshold of 50 fatalities is essentially arbitrary, it seems a reasonable amount to distinguish cases of minor police brutality from intentional crackdowns ordered by the government. Moreover, none of the available datasets adequately attribute fatalities to different security agencies. It should therefore be noted that crossing the threshold does not necessarily indicate the deployment of the military or violence being perpetrated by the military. However, as it is assumed that the deployment of the military tends empirically to go along with higher numbers of fatalities, this relatively high threshold reduces the risk of capturing non-military violence only. No evidence was found that countries with a smaller population and therefore a lower number of potential number of protesters were disadvantaged by a fixed number of fatalities. Very few cases are clustered around the threshold, usually the fatalities are either considerably lower or higher. As data sources for regime violence the NAVCO, MSCDMV, and GNAD datasets are being used. Moreover, information was derived from the World Protests 2006-2013 collection. Highly useful proved the so-called Conflict Barometers, annual reports on global conflicts released by the Heidelberg Institute for International Conflict Research (HIIK).¹⁶

¹⁶ Please note that until 2007 the publication was called Konfliktbarometer and was issued in German language.

Their clear advantage is a good overview over conflict situations but they suffer from inaccurate reporting on numbers (“ten thousands of protesters”) and do not build up to a comprehensive and easily searchable dataset. More than in other cases, this variable required a high number of additional data sources ranging from academic papers over newspaper articles to NGO reports with cross-checks being employed wherever possible. An initially tempting alternative dataset employing a quantitative measure for this variable, namely the *UCDP One-sided Violence Dataset* (see Melander, Pettersson, and Themnér 2016) covering the 1989 to 2015 period, was discarded due to its annual coding procedures based on a threshold of 25 fatalities per year. First, this threshold is relatively low and might easily cover low-intensity police violence over a longer period of time only. Second, many cases were missing in the dataset in the first place, and in an initial test sample the returns from the dataset did not adequately reflect the length and intensity of several disobedience campaigns due to several years of a campaign falling below the threshold and thereby making coding harder than necessary.

In order to distinguish campaign modes as laid out in the case selection criteria, a binary variable (*campmode*) is specified with 0 coding primarily violent and 1 primarily nonviolent campaigns. Specifications and datasources as listed above.

The last descriptive variable contained in the dataset (*sources_comments*) provides information on sources used for the coding of each and every observation per case and potential comments or issues related to the coding. Cases which did not proceed to analysis for reasons listed in the case selection section are indicated by “EXCLUDED” and a short explanation.

3.2.2 Independent variables

Turning to the independent variables, it should be noted that the assumed parts of military autonomy are ascriptive recruitment, institutional competition, and ties between the regime leadership and the military of which this paper takes into account personal, family, and identitarian ties, the latter consisting of ethnic, religious and sectarian, and tribal or regional ties. All of these variables are binary and expected to affect loyalty in a positive way. As no quantitative measures are able to capture those relationships accordingly due to the low availability of reliable quantitative data across time and cases, a qualitative assessment based on an extensive desk research was performed.

In order to operationalise ties between the military and the regime, the regime leader was chosen as central figure for whom those ties with the military are being controlled for. This

limitation arises from the impossibility to exactly determine which people constituted the closest regime elite circle in each and every case and to examine the manifold relationships between this number of individuals and the military. On the side of the military no limitations were made concerning the target group of the ties, accordingly these may apply to either the top echelons, the officers corps, or the entirety of rank and file or sub-groups of those.

As proving the non-existence of such ties is more or less impossible, the condition for coding in every case was that reliable information was given on the existence of ties between a relevant portion of the military and the regime leader. Accordingly, the coding of zero does not necessarily mean that no such ties exist but just that information on them were not readily available, not publicised, or failed to be proven by reliable sources.

Ascriptive recruitment

Ascriptive recruitment (*ascrec*) is a binary variable measuring the existence of ascriptive recruitment patterns in the military in t-1 or the next available prior data point. Ascriptive recruitment refers to preferred recruitment of members of identitarian groups of common ethnic, religious/sectarian or regional/tribal background into the military, ensured by either privileged access or discrimination against other groups. As described in the theoretical section, it is assumed that the existence of such ties should reduce the likelihood of the military defecting from the regime due to the higher social distance if essential parts of the military exhibit a different identitarian backgrounds to the protest movement. Due to missing data on both groups it was not possible to conduct extensive tests for whether or not the identitarian background was different in each and every case but as a rule of thumb, based on an assessment of the dataset, this assumption is believed to hold true, as empirically in culturally diverse countries the groups protesting tend to exhibit a different identitarian background from both the regime and the majority of the military or the relevant circles within it.

Accordingly, a value of 1 has been assigned if a) the share of the respective group across the military is significantly higher (~20%, to account for minor groups not engaging in military service, historical anomalies, statistical coincidences or idiosyncrasies of individual cases, and different demographic structures of sub-parts of a society) than its share amongst the general population or b) qualitative assessments indicate the existence of ascriptive recruitment over time. Thereby no distinction between the military top echelons, the officers corps, and rank and file selection was made; if evidence existed for any of these groups exhibiting a characteristic composition significantly diverse from the general

population a positive coding was assigned. The value of 0 was assigned otherwise. As noted above, 0 represents rather “no evidence” than a strict claim on non-existence due to the difficulties of proving a negative.

In terms of data sources it should be noted that there is no comprehensive dataset on ascriptive recruitment in existence and prior research more or less entirely relied on case studies. (Johnson 2013) Moreover, data availability in general tends to be rather low intentionally:

“Countries do not usually publish data on the ethnic breakdown of their military, especially in cases where ethnicity is highly salient. [...] In general, when information on ethnic recruitment is politically or militarily sensitive, because of one group’s ratio being very high – e.g., when the ruling ethnic group staffs the military entirely with its own members – or having a very low representation – e.g., when a large minority group is being deliberately excluded – this information is not reported by government sources in order to avoid stirring up trouble.” (Johnson 2013: 9-10)

Due to those data availability and reliability issues over time, a qualitative approach is chosen. Data was derived from a variety of datasets, primarily the MSCDMV, the GNAD, and the World Protests 2006-2013 collection. Moreover, the HIIK Conflict Barometers proved useful for obtaining initial hints. However, this variable ranked very high amongst those which required additional data from academic journals, newspapers, and NGO sources. Lastly, it should be noted that data for t-1 was quite often not available as the last category of sources described general trends and patterns rather than providing exact estimates for particular years. As those patterns were assumed to be relatively stable over time for a given regime, they have been assumed to exist in t-1 wherever this assumption seemed reasonable based on prior data points.

Based on the estimates of this variable, a categorical variable defining the primary recruitment pattern (*ascrectype*) was established. It codes ethnic recruitment as 1, religious/sectarian as 2, and regional/tribal as 3. The variable serves descriptive purposes only.

Institutional competition

The binary variable institutional competition (*instcomp*) measures whether or not in t-1 a second force existed which potentially posed an institutional challenge to the military. To obtain a coding of 1 it had to be part of the formal state security sector, paramilitary in character, permanent in its structures, exhibit a hierarchical structure, consist of at least 1,000 members, and be subdued by a chain of command to the regime. Typical cases of second forces include Presidential Guards, Republican Guards, Revolutionary Guards,

special forces, and heavily armed paramilitary police or militia. The value of 0 was assigned otherwise.

Generally excluded were units from the state security sector which were merely responsible for policing, law enforcement, border protection, civil protection, customs, and coast guard services or were in their character local self-defence forces as they performed tasks and exhibited structures too varying from those of the military to pose an institutional challenge to the latter.

Moreover, forces not being part of the formal state security sector such as ad hoc formed unofficial local self-defence forces, pro-government militias, armed youth-movements, tribal militias, and alike were not considered as they do not pose an institutional challenge either.

For this assessment the Military Balance (IISS), hereafter MB, served as primary source whether or not a paramilitary force existed at all and whether it qualified according to the criteria above. The Military Balance is an annual expert assessment by the Institute of International Strategic Studies (London) of global military capacities and provides data per country-year from the early 1960s onwards. Its main features are manpower across branches, extensive listings of equipment, and financial resources. Concerning the use of the Military Balance, the relatively recently established Military Balance+ Dataset would have been a highly valuable resource but short of having access to this pay-wall protected comprehensive data source, information had to be derived manually from the respective yearly assessments, massively increasing the amount of time needed and increasing risks of potential coding errors. Minor issues also arose from the change of the annual publication date and covered period which occurred several times over the investigation period. In every case the volume which covered the majority of days for any given t-1 was chosen.

Where classification of the second force or parts of it remained questionable based on the information derived from the Military Balance, additional academic and NGO sources were consulted to determine the status of the second force as potential institutional competitor to the military. In a few cases (Iran's Revolutionary Guards, Saudi Arabia's National Guard, Syria's Republican Guard) effectively paramilitary forces with independent structures were officially listed as part of the military in the Military Balance while in this study they were considered paramilitaries and counted accordingly.

Regime ties

The variable regarding the existence of ties between the regime leader and identifiable portions of the military (*regties*) consists of several sub-variables which examine the relationships with regard to personal (*regties_a*), identitarian (*regties_b*), and family ties (*regties_c*). Like ascriptive recruitment the identitarian ties have been additionally split up in ethnic (*regties_b1*), religious/sectarian (*regties_b2*), and regional/tribal (*regties_b3*) ties. All of them are constructed as binary variables.

Personalist ties (*regties_a*) refer to the status of the regime leader as former or active career military. The value of 1 was assigned if the regime leader is or was a high-ranking active or retired professional military of the given country's military himself.¹⁷ This definition only includes trained career militaries but not leaders having served mandatory service times or volunteered for a few years only. If in doubt, a threshold of ten years of service is employed to distinguish career militaries. The definition also excludes nominal posts and positions being held qua office, for example heads of states being the nominal commanders in chief of their militaries. A value of 0 assigned otherwise.

Besides the general sources used for regime ties assessments, which will be listed below, the Political Roles of the Military Dataset (PRM) by Croissant et al. was highly useful for initial clues, even though it only covered cases from 1999 to 2012 and was relatively often contradicted by other sources. Where in doubt, a third source was employed to determine the coding.

Identitarian regime ties (*regties_b1*, *regties_b2*, *regties_b3*) consisted of ethnic, religious/sectarian, and regional/tribal ties. A coding of one was assigned if in the particular case an identitarian commonality between the regime leader and significant parts of the military, regardless of whether top echelons, officers corps, or rank and file, existed which distinguished them from significant parts of the population. As this condition is next to impossible to quantify, the assessment was based on a qualitative assessment following an extensive desk research. Where no significant differences between the regime leader, the military, and the general population existed (for example in cases of highly homogenous societies like Egypt or Tunisia), the coding of 0 was assigned. However, it should be noted that this coding also indicates "no evidence" as described above.

¹⁷ This restriction of having served or hold a position in the respective country's given military is employed as foreign ranks are believed not to create the same corporate identity between a leader and his military. For example, Franjo Tudjman of Croatia used to be a general of the Yugoslav Army but failed to qualify for personalist ties as he did not serve in the Croatian army.

Family regime ties (*regties_c*) indicate the existence or absence of family ties between regime leader and military in t-1 or the next available data point by family members or in-laws of the regime leader serving in high positions in the military. Coding as 0 refers to “no evidence”.

In terms of sources for all assessments, the Archigos 4.1 and the Political Roles of the Military Dataset proved highly useful. Moreover, many initial clues were derived from the respective leaders’ Encyclopaedia Britannica Online entries and the HIIK Conflict Barometers as well as the MSCDMV dataset. Assessments of specific relations were mostly conducted by obtaining additional evidence from academic and NGO sources and occasionally from newspaper articles.

3.2.3 Dependent variables

The dependent variable of the study is the loyalty and disloyalty of the military in non-democratic regimes during nonviolent campaigns with maximalist aims. The binary variable for loyalty (*loyalty*) codes whether or not the military remained loyal to the regime during a campaign. A mirror variable (*disloyalty*) with inverse assignment criteria was created for reasons of analysis. Loyalty is a qualitative assessment with the value of 1 being assigned if no evidence of widespread defection from the regime is available. The value of 0 is assigned if widespread defection from the regime took place across the military and included a high number of soldiers and/or the officer corps and/or the top leadership. Defection therefore refers to 1) desertions, 2) insubordination and refusal to obey orders, 3) non-ordered withdrawal to the barracks and/or refusal to march out in the first place, 4) fraternisation with the protesters, 5) openly siding with the protesters, 6) attempting to perform a coup against the regime. As quantitative assessments are impossible due to data availability and reliability, a qualitative assessment of the given sources is enacted as identification procedure. This procedure was surprisingly unambiguous for the cases in the dataset as normally either complete loyalty or complete defection took place. It is argued that this is based on Geddes’ argument on cohesion as basic logic of functioning of the military with splits breaking up the hierarchies and the undisputed chain of command and therefore being avoided at pretty much all costs. (Geddes 1999, 2004)

Accordingly, the supplementary binary variable on the occurrence of splits in the military (*split*) during campaigns yielded next to zero positive results. A split hereby was defined as at least 10% of the military choosing different sides in the struggle between regime and

protest movement and opposing each other militarily. Surprisingly few cases see open splits in the military and none of those made it to the analysis stage.¹⁸ As regularly splits lead to a civil war, this might explain that many cases which experienced splits were omitted in the initial selection due to being coded as violent campaigns by the composers of different datasets.

Most important sources for the coding were the MSCDMV dataset and the GNAD as well as the HIIK Conflict Barometers and the Archigos 4.1 for initial evidence. Supplementary academic, newspaper, and NGO sources were employed where necessary.

3.2.4 Control variables

This section is wrapped up by the control variables employed to test for the statistical quality of the results obtained from the regression model. Their main purpose is to control for explanations besides military autonomy being relevant as laid down in the literature review.

Conscription

Conscription is a binary variable identifying enlistment (0) and conscription (1) as primary mode of recruitment into the military in t-1 (*conscript*). More than fifty percent of personnel being conscripts results in coding 1 being assigned, less in coding 0 being assigned. Conscription is also coded as existing when it is stated as primary mode of recruitment without shares by the Military Balance. Due to the 50% recruitment threshold, a small number of cases with nominally existing conscription were coded as 0.

The existence of conscription is expected to lower the likelihood of the military remaining loyal to the regime. As explained above, it is assumed that the relatively small social distance between conscripts and protesters will reduce the likelihood of the military staying loyal if it is ordered to crack down on protesters. Moreover, conscripts have a lower personal expected return on investment compared to professional soldiers which rely for promotion, careers, and social security on the regime employing them. (Tofalvi 2013) Data were primarily derived from the Military Balance. Rare missing values until 2005 were cross-checked with the Military Recruitment Dataset (MRD) by Toronto (2005), afterwards no missing values exist. The MRD is a comprehensive dataset listing annual primary recruitment patterns per country on a global level. The coverage varies with the longest

¹⁸ Syria 2011 was excluded due to the campaign mode, Madagascar 2008 due to its democracy status.

time-series starting in 1816 and ending in 2005. Its reliability is high given cross-checks with the Military Balance and other sources.

Military size and size of the armed forces in comparison to population and protest size

For purposes of comparison, variables for size of the military (*milsiz*) and size of the armed forces (*armforsiz*) were created. They measure the nominal manpower of the regular military or the combined regular military and qualified paramilitaries as laid down in the institutional competition section for t-1. Only active personnel was included while reserves were excluded due to the widely varying connotation of the term and the readiness of those units for service. Measurements were taken from the Military Balance. Based on the argument of the military being able to effectively control society and defend the regime against internal challenges (Bellin 2012: 131; Nassif 2015: 270-74), the variables were put in relation to the population numbers, measuring soldiers (*milstrength*) and members of the armed forces per capita (*armforstrength*) in the respective countries. Based on the same argument, measurements for the soldiers (*milprotest*) and members of the armed forces (*armforprotest*) ratio to protesters were computed but due to issues with the reliability of the protest size estimates they did not proceed to analysis. Moreover, this measure fails to deal with the localisation issue which is particular to protests: a mere nominal superiority or high numerical capacities cannot give insight into whether or not on the spot this superiority was existing and thereby diminishes the validity of the argument without introducing measures for actual capacities for single instances. Unfortunately, those are prone to fail due to data availability issues. However, in general, high nominal and relative capabilities were expected to increase the likelihood for loyalty.

Population size

Population size (*popsiz*) is a cardinal variable measuring population numbers for t-1 or the next available prior datapoint. It is a standard control in conflict research, taking into account the empirical finding that increased population size tends to initially increase the risks of conflicts of any sort and should therefore be included into the analysis. (Fearon and Laitin 2003; Brückner 2010)

Protest size

The size of the protest campaign membership (*protestsiz*) has proven to be very difficult in operationalisation. Based on the NAVCO classifications it was meant to assess the maximum campaign membership at the peak campaign event (NAVCO 1.1 codebook, p.

12, 33). Due to data availability issues after the end of the NAVCO datasets in the post-2006 period, hardly any systematic data are available and the only available estimates were anecdotal maximum protest sizes for a particular event. For the events of the Arab Spring, the Arab Awakening Protests Dataset (AAPD) by Jenkins and Herrick (2013) provided measures for certain but by far not all events and without a possibility to assess whether or not peak events were covered. Moreover, it employed a classified measurement based on seven classes which covered very broad areas each, the leap between class five and six being 900,000 participants. Initial attempts to assume either the upper or lower end of the range as given value were discarded due to distorted results. Estimates presented in the dataset assume the respective upper end of the given class as discrete observation. Furthermore, as there were no adequate and accurate measurements which could stand a critical test available for the cases between 2006 and 2010, it was finally decided to omit the variable from the analysis. This is highly unfortunate as the arguments made above about military capacity vice versa protest size and the general mobilisation levels against the regime serving as an indicator for the military on perceived regime support and legitimacy in the general population and adequate decision-making would have been highly valuable supplements for the control section. (Nassif 2015) However, the influence of the protest size on outcome variables like success of the movement is disputed with several authors claiming that the effectiveness, cohesion, and operational style of the movement is more important than its mere size (Tufekci 2017); accordingly the omission of the variable can be justified theoretically as well.

Democracy indicators

Democracy indicators are a variety of measures by Polity IV and the Freedom House project as described in the case selection criteria. They are used for purposes of selection as only non-democratic regimes proceeded to the analysis stage based on the theoretical claim on incentive structures.

GDP and GDP per capita

These variables are expected to control for different levels of socio-economic standards per country and are classic measures in conflict research. (Fearon and Laitin 2003) While total GDP per country for t-1 or next available prior datapoint in US-\$ billions (*GDP*) is used for computational purposes, the more telling value per capita (*GDPcap*) is proceeding to the regression. Both values stem from the Military Balance. In three cases of

former Soviet republics (Georgia, Kyrgyzstan, Belarus) US\$-PPP were given and used as substitutes. The small number should not distort the estimate.

Defence budget increase

Based on Bellin's (2004, 2012) argument on the financial health and subsequent loyalty of the military, variables for the defence budget in US-\$ millions for t-1 (*budgettot_t-1*) and t-2 (*budgettot_t-2*) or respective next available prior data points were introduced to compute the increase in percentage points from t-2 to t-1 (*budgetinc*). It is expected that a higher increase positively correlates with higher loyalty.

A second variable compares, in a binary manner, the increase between t-2 to t-1 with the average annual increase in the t-5 period (*budgetinccomp*). Having annual data (*bt-5, bt-4, bt-3, bt-2, bt-1*) and a computed average value for the t-5 period (*budgetinc5*) the variable assesses whether (1) or not (0) the defence budget increase in the year prior to the start of the campaign was higher than in the preceding five year period. It is expected that positive increases both in comparison to the past as well as in very recent times will have a positive impact on the military's likelihood of remaining loyal. Lastly, for computational reasons a variable covering the defence budget's share of GDP (*budgetperc*) was set up.

In its majority, the data stems from the Military Balance and the SIPRI Military Expenditure Database (2017) which provides time series data on military spending for countries during the 1949–2016 period. A difference in methodology arises as MB data are based on annual exchange rates between the local currencies and US-\$ while the SIPRI estimates are normalised for 2015 exchange rates. This could lead to minor estimation inaccuracies but due to the high majority of SIPRI estimates compared to MB numbers they should remain below critical levels.

Country size

Country size is a cardinal variable (*countriesize*) measuring country size in square kilometres for t. Country size is a country's total land area, excluding area under inland water bodies, national claims to continental shelves, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes. Data are obtained from the The World Bank World Development Indicator series (2017) in co-operation with the Food and Agriculture Organization. Missing values for Yugoslavia and Czechoslovakia were computed by adding up the surfaces of their respective parts from back then.

Based on prior studies on the risk of initial conflict onset, it is assumed that larger surfaces increase the chances of protest movements being set up in the first place and should be controlled for. (Fearon and Laitin 2003)

Ethnolinguistic fractionalisation

The last control variable is ethnolinguistic fractionalisation (*fraction*), a continuous variable ranging from 0 (total homogeneity) to 1 (total heterogeneity). It is believed that a certain heterogeneity of the population is a precondition for ascriptive recruitment and identitarian regime ties and should therefore be accounted for. Additionally, based on the argument made by Hendrix and Salehyan (2016), it is more difficult for a regime to deploy its army or parts of it if both the army and the society are extremely heterogeneous, as the regime leadership must doubt the reliability of those portions of the troops which exhibit high identitarian and social commonality with the protesters and thus has to expect considerable potential costs due to the increased likelihood of defections. Therefore, the inclination of the regime to deploy the army in the first place might be lower, thus decreasing the risk of creating situations which could lead to defections. Accordingly, the likelihood of loyalty should increase with rising fractionalisation.¹⁹

Among the manyfold possible measurements for ethnolinguistic fractionalisation the Ethnolinguistic Fractionalization Index (ELF) by Roeder was chosen. It provides an index ranging from 0 to 1 which describes the likelihood of two randomly selected individuals in a given country belonging to a different group. This measure was preferred compared to other datasets measuring ethnicity or fractionalisation such as the Minorities at Risk (MAR) project or the the Ethnic Power Relations Dataset (EPR) (Wucherpfennig et al. 2011; Vogt et al. 2015). In contrast to the MAR it does not only focus on politically relevant or discriminated against groups and compared to the EPR or its geo-referenced cousin GeoEPR, it provides computable continuous values instead of polygons of settlement patterns necessarily leading to a binary variable approach. Moreover, it included values for former Czechoslovakia and Yugoslavia. All values were assumed for 1985, which provides a comparable overview for a year prior to the start of the investigation period. Estimates for more recent cases are expected to be slightly less accurate due to the time difference,

¹⁹ However, regimes might adapt to this by deploying only troops of diverging identitarian backgrounds. In doing so, the social distance between protesters and military would be extraordinarily high and might therefore result in increased likelihoods for both loyalty and regime violence. Evidence suggests that for example the Syrian regime during the early stages of the anti-regime protests deployed primarily Alawite units which were sent all over the country instead of using local garrisons made up of Sunni soldiers, thereby deliberately not using major parts of its armed forces. (Holliday 2013a) The obvious disadvantage of such a deployment strategy is the impossibility of making full use of the whole capacity of the armed forces.

however, as population structures tend to exhibit a surprising stability over time, this is expected to be a negligible factor. (Marquardt and Herrera 2015)

After having finished the coding procedures and the compilation of the dataset, random double checks were conducted in order to ensure coding reliability. Therefore six cases (about 10% of the total cases in the initial selection) per variable were selected based on their unique identification number through an online random number generator tool (True Random Number Generator, <https://www.random.org>) with the lowest and highest continues ID numbers serving as minimum and maximum value respectively and double-checked for proper coding again. As no relevant derivations were found, the quality of coding seems appropriate, even though the law of high numbers suggests minor coding errors being likely to occur. External double-checks would have been even more efficient but were omitted due to constraints on time and the need to train external coders.

Having operationalised all variables and related data sources, the next section will deal with the actual analysis of the data.

4. Analysis

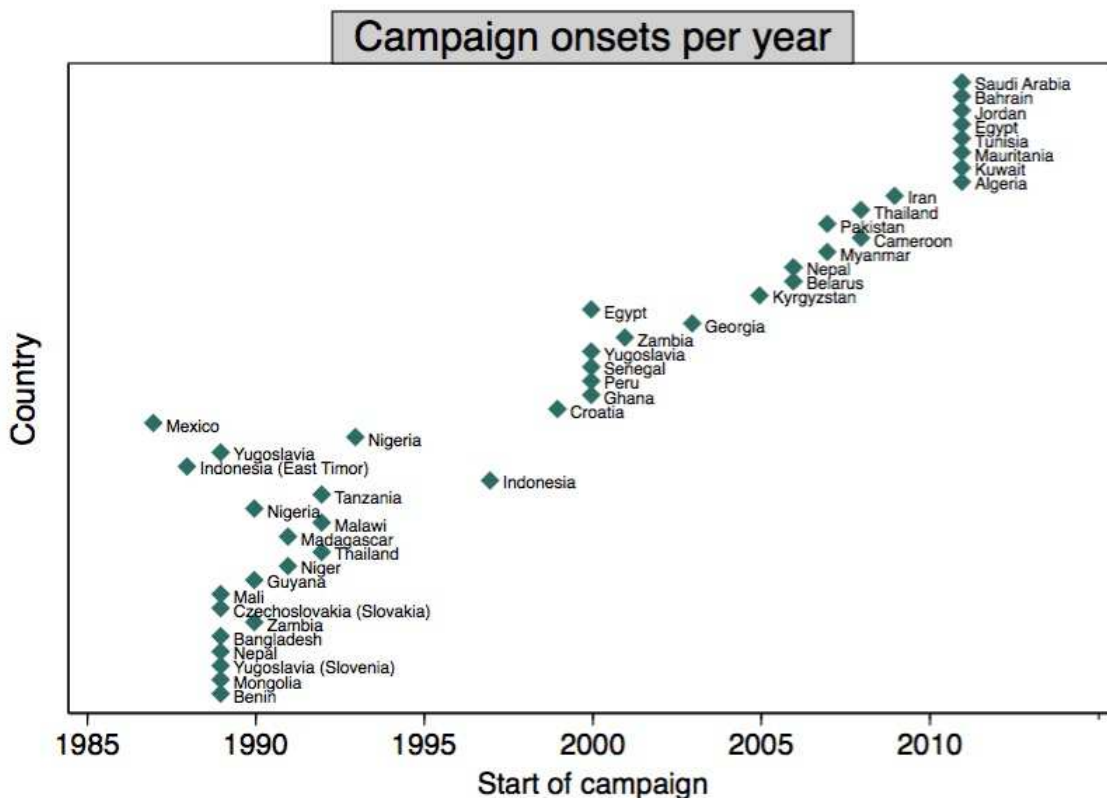
This section starts off with a general data overview and provides results of descriptive statistics and notable relationships between specific variables. Afterwards the specification of the regression model including an initial correlation matrix of independent variables will take place, followed by a discussion of the results of the regression model and its sub-models.

All calculations outside the initial dataset calculations conducted with MS Excel were performed by employing Stata 14.2. Scatterplots and boxplots as well as correlation matrices and regression tables derived from the Military Autonomy Dataset were initially configured with Stata 14.2 while the styling of output for use in this paper was performed using iWork Pages. The initial dataset in Excel file format and the Stata do file and log file are annexed to this thesis as soft copies on CD-ROM.

Maps displayed in the analysis section were produced using QGIS 2.14.3 Essen. The QGIS shorthand commands are attached to this thesis as Annex II.

4.1 Descriptive statistics

Having proceeded through the analysis by means of employing Stata²⁰, this section will provide initial descriptive statistics concerning the composition of the Military Autonomy Dataset. The dataset contains a total of 44 observations fitting the case selection criteria from a total of 62 cases initially examined. Most failed to qualify for analysis due to their status as democracies or due to the campaigns not exhibiting maximalist aims. The mean length of campaigns as discrete observations in the dataset was 1.86 years, ranging from a few weeks up to thirteen years. The earliest case started in 1987 while the last observed ones ended in 2011 with ongoing cases at the time being cut off. Graph No. 6 visualises the patterns of campaign onset. On average, the countries in the dataset exhibited a Polity

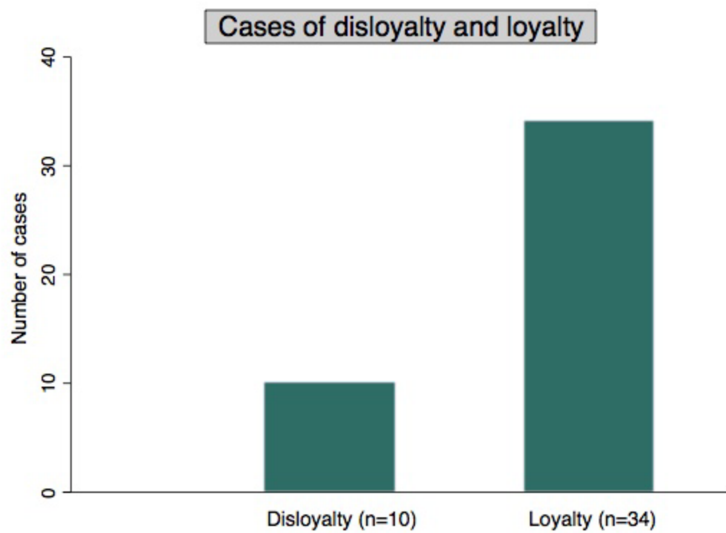


Graph No 6: Scatterplot campaign onsets per year in the sample, 1987-2011.

Source: Own graph.

IV score of -4.48, thereby bordering between full autocracies and anocracies. As shown in the adjunct histogram, in the overwhelming number of cases the military remained loyal to the regime. Out of 44 instances, only ten saw instances of disloyalty as described in the

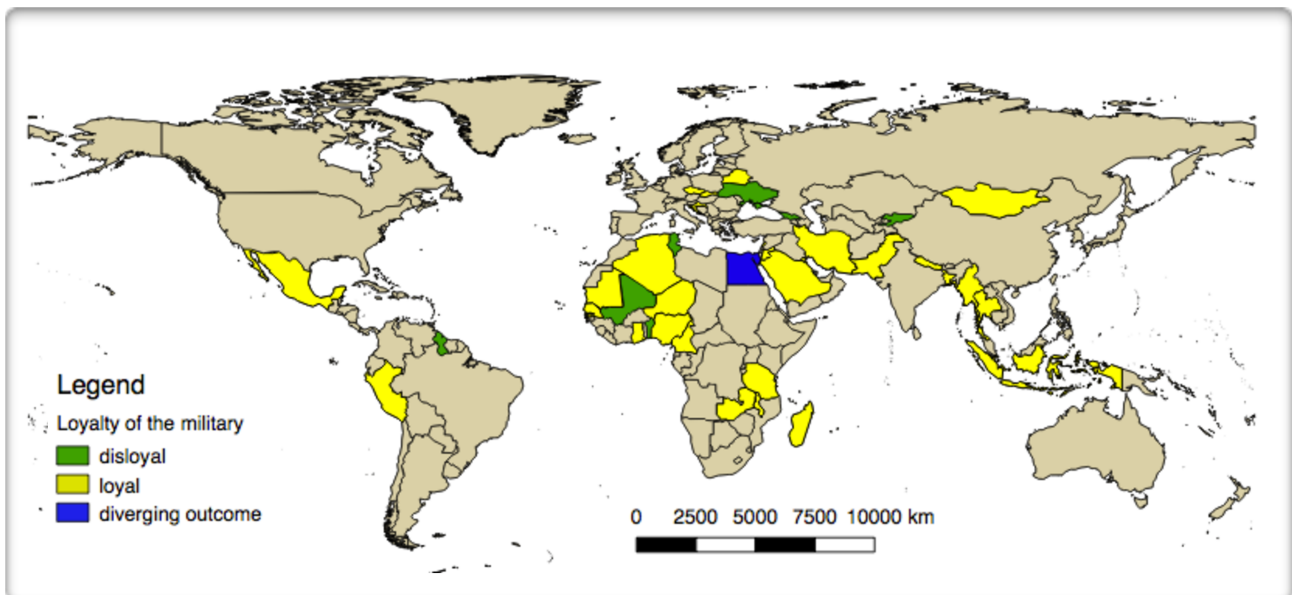
²⁰ For a detailed account of operations performed please refer to the Stata do file and log file in the electronic annex.



Graph No. 7: Histogram distribution of disloyalty and loyalty in the sample, 1987-2011.
Source: Own graph.

operationalisation. This equals a share of 22.73%. In the other 34 cases, accounting for more than three quarters of the whole dataset, the military remained loyal.

Moreover, as Map No. 1 reveals, no regional clusters of disloyalty are observable with the cases being spread out over all four continents covered. Interestingly, Egypt appears in the dataset twice for different campaigns (2000 and 2011) and returned different results with regard to

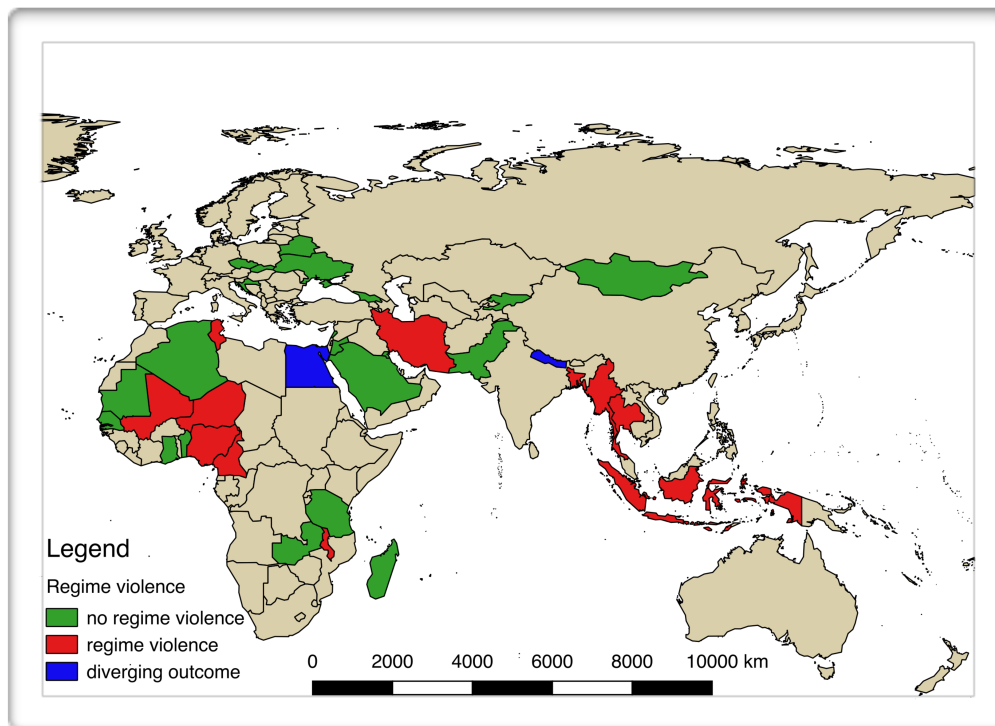


Map No. 1: Global patterns of military loyalty and disloyalty, 1987-2011.

Source: Own map, composed of WBD and MAD data. Note: Cases twice in the dataset with a diverging outcome are displayed in blue. Yugoslavia has been omitted due to problems in displaying it.

military loyalty. The same was true for Yugoslavia, which could not be displayed due to overlaps with Croatia, where the military remained loyal in two out of three instances. Concerning the regional clustering of regime violence being enacted, it is interesting to recognise that regimes in South East Asia and parts of North West Africa seem to be

relatively prone to violence while the states in the former Soviet sphere of influence and the Americas (not in the map) display no significant occurrences of regime violence. A total of 21 cases exhibited regime violence occurring, making up for close to half of the observations in the dataset.



Map No. 2: Patterns of regime violence in Europe, Africa, and Asia, 1987-2011.

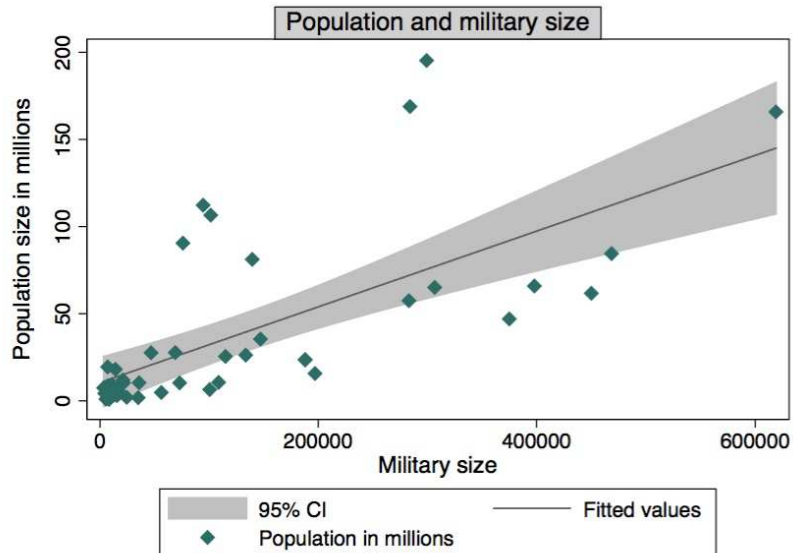
Source: Own map, composed of WBD and MAD data. Note: Regime violence coded for peaceful campaigns suffering more than 50 fatalities. Cases twice in the dataset with a diverging outcome are displayed in blue.

Again, Egypt exhibits diverging patterns during its two campaigns in the dataset, this time joined by Nepal. However, concerning the latter it should be noted that the regime used violence in both cases (1989-1990 and 2006) but failed to cross the threshold during the first campaign. (GNAD Nepal 2006; HIK 2006, p. 51-52)

Interestingly, based on the the correlations between conscription and both loyalty and regime violence, only limited initial support can be claimed for Tofalvi's and Koren's results. While out of 19 instances of regime violence 12 were conducted by conscript armies, the loyalty rates between conscripted and professional armies did not diverge much with 18 to 16, even though in the cases of disloyalty the conscript armies were more numerous with seven to three. However, no clear correlations can be established prior to the regression.

Turning to the size of the military, the mean nominal size of the military were 127292 soldiers while the total armed forces on average numbered 157394 (N=44).

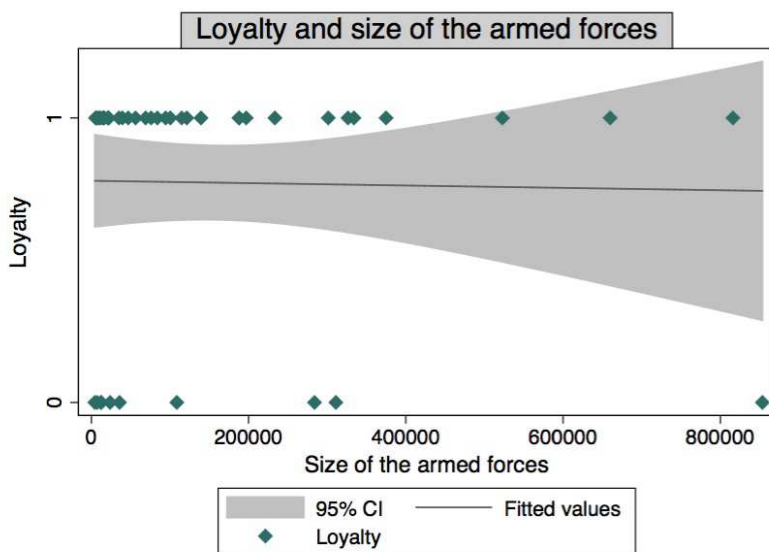
However, these relatively high numbers conceal that the vast majority of cases are countries with a relatively small population and not very sizeable militaries as Graph No. 8 shows.



Graph No. 8: Scatterplot population and military size, 1987-2011.

Source: Own graph.

Therefore, military size and population levels correlate well, with few outliers. The high overall mean value for military size stems solely from a couple of outliers such as Pakistan (619,000 in 2006), Egypt (468,500 in 2010), and Iran (398,000 in 2008) while the lowest seven estimates, of which five happen to belong to Sub-Saharan African states, do not even reach five digits (Niger, Benin, Guyana, Ghana, Malawi, Mali, Bahrain). The lower and upper quartile values are at 15,685 and 188,000 respectively.



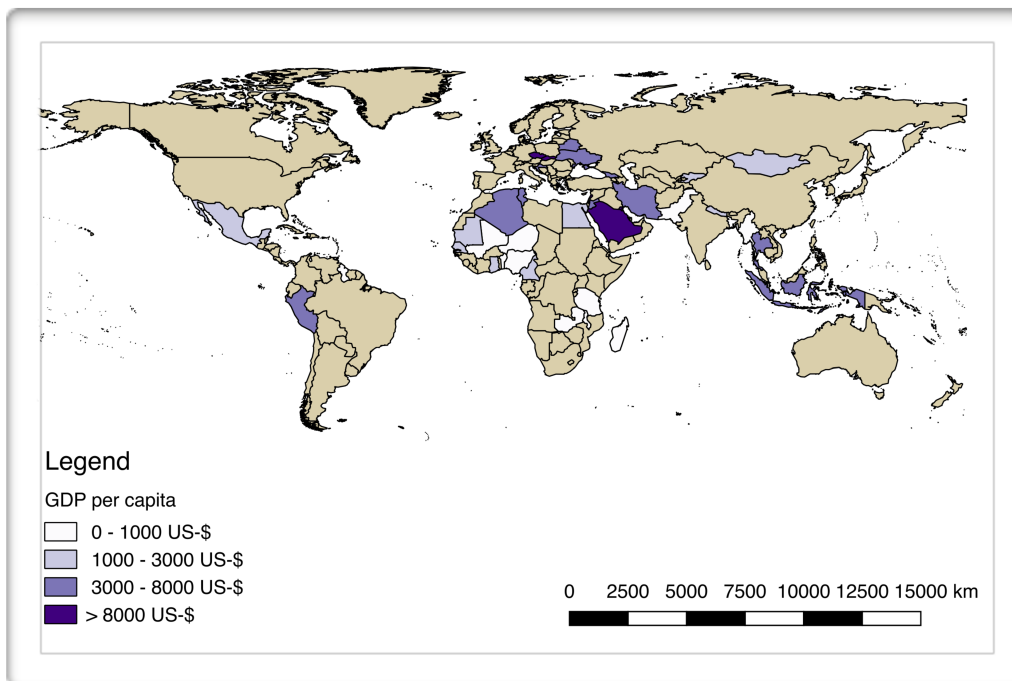
Graph No. 9: Scatterplot loyalty and size of the armed forces, 1987-2011.

Source: Own graph.

Similarly, the number of inhabitants per soldier ranges massively from 51,54 in Nepal in 2005 up to 2779,14 in Ghana 1999.

High militarisation levels seem to be predominant in the former countries of the Soviet sphere of influence and the MENA region while the states of Sub-Saharan Africa have the lowest amount of both soldiers and paramilitaries per inhabitant. Interestingly, there

was no initial evidence found for the size of the armed forces having an impact on loyalty. Moreover, as Graph No. 9 indicates, the confidence interval is massively opening up with the size of the armed forces increasing. Accordingly, the variable was omitted from further analysis.²¹



Map No. 3: GDP per capita values for MAD countries, 1987-2011.

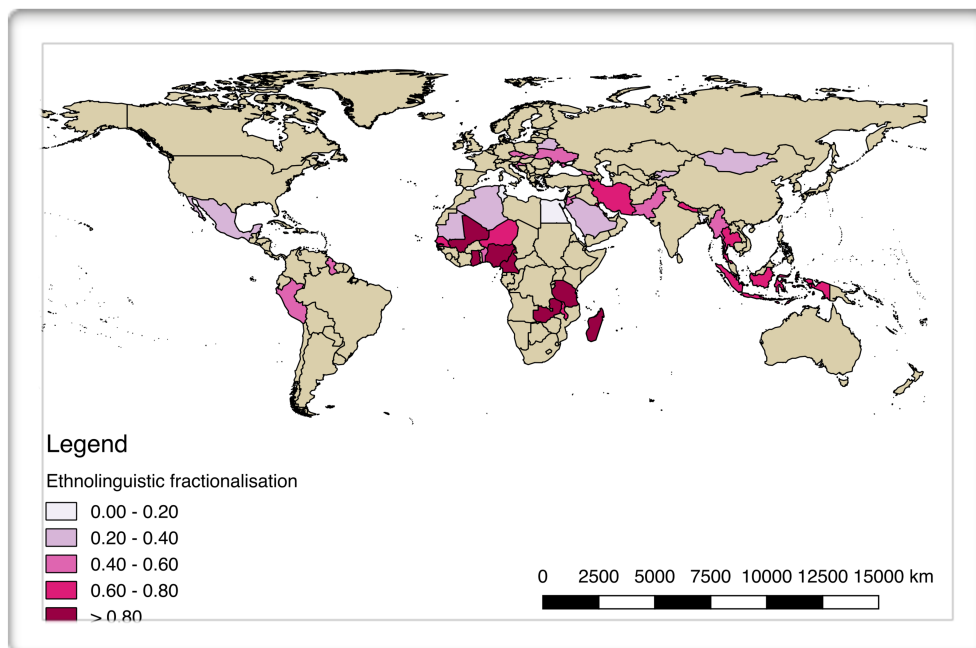
Source: Own map, composed of WBD and MAD data. Note: For cases twice in the dataset the more recent values has been assumed.

While the distribution of GDP per capita, as shown in Map No. 3, does not hold major surprises with Europe and the Middle East exhibiting the expectedly high and Sub-Saharan Africa the expectedly low values, the general range is impressive.

While Tanzania only had a GDP per capita of 104 US-\$ in 1991, Kuwait's 2010 value was an extraordinary 38,359 US-\$ with the mean in the dataset being 4,018 US-\$. The quartiles are located at 352.5 US-\$ and 4388 US-\$ respectively with the 5% and 95% percentiles assuming the values of 158 US-\$ and 16,531 US-\$. This huge range should be kept in mind when assessing the impact of the GDP per capita control variable.

In terms of ethnolinguistic fractionalisation, it should be noted that especially in North Africa the ethnolinguistic homogeneity seems to be particularly high, while in Sub-Saharan Africa the index values reach their highest levels.

²¹ Preliminary models including the variables military size or size of the armed forces were not strongly influenced by the variables with both of them showing no statistical significance themselves.

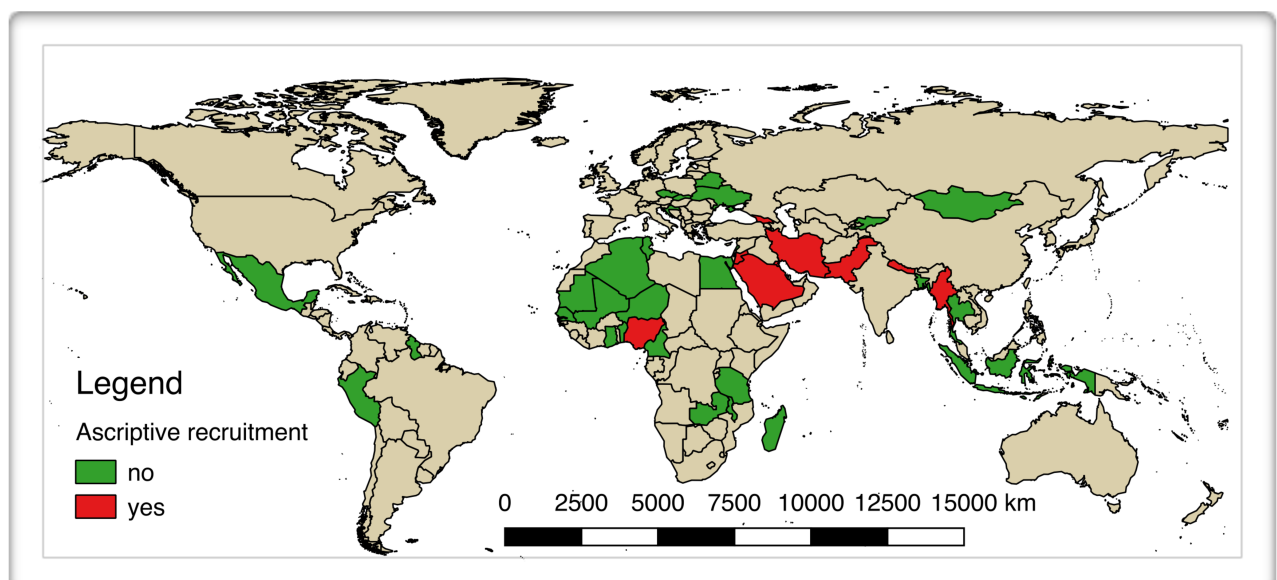


Map No 4: Ethnolinguistic fractionalisation index per country, 1985.

Source: Own map, composed of WBD and MAD data.

As fractionalisation is a key condition of ascriptive recruitment and a variety of regime ties being employable as tactics of limiting military autonomy in the first place, it is expected that a certain congruence amongst the variables will be visible in the data.

However, turning to the independent variables, Map No. 5 makes it evident that this is only partially true, with ascriptive recruitment being, surprisingly, relatively lowly institutionalised

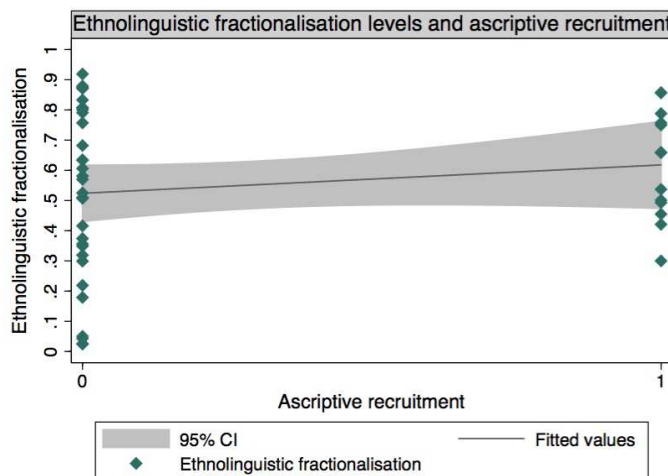


Map No. 5 Existence of ascriptive recruitment on the global level, 1987-2011.

Source: Own map, composed of WBD and MAD data.

in most parts of both North and Sub-Saharan Africa despite the high levels of ethnolinguistic fractionalisation in the latter.

Instead, a clearly recognisable regional cluster exists in the Middle East and adjunct countries in South and South East Asia. On average, there is a correlation between ethnolinguistic fractionalisation levels and the existence of ascriptive recruitment. Even though the effect seems not too strong initially, the scatterplot (Graph No 10) proves that the existence of a certain level of fractionalisation (~0.3) is a necessary precondition for ascriptive recruitment being exercised.



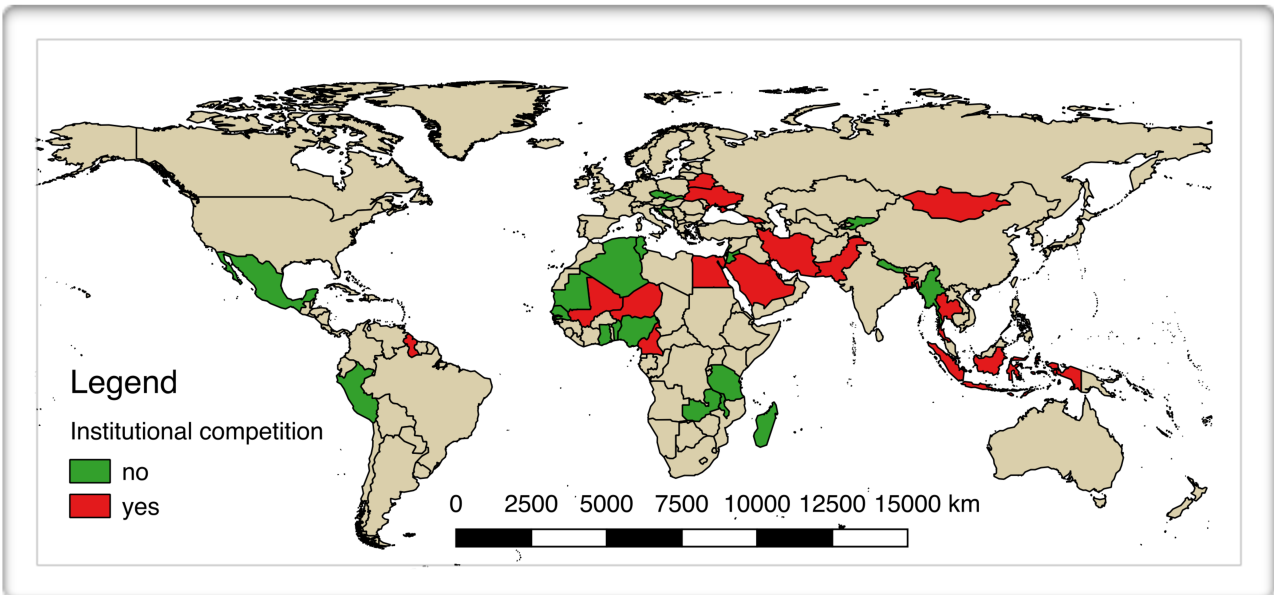
Graph No. 10: Scatterplot ethnolinguistic fractionalisation levels and ascriptive recruitment, 1987-2011.

Source: Own graph.

Given this precondition, the relatively low number of observations for ascriptive recruitment, amounting to 13 cases and making up for 29.55% of the total, can be explained. Amongst these, nine were classified as being primarily ethnic, two as religious/sectarian (Iran, Bahrain), and two as regional/tribal (Saudi Arabia, Kuwait). Even though some countries exhibited features of more than one ascriptive recruitment type, usually clear patterns of a primary mode were recognisable.

Turning to institutional competition, it can be noted that no undisputed geographical patterns exist across the 18 cases (59.09% of the total) in which institutional competition was present, even though the Middle East and the former Soviet sphere of influence seem particularly prone to it.

This fits a preponderance of research portraying the Middle East as a model region for coup-proofing attempts by establishing institutional rivalry. (Quinlivan 1999; Makara 2013) However, it should be noted that the absolute size of the second force ranged from 1,900 (Niger 1990) up to 385,000 (Egypt 2010) active personnel with a mean of about 30,000. Additionally, the share of the paramilitaries amongst the armed forces total across cases greatly varied from 3,9% (Indonesia 1996) up to 56% in Bouteflika's Algeria in 2010, which is also the only case in which coded paramilitaries numerically superseded the regular military. This huge range should be kept in mind when assessing whether or not a second



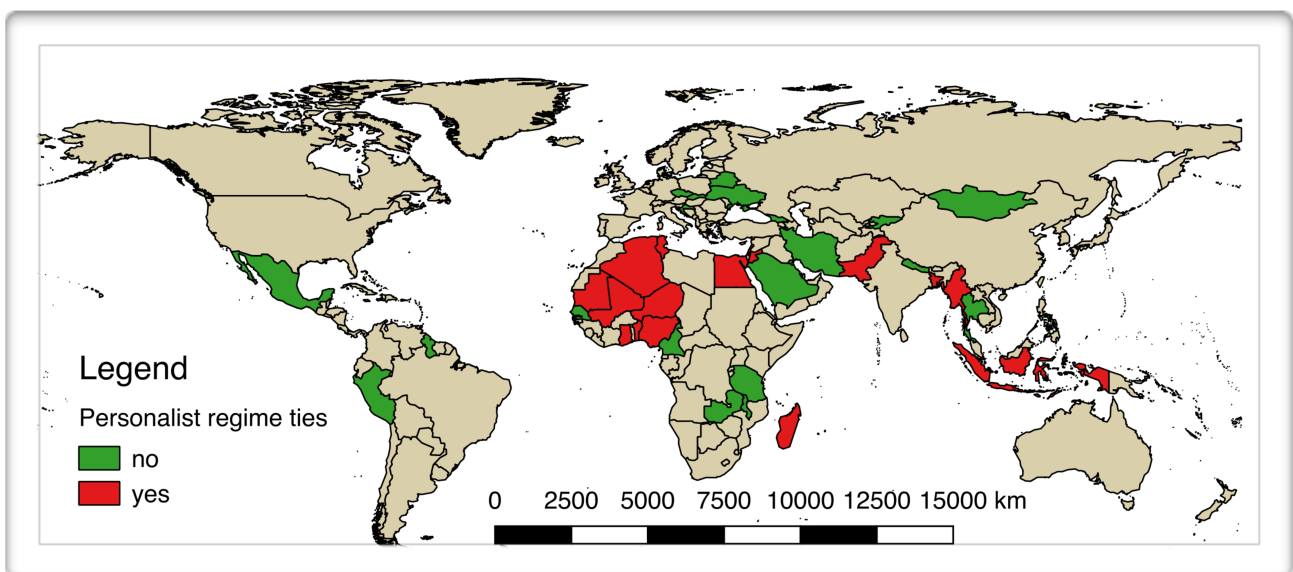
Map No. 6: Existence of institutional competition between the military and a paramilitary state force, 1987-2011.

Source: Own map, composed by WBD and MAD data.

force is seen as a potent institutional rival to the military and thereby had impact on the military's behaviour.

Turning to the variety of regime ties, an interesting pattern is emerging in the regional distribution.

As Map No. 7 shows, North and West Africa are undeniable hotspots of regime leaders exhibiting a military background. Out of a total 19 cases with a military leader being in power in t-1, twelve are located in Africa. Military leaders are least common in the former



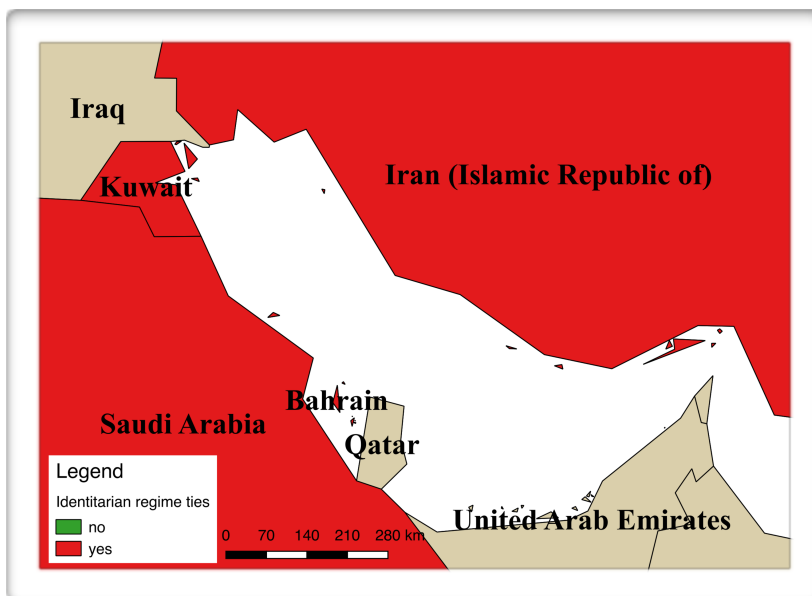
Map No 7: Global distribution of personalist regime ties, 1987-2011.

Source: Own map, composed by WBD and MAD data.

Soviet sphere of influence with the majority of leaders being of Communist party origin and, somewhat surprisingly, Latin America.

This might be explained by the fact that most of the infamous military juntas of South America perished during the mid-1980s (Loveman 2011), thereby failing to qualify for this dataset. Initial frequency tables of personalist regime ties do not reveal particular surprises.

Turning to identitarian regime ties, it should be noted that those are amongst the most sparsely found observations in the dataset. Only in about every fifth case, namely in nine out of 44, any identitarian regime ties were identifiable, with some cases exhibiting more than one kind of ties being present. In five cases ethnic regime ties were observable, in three religious/sectarian ties and in four tribal/regional links were present. In accordance with prior claims by other authors on the primordial structures and the professionalism of



Map No. 8: Identitarian regime ties in the Persian Gulf region, 2009-2011.

Source: Own map, composed by WBD and MAD data.

the military in the region, the Middle East seems to be particularly prone to identitarian ties existing. (Bellin 2004; Barany 2016: 18-22) As Map No. 8 indicates, all cases included in the dataset bordering the Persian Gulf exhibited a least one set of identitarian ties between regime leadership and military, often more.

However, the low number of positive observations on

this variable is one of the main burdens on the regression analysis specified in the next section, increasing uncertainty and allowing only for very limited statistical significance. It is argued that this low number arises due to three reasons. First, only such relationships were coded which exposed a particular relationship between the regime leader and the military distancing them from substantial amounts of societies. Thereby the absolute number of codings declined, even though the regime leader and his military might in fact stem from the same identitarian background. For example, Mubarak in Egypt was coded as 0 due to the fact that no distance to substantial parts of society was related to his

common background with the military even though both were predominantly Sunni Arabs. Second, as mentioned above, the coding 0 also includes cases in which no initial evidence existed for special relationships. Effectively concealing facts from the public, such as recruitment shares across segments of society (Johnson 2013: 9-10), might therefore hide several potential cases. Lastly, as also already argued, ethnic and other identitarian conflicts tend to exhibit violence as a regular feature more often, thereby diminishing their chances of being selected into the dataset in the first place. (Fearon, Kasara, and Laitin 2007)

Turning to the last independent variable, family ties between the regime and the military, the number of observations remains low. Only in five cases (11.36%) the regime leader's close relatives or in-laws served in high positions in the army. Amongst those, the Gulf monarchies were predominant, with Saudi Arabia, Kuwait, and Bahrain all being present. The lower number is attributed to the explanations given above with a focus on the fact that especially for older cases the information on family members is deficient. Moreover, some cases such as Syria or Libya, which would be excellent examples of this regime strategy (Gaub 2013; Holliday 2013a; Townsend 2015), did not proceed to analysis due to the violent turn of the respective campaigns.

Having provided for descriptive statistics of the data and initial correlations relevant for the composition and interpretation of the regression model, the next section will deal with the results of the regression model.

4.2 Choice and configuration of the regression model

Before proceeding into the model configurations, it should be noted that there obviously is a reason why hardly any quantitative research has been performed on the topic so far: the extremely low number of observations for specific variables and the resulting difficulties in modelling a regression which produces significant results. All results obtained from statistical modelling in this paper should therefore always be considered with precaution.

Given the general data setting, three major challenges were to be accounted for while choosing a statistical model: a relative high number of potentially influential independent variables, a very limited number of cases and a dichotomous dependent variable. Very sophisticated models requiring more observations to enhance outcome variation and odds ratios such as survival models or two-group discriminant function analyses were therefore not considered at all. (Freedman 1997; UCLA IDRE 2017)

Finally, three statistical models were more closely examined: OLS regression, logistic regression (logit) and probit regression. (Nau 2014). After having assessed the individual modelling approaches, initial sample models with MAD data were run to assess potential issues (estimates not in paper). Both logit and probit models employ maximum likelihood estimation techniques which need higher case numbers. (Statistics Solutions 2017; UCLA IDRE 2017) While OLS can return meaningful results from an absolute minimum of five cases per independent variable onwards, logit and probit hardly work below ten cases and most statisticians recommend at least thirty observations so that even the variables with more numerous observations failed to return significant results. In the case of the probit regression, the majority of variables even were omitted due to assumed collinearity based on the very low number of cases.

All three models theoretically require little or no multicollinearity between the independent variables. This holds true for the independent variables apart from the subtypes of identitarian regime types which are for logical reasons closely correlated to each other as they represent sub varieties of the same phenomenon. Initial attempts to centre the variables by deducting its mean value or including interaction effects were abandoned due to the low number of observations. (Statistics Solutions 2017)

Having finally ruled out logit and probit models due to the low number of observations per independent variable, this paper employs an OLS regression model with a binary dependent variable, also known as a linear probability model. Its linearity assumption satisfies the prediction of the causal model defined and amongst the described models, the OLS model seems to be most robust²² against the low number of cases.

Multicollinearity and correlations amongst independent variables

A minor problem arises from the fact that the model is not entirely able to satisfy the condition of linear models that “[t]he total effect of the X’s on the expected value of Y is the sum of their separate effects” (Nau 2014: 1), exhibiting some correlation between the individual independent variables meaning multicollinearity and interaction effects potentially being present among the independent variables’ effects on military loyalty.

As the adjunct correlation matrix shows, the sub-types of identitarian regime ties show a certain statistically significant correlation amongst each other. As explained in the descriptive section, this is due to the fact that several countries exhibit more than one set

²² For an extensive discussion of potential issues arising from the violation of the normality of errors assumption and the risk of biased standard errors please refer to Long (1997: 38-40).

of ties existing at a time and should therefore not distort the estimate, even though the clear attribution of effects is slightly hampered.

Additionally, the same set of regime ties exhibit a reasonable multicollinearity with ascriptive recruitment; this arises from the fact that in the same country regularly both ascriptive recruitment and identitarian ties are being exercised as the set of countries with initial aptitude is essentially the same for both variables.

Table No. 1: Correlation matrix of independent variables
Source: Own table

	Ascriptive recruitment	Institutional competition	Personalist regime ties	Ethnic regime ties	Religious/sectarian regime ties	Regional/tribal regime ties	Family regime ties
Ascriptive recruitment	1.0000						
Institutional competition	0.0691 (0.6559)	1.0000					
Personalist regime ties	0.0389 (0.8023)	0.0212 (0.8913)	1.0000				
Ethnic regime ties	0.3960* (0.0078)	-0.1523 (0.3238)	-0.0230 (0.8822)	1.0000			
Religious/sectarian regime ties	0.4177* (0.0048)	0.3251* (0.0313)	-0.2358 (0.1233)	-0.0969 0.5317	1.0000		
Regional/tribal regime ties	0.3150* (0.0373)	0.2193 (0.1527)	-0.1161 (0.4531)	0.1359 0.3792	0.5418* (0.0001)	1.0000	
Family regime ties	0.3960* (0.0078)	0.2847 (0.0611)	-0.0230 (0.8822)	-0.1282 0.4069	0.4714* (0.0012)	0.6341* (0.0000)	1.0000

No explanation could be found for the correlation value of 0.3251* (0.0313) between institutional competition and religious/sectarian regime ties; it might correlate with the relatively high number of countries exercising both features being located in the same region, namely the Middle East.

Additionally, over all variables it is expected that the correlation estimates are somewhat distorted by the low numbers of cases with idiosyncratic factors of single cases playing a more pronounced role in linking two variables than one would reasonably expect from a more extensive dataset. Even though the data exhibits some limiting features on the regression model, based on Nau's (2014: 2) claim that "no model is perfect - these assumptions will never be exactly satisfied by real-world messy data" it is believed that the model choice is still reasonably supported by the data and the limits it imposes on other types of statistical tests.

Configuration of the statistical model

Based on the independent and control variables described above the OLS regression term for the binary dependent variable loyalty was defined as

$$\text{exp. loyalty} = \beta_0 + \text{ascrec} + \text{instcomp} + \text{regties_a} + \text{regties_b1} + \text{regties_b2} + \text{regties_b3} + \text{regties_c} + \text{conscript} + \text{GDPcap} + \text{budgetinccomp} + \text{budgettot_t1} + \text{fraction} + \text{popsize} + \text{countrysize} + \varepsilon_t$$

with β_0 being the intercept of the model and ε_t resembling the error term.

Due to issues in data availability the control variable *protestsize* was omitted. Attempts to include protest size as a control massively distorted the model without the variable itself being even close to gaining significance. It is assumed that this is due to the break in data availability and comparability after the period covered by NAVCO as explained above.

Moreover, *milsiz* and *armforsiz* were omitted from analysis as they prove not to have any relevant effect on the other variables and were not statistically significant themselves either.

Apart from the base regression model, several sub-models were specified to test for specific assumptions. The results are being discussed in the next section.

4.3 Discussion of regression results

Based on the regression model specified above, analyses were run using Stata. Because of the impact of low numbers of observations (N=44), significance for relationships were reported on three levels (* 0.1 ** 0.05 *** 0.01) for the regression model.

Relationships with two-tailed test values below the statistical convention in social sciences of $p = 0.025$ were highlighted as “highly significant”. In doing so, this study follows both Tofalvi (2013: 96) and Koren (2014: 701). This approach differentiates this section from the descriptive statistics in which the usual 95% confidence interval was observed.

The following table presents the OLS base regression model testing the effect of the independent variables on loyalty. Only 40 cases were included in this regression as especially the budget-related variables proved to exhibit several missing values. The result for the F-test with a $\text{Prob} > F = 0.0396$ value reveals that within the 95% confidence interval the null hypothesis of all coefficients being equal to zero can be rejected. Likewise, the R^2 value of 0.5543 is fairly high for the social sciences and informs about the share of

Table No. 2: OLS regression model testing the effect of the independent variables on loyalty.

Source: Own table.

	Regression model: Loyalty of the military
Ascriptive recruitment	-0.473* (0.097)
Institutional competition	-0.181 (0.210)
Personalist regime ties	0.107 (0.518)
Ethnic regime ties	0.308 (0.326)
Religious/sectarian regime ties	0.753* (0.071)
Regional/tribal regime ties	-1.043** (0.040)
Family regime ties	-1.044*** (0.005)
Conscription	-0.265* (0.065)
GDP per capita	0.0000671*** (0.003)
Defence budget increase in t-1 higher than on average during t-5	-0.371** (0.038)
Defence budget t-1	0.0000213* (0.074)
Ethnolinguistic fractionalisation	0.750** (0.015)
Population size	0.00000000336 (0.109)
Country size	-0.000000114 (0.459)
Constant	0.597** (0.024)

Note: N = 40, p-values in parentheses, significance levels * p < 0.1, ** p < 0.05, *** p < 0.01, Prob > F = 0.0396, R² = 0.5543

variance being explained by the model and therefore an estimate for the goodness of fit. In order to assess the effect of the individual variables, this paragraph will discuss the results returned for each variable and put it in relation to the hypothesis formulated in the theory section.

Starting with a general assessment of the regression results, it has to be noted that amongst the independent variables only ascriptive recruitment, two of the identitarian ties (religious/sectarian and regional/tribal), and family regime ties reach statistical significance while institutional competition and personalist and ethnic regime ties fail to cross the threshold. Based on these

results, the explanatory power of the components of military autonomy as independent variables of the model is in need of thorough revision. Concerning the general model, it is believed that the theoretical argument linking military autonomy and its components to military loyalty is sound and that the main issue lies in the extremely low number of observations across most variables. Some results are based on only four positive observations with potentially diverging outcomes. This allows for a huge influence of idiosyncratic factors which is not justified by the theoretical model. Therefore, even the statistically significant cases should be taken with a certain portion of scepticism. It is therefore indispensable for any future research in the field employing quantitative methods

to increase the number of cases and observations. A more thorough discussion of this topic will be part of the section on limitations of the study and potential ways forward.

Turning to individual variables, ascriptive recruitment returns a coefficient of -0.473 (0.097). This result contradicts the initial expectation concerning the direction of effects which were expected to be positive. Even though it achieves statistical significance only at the 10% level and must therefore be examined critically, based on the analysed data, H_1 must be rejected.

It is believed that this rejection could well be attributed to the small set of cases only, but as this explanation might not be fully sufficient, different theoretical explanations for the inverse relationship are put forward. Primarily it is assumed that case selection into the dataset has played a decisive role in turning around the theoretical expectations. As shown in the descriptive section, ascriptive recruitment tends to be closely related with a minimum threshold of ethnolinguistic fractionalisation being existent. Based on the fact that societal cleavages based on ethnic fractionalisation tend to more easily erupt into violence (Fearon and Laitin 2003; Fearon, Kasara, and Laitin 2007), it is believed that the case selection is discriminating against cases in which ascriptive recruitment was present. This should be true for two sub-cases. In the first version, the military is recruited in an ascriptive way. The protesters therefore consider their chances of dividing the military from the regime as low and turn to violent means in the first place. Accordingly, cases fail to be selected into the dataset. A potential example for this issue would probably be Libya. (Gaub 2013) In the second version, ascriptive recruitment did work insofar as certain ascriptive units remained loyal to the regime while the non-ascriptive units defected, maybe even opposing the former and leading to a classification of the case as a split. A typical case would be Syria, which, given that it had proceeded to analysis, would have exhibited exactly this pattern with Alawite units staying loyal to the regime while major parts of the Sunni forces defected. (Holliday 2013a) Therefore, the definition of loyalty itself might have caused some cases to exhibit unexpected features. However, given the low number of observations on the split variable and Geddes' argument on military cohesion, a more thorough theoretical and empirical examination of the phenomenon should be conducted prior to future studies.

Institutional competition also exhibited an unexpected direction of effects with a value of -0.181 (0.210) but fell short of achieving any statistical significance and therefore leads to the rejection of H_2 . This ambiguous result leads to the assumption that the direction of the effect is not determined per se and might be dependent on factors beyond the scope of

this analysis. As shown above, the relative size of the paramilitary forces compared to the military varies greatly over the dataset and that the respective ratio between military and paramilitary forces might alter the decision-making process. Therefore, future analysis should include a measure for the relative size of the paramilitary to test for this proposition with the effect of loyalty rising with relative paramilitary size. Moreover, the basic claim of the variable is that under the *ceteris paribus* assumption the paramilitary is, at least potentially or in the perception of the military, more loyal to the regime than the military itself. This expectation might be reasonable for some cases, certainly for those in which such units are specifically created from the regime's community of trust such as in Saudi Arabia or Syria (Quinlivan 1999: 135), while in other cases no particular relationship might exist between the regime and the paramilitary. Accordingly, future research needs to include a variable on the recruitment and loyalty patterns of the paramilitary forces. Unfortunately, data availability is expected to be even lower than for regular state militaries.

Lastly, even though the theoretical argument in favour of the expected effect direction is believed to be sound, Tofalvi (2013) and others brought forward a contrasting argument claiming that institutional rivalry decreases military loyalty through insulting the military by showing the regime's mistrust towards it. Moreover, this second force could potentially receive funding from the defence budget to which the military might believe to have a rightful claim, thereby starting to nurse a grudge against its political masters. A thorough review of these competing causal narratives should therefore be undertaken before future statistical analysis is being conducted.

Concerning personalist regime ties, the returned value of 0.107 (0.518) misses any statistical significance. Accordingly, H_{3a} cannot be supported. This could be due to idiosyncratic factors of the dataset or due to the balancing effect of the proclaimed causal link laid out in the theoretical section and the general empirical pattern that military regimes are more prone to instability and regime overthrow than other types of non-democratic regimes. (Geddes 1999; Kühn 2016: 354) Based on this idea, an additional variable would be needed to control for whether or not the regime leader was a military in a more or less civil regime or whether he held his position as head of state *qua* office, for example by being the head of the general staff. (Wahman, Teorell, and Hadenius 2013) Such a regime type variable would allow for the identification of two subsets of cases and the comparison of the respective results to see whether the indecisive effect can be attributed to the balancing out of the two proclaimed mechanisms.

Religious and sectarian ties manage to achieve a comparably high coefficient of 0.753 (0.071) and are significant on the 10% level. H_{3b} is therefore supported by the data. However, the absolute number of cases is so low that few claims on generalisability can be based on this estimate.

Regional and tribal ties proved to exhibit an unexpected direction of effect as well, returning a value of -1.043 (0.040). Even though the result is statistically highly significant, the overall trust in the estimate is limited due to the low number of cases analysed and the resulting high risk of idiosyncrasies of individual cases distorting the estimate. Moreover, results might be based on collinearity with other variables as the frequency table of the variable with loyalty returns four cases of which the military remained loyal in three. The estimate is therefore viewed critically.

Turning to the controls, conscription exhibited the expected negative influence on loyalty with a value of -0.265 (0.065), being statistically significant at the 10% level. GDP per capita did show extremely high statistical significance on the 0.01 level, but the size of the effect is so close to zero that it is negligible. No prior assumptions are violated by this result. Furthermore, both population and country size have effects close to zero and fail to achieve statistical significance. However, if they are removed from the regression, the significance levels for all other variables diminish rapidly. It is therefore assumed that they exercise a significant interaction effect with at least some of the remaining variables. Future research should try to examine this connection more intensively.

The defence budget increase variables both achieve statistical significance with the positive increase in t-1 achieving a hardly measurable positive impact on loyalty with 0.0000213 (0.074) while the fact that the budget increase in t-1 was higher than in the preceding five year period seems to have a strongly negative effect of -0.371 (0.038) which is also highly significant. No meaningful explanation for this contradiction could be found in the data and even on a theoretical level it is initially counterintuitive that increases over average just before the critical situation should lower rather than increase the likelihood of military loyalty. A possible explanation could be endogeneity-related, namely that the increase is not the explanation for disloyalty but the result of the regime detecting potential for disloyal behaviour in its military and, anticipating difficult times ahead, tries without success to persuade or actually bribe the military to stay loyal. In order to test the viability of this explanation, a comparative process tracing study for a couple of critical cases might be useful. (Gerring 2007, 2009)

Highly interesting is the result for ethnolinguistic fractionalisation which exhibits statistical significance on the usual social sciences analysis threshold and shows a relatively high

value of 0.750 (0.015). This might be seen as an initial hint that the theoretical link between fractionalisation and regimes using repression sparsely by Hendrix and Salehyan (2016) might find support in the data - if one accepts the assumption that loyalty through avoiding chances for disloyalty by not deploying the military is a sufficient causal link.

As mentioned in the model configuration section, a sub-model (Table No. 3) for a restricted sample with maximalist campaigns aiming at national level regime change only was established to control for whether or not secessionist or self-determination campaigns were likely to distort the validity of the estimates in the base model. The theoretical

Table No. 3: Sub-model 1 - OLS regression for restricted sample with maximalist campaigns aiming at national level regime change.

Sub-model 1: Loyalty of the military	
Ascriptive recruitment	-0.482 (0.156)
Institutional competition	-0.184 (0.231)
Personalist regime ties	0.126 (0.487)
Ethnic regime ties	0.313 (0.390)
Religious/sectarian regime ties	0.777* (0.090)
Regional/tribal regime ties	-1.028* (0.057)
Family regime ties	-1.170** (0.021)
Conscription	-0.289* (0.077)
GDP per capita	0.0000707** (0.010)
Defence budget increase in t-1 higher than on average during t-5	-0.376** (0.044)
Defence budget t-1	0.0000219* (0.089)
Ethnolinguistic fractionalisation	0.794** (0.018)
Population size	0.00000000369 (0.102)
Country size	-0.000000114 (0.473)
Constant	0.567** (0.046)

Note: N = 38, p-values in parentheses, significance levels * p < 0.1, ** p < 0.05, *** p < 0.01, Prob > F = 0.1131, R² = 0.5158

argument behind this is that in cases of localised conflict and/or protests being easily attributable to a certain ethnic, tribal, or religious group, the cost-benefit calculations of the military might be different compared to protests aiming at national level regime change. As it is shown in Table No. 3, the very small number of cases being analysed (N=38) does not allow for major variations in the estimates. Some estimates go slightly up or down but not one changes its significance level or its direction of effect. F-test and R² values are not significantly different from the base model. It is therefore concluded that at least for the cases in the dataset no relevant influence is exerted by the maximalist campaigns aiming at secession or self-determination. However, as their low initial number might well be explained by the higher likelihood of ethnicity-related violence in secessionist campaigns

(Fearon and Laitin 2003), the generalisability of claims based on this finding is limited.

Table No. 4: Sub-model 2 - OLS regression for restricted sample with starting year after 1990.

Source: Own table.

Sub-model 2: Loyalty of the military	
Ascriptive recruitment	-0.490 (0.108)
Institutional competition	0.198 (0.327)
Personalist regime ties	0.188 (0.287)
Ethnic regime ties	0.335 (0.325)
Religious/sectarian regime ties	0.535 (0.162)
Regional/tribal regime ties	-0.242 (0.806)
Family regime ties	-0.997* (0.057)
Conscription	-0.138 (0.420)
GDP per capita	0.0000296 (0.296)
Defence budget increase in t-1 higher than on average during t-5	-0.620*** (0.003)
Defence budget t-1	0.0000133 (0.295)
Ethnolinguistic fractionalisation	1.266*** (0.002)
Population size	-0.00000000870 (0.759)
Country size	-0.0000000171 (0.914)
Constant	0.453* (0.092)

Note: N = 28, p-values in parentheses, significance levels * p < 0.1, ** p < 0.05, *** p < 0.01, Prob > F = 0.0355, R² = 0.7515

A second sub-model tested for whether or not the end of the Cold War was as important a caesura as it is commonly claimed to be and whether the sub-sample of cases starting after 1990 was significantly different from those in the base model. Initial attempts for comparing pre- and post-1990 cases failed due to the extremely low number of cases (N=12) in the first subset which did not allow for meaningful computation. Concerning the results of the sub-model realised, the low number of cases must be highlighted (N=28), which limits the

reliability of the estimates. The most interesting results from this comparison is that institutional competition, even though still failing to achieve significance, turns its direction of effect around, exhibiting the initially expected positive impact on loyalty. Ascriptive recruitment marginally fails to achieve statistical significance but keeps its general direction like most other variables.

Probably most interestingly, the effect of ethnolinguistic fractionalisation rises even further, exhibiting by far the highest coefficient amongst all variables. This would implicitly support the popular claim that after the end of the Cold War identitarian issues are of rising relevance again. (Sundhaussen 1994; Münkler 2015) Lastly, the relative increase in t-1 compared to the t-5 average gains both magnitude -0.620 (0.003) and significance with the respective level even reaching the 0.01 threshold. This might lend additional support to the question of the variable's cause and effect as described above.

Having assessed the model and its sub-models as well as some limitations, a short summary of analysis results will be given.

4.4 Summary of analysis results

Based on the results of the analysis, only limited support could be found for the proclaimed hypotheses. Concerning hypothesis H_1 , the expected direction of effect was not supported by the data. Ascriptive recruitment exhibited a negative relationship with the likelihood of military loyalty, even though this effect was only statistically significant on the 0.1 level. Accordingly, H_1 was rejected.

No statistical support was found for the effectiveness of institutional competition either, even though the expected direction of effects appeared for the post-1990 campaign onset subset. Failing to achieve statistical significance in any given model, H_2 had to be rejected. Turning to hypothesis H_{3a} , claiming a positive effect of the regime leader being an active or former military on military loyalty, no support has been found in the data. Even though the expected direction of effect exists, the estimate is far from reaching statistical significance on any level. Accordingly, H_{3a} was rejected as well.

In the case of H_{3b} , which claims a positive impact of identitarian ties between regime and military on the latter's loyalty, a mixed result occurred. The expected direction of effects and statistical significance, even though only on the 0.1 level, was found for religious/sectarian regime ties only while regional/tribal regime ties exhibited a highly significant negative relationship with military autonomy and ethnic regime ties exhibiting the expected effect direction but not being statistically significant. Based on this mixed result and

keeping in mind that the estimates for the former two variables might easily be distorted due to the low number of cases and resulting high effects of idiosyncratic factors on the analysis, H_{3b} had to be rejected as well.

The last hypothesis H_{3c} , stating a positive impact of family ties on military loyalty, was rejected as well. In the statistical analysis the variable exhibited a negative relationship with loyalty on an extremely high confidence level of 0.01.

Summing up the results, all hypotheses had to be rejected for one reason or another as ways to limit military autonomy and increase the loyalty of the military to the regime. This indicates that there are issues which are related to either the theoretical model, and/or the data selection, and/or the regression model and that adjustments need to be discussed. This will be the goal of the next section.

5. Conclusion

5.1 Limitations and way forward

This section will be split into two major parts, the first addressing issues arising from the theory and the second one focussing on limitations related to the data structure. As many potential critiques and limitations were already mentioned throughout the paper, they are either shortly summarised or omitted from this section to avoid redundancy.

Starting with a general theoretical limitation, it has to be mentioned that the model and the mechanism put forward in this study, even though comprehensive themselves, are obviously not monocausal explanations for the decision-making of militaries during anti-regime uprisings. Monocausality in its very essence would provide for a deterministic model of explanation and would not account for the probabilistic conditions under which all social sciences are acting due to the singularity of human interaction and high idiosyncrasies. A generalised, quantitative model due to its very nature will tend to explain and predict average outcomes for average cases - therefore the explanation of highly idiosyncratic cases exhibiting historical path dependencies or having highly unusual configurations might be quite hard. Additionally, it cannot be denied that both equifinality and multicausality are playing into this analysis, even though the design of the study and the inclusion of appropriate controls were meant to safeguard the internal validity of the approach.

Second, even though a principal-agent approach is the most viable way of explaining the phenomena in question, it should be mentioned that like every theoretical model it

overemphasises certain aspects while neglecting others. First, it limits the study to two main actors, the military and the regime leadership, leaving out questions of divided leadership or highly differentiated models of oversight.²³ (Sowers 2005: 385-86) However, the main issue in this paper is that the black box of the regime is substituted with the black box of the military. Even though it would be highly desirable to split up “the military” both horizontally and vertically, this would by far exceed the capacity of this paper in terms of securing reliable data and modelling them accordingly in a statistical manner.

In horizontal terms, it would be desirable to split up the agent military into its branches, regularly army, navy, and air force, as their respective autonomy, incentive structures, preferences, and loyalty to the regime might well be different. Those differences might even come close to intra-military strategic competition or rivalry. It has been argued that amongst the branches of the military, the army empirically tends to be the key player during anti-regime unrests (Barany 2016: 27-28); therefore this differentiation could arguably be omitted for the present case. However, an empirical test for this assumption in a follow-up study would be highly valuable. If possible, this should also include a closer look at the incentive structures, preference configurations, loyalty patterns, and empirical behaviour of the second force, if existent.

In vertical terms, a closer look on the incentive structures and loyalties across the echelons as proposed by Barany (2016: 26-28) might gain incredibly valuable insights into the decision-making processes and the fractionalisation of the military. Generally speaking, different incentive structures, autonomy, and loyalty perceptions in between officers and rank and file should be taken into account. If possible, individual decision-making processes for senior officers, junior officers, non-commissioned officers, and rank and file should be considered. This has not been conducted in this study due to the very limited availability of reliable data and quantification issues. Even where some kind of data is available, it tends to be ex post, anecdotal in character, rumours rather than verifiable facts, limited in available data points, originating from certain units with limited generalisability to others, and being not comprehensive in coverage across time and space. However, extended research and the collection of comprehensive data on these issues are assumed to play a key role in conducting future research in the field.

Moreover, the principal-agent approach rests upon two assumptions which might be questionable for some cases: rationality and the self-perception of the regime and the military as principal and agent respectively. As Feaver notes, if militaries do not perceive

²³ In his study on NATO activities in Kosovo, Sowers (2005) tries to expand on Feaver’s work and to establish a multi-principal framework.

themselves as agents but as principals, possibly in the case of a military regime or a weak autocrat, their reactions might follow other cost-benefit calculations and the appropriateness of the principal-agent model to cover such cases could be deemed questionable. Accordingly, this study rests on the non-verifiable assumption that the militaries in the respective cases perceived themselves to be agents rather than principals. In terms of rationality of the actors, it should be mentioned that even though this assumption is necessary for comprehensive causal and statistical modelling, it does not remain unchallenged amongst researchers of political science. (Lefebvre 2004: 57; Sowers 2005: 385) A rationality assumption is based on the same level of threat triggering the same reaction across comparable cases, but empirically different types of authoritarian personalities might react differently and often not all too rational to challenges, depending on their character, background, education, professional and personal experiences, and so on. For some autocrats uprisings from a certain ethnic or religious group might be a trigger to order the exertion of high levels of violence due to personal rancour while for others protests in their home town are personally insulting and therefore unbearable. Some regime leaders will, based on their character configurations, overestimate the level of threat while others will underestimate it and therefore make different decisions about how to react to challenges. Accordingly, the necessary basic assumption for the model is an average regime leader with an average character and average threat perceptions - a highly unlikely exhibit to be found in reality, but the only possible way of large-scale modelling.

Another potential pitfall, which is the problem of acting under uncertainty and conditions of non-perfect information flows producing non-ideal outcomes due to incidents in the field, has been adequately addressed by both Feaver and Earl and Soule and will therefore not be highlighted separately.

Lastly, one should always keep in mind that obviously the whole study is based on contrafactual reasoning as no possibility exists to examine what might have happened under *ceteris paribus* assumptions if a certain variable had exhibited a different configuration in a specific case - the experimental limits of real world data.

Turning to limitations related to the data structure, two issues will be highlighted: the low number of cases and the biases in the selection criteria discriminating against positive results of the hypotheses.

Starting with the extremely low number of cases proceeding to analysis (N=44) and being incorporated into the regression model (N=40), it should be noted that this massively

hampers the external validity of the model and its findings. As some regressions are based on low single digit estimates, the idiosyncrasies of particular cases are expected to distort the generalisability of findings. This holds true especially for the different sub-types of identitarian regime ties.

Accordingly, any future research will have to aim at increasing the number of observations. Two major options are available for doing so: increasing the investigation period and reducing temporal resolution. Reducing the spatial resolution, even though normally a proper way of increasing the number of observations, is not deemed to be particularly useful in this case due to the national level structures on which the organisation of the military rests and the expected low regional variation of employed regime strategies. In terms of the investigation period, future research should aim at going back further in time to increase the number of potential cases. Obviously this is related with trade-offs through not observing the end of the Cold War as cut-off point for changed global power structures and regime-military relations any more. Accordingly, research aiming to do so needs to incorporate the risk of external intervention by the superpowers and its impact on both regime and military in a more pronounced way. Second, as laid out in the section on data availability, the more distant in time an event lies, the lower reporting on critical variables tends to be. By massively increasing the investigation period, potentially up to the end of World War II, the risk of underreporting and resulting inaccuracies of the estimates rises significantly.

Another way of increasing the number of cases without major changes in the theoretical framework would be a lowering of the temporal resolution, for example by not counting campaigns as discrete observations but splitting them up into separate campaign years or even months. The disadvantage of this method is the massively increased amount of data needed, which will quite often not be available at the required temporal resolution. For example, one might well find an annual assessment of regime violence for some African country in the late 1980s but on a monthly scale this is highly improbable. Obviously, the same goes for other variables, too. Moreover, even when the data would be available, the chance of returning a high percentage of zero observations is high, as decisive events tend to be clustered around a relatively short period of time with wide stretches of few observations in between.

Turning to the link between case selection criteria and the unexpected results of the analysis, it was already laid out in the respective sections that it is believed that the data suffers from selection biases which diminish the proclaimed effects of the hypotheses. Apart from the mere size of the sample, the main issue identified here is the limitation to

nonviolent campaigns. Even though this limitation is soundly justified by the claim on physical non-intimidation of the military and its decision-making, it is believed that a decent number of campaigns which were initially peaceful, such as Syria or parts of the Libyan campaign in early 2011, were omitted due to their change in character into violent campaigns or outright civil wars. It would be a reasonable step to undertake a widespread qualitative research into the campaigns listed by the NAVCO datasets as violent to determine at which point in time they turned violent and whether or not it might be reasonable to incorporate a potentially existing peaceful initial part of the campaign into this dataset. This argument would be very interesting for such cases in which the campaigns turned violent after an initial exertion of violence by the regime beyond a certain threshold, proving the willingness of its security apparatus to remain loyal and defend it at least initially. With data from the NAVCO 2.0 dataset, such an approach might be possible, as changes in the overall mode of the campaign are listed. However, in terms of the volume of the required assessments, such an approach would have been beyond the scope of this study.

Second, it is believed that the study suffers from an inherent issue arising from its focus on identitarian regime strategies. As argued above, conflicts based on ethnicity and other identitarian characteristics have proven to more easily erupt into violence and more often produce violent secessionism rather than peaceful protests. (Fearon and Laitin 2003; Fearon 2004; Fearon, Kasara, and Laitin 2007) Therefore, cases in which identitarian factors are the determining cleavage in society are less likely to be incorporated into this study - but at the same time those cases exhibit the highest likelihood of regimes employing ascriptive recruitment or identitarian regime ties as methods to tie the military to its own survival in the first place. (Johnson 2013) Accordingly, the theoretical specifications and the case selection criteria of this study are unintentionally likely to discriminate exactly against those cases which exhibit the features it is interested researching. This might explain the missing significance or even the unexpected direction of effects for many variables, as the cases exhibiting the expected features are just not selected into the analysis. In order to challenge this issue, the validity of this assumption should be examined by a thorough examination of the empirical data and, given evidence for it being correct, future models should be modified accordingly.

From the same point of view, the specification of the loyalty variable should be reconsidered if the above-mentioned point gains empirical validity. Based on the assumption above, it might be a valuable contribution to reconfigure the goals of the study towards explaining the *loyalty of specific segments of the armed forces*, breaking up the

black box of the military. If the assumption that identity-based regime strategies ties are particularly employed in countries suffering from identitarian cleavages, which also tend to be prone to the occurrence of violence, is correct, a future study should aim at explaining regime survival based on tying segments of the military to it and deliberately accepting splits during civil uprisings. In this case not the loyalty of the whole military by limiting its general autonomy as an institution would be the goal but rather the complete diminishing of any autonomy for particular segments of the military or the armed forces such as ethnicity-based units with the same background as the regime. In such an instance the variable loyalty should be redefined to cover the loyalty of a particular part of the armed forces which is, in itself, expected to be powerful enough to enforce regime survival. One example springing to mind would be the Alawites of the Syrian Armed Forces, but it is expected that this pattern should exhibit a certain level of significance especially in the ethnically diverse countries of Sub-Saharan Africa and some societies of the Middle East and South East Asia.

In general, it is believed that the overall theoretical propositions are sound, with the limitations voiced in this section and during the analysis, but failed to show significance based on the low number of cases and the related high influence of idiosyncratic factors on the one hand and selection biases discriminating against the cases exhibiting the expected features. Having highlighted the limitations of the study and hinted towards potential ways forward, the last section will be devoted to a short assessment of the overall results of this study.

5.2 Study evaluation and conclusion

This study argued that the military is the key actor in ensuring the survival of non-democratic regimes in cases of anti-regime mass mobilisation by exerting potentially lethal violence. Based on a broad review of research literature in the field, it put forward a military-centric approach focussing on the link between military autonomy and regime survival. Opening the black box of non-democratic regimes by claiming that the military is an actor with a certain independence and room for manoeuvre from the regime leadership, it provided a causal mechanism based on a principal-agent approach and suggested that the likelihood of military loyalty in such cases is the result of the military's autonomy from the regime and the effectiveness of the regime's strategies to tie the military to its own survival.

It focussed on regime strategies based on group incentives and posed testable hypothesis on the effects of ascriptive recruitment into the military, institutional competition between branches of the security apparatus, and identitarian ties between regime and military, including ethnic, religious, and tribal affiliations, on loyalty.

Having developed a theoretical framework and provided the operationalisation of relevant variables, the study proceeded by compiling a comprehensive dataset for statistical analysis. By doing so, it challenged the prevalence of small-N studies in the field and enhanced the small number of studies dealing with military behaviour statistically in order to generate more generalisable findings. Initial support for the majority of hypotheses has been found in the descriptive evaluation of data, and interesting links between certain variables could be established. Unfortunately, even though the theoretical framework and the causal mechanism are believed to be sound, the majority of hypotheses had to be rejected based on OLS regression results for missing statistical significance or unexpected directions of effects.

As it has been laid out in the sections above, it is argued that this is mainly due to provisions in the case selection which unintentionally discriminated against cases in which the claimed features were of decisive nature. Leaving behind only a small set of cases (N=40) proceeding to statistical analysis, the reliability, external validity, and generalisability of OLS regression results therefore remain questionable.

In conclusion, this paper managed to establish a reasonable causal mechanism linking the components of military autonomy to non-democratic regime survival but fell short of providing indisputable statistical evidence for its claims based on an inappropriate size and composition of the sample analysed. Accordingly, follow-up studies are advised to tackle the problem of low case numbers by increasing the length of the investigation period and the temporal resolution of anti-regime campaigns as units of observation on the one hand and adapt the theoretical model and case selection procedures to limit discrimination against crucial cases on the other hand. Lastly, it is advised that if such attempts prove difficult to realise given low data availability, a more pronounced approach should be taken with regard to medium-N studies in the tradition of Barany (2016) by comparing a certain number of cases and trying to establish valid causal links allowing for higher generalisability of findings than the small-N studies prevalent in the field.

Annex I: Diploma thesis proposal

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Diploma thesis proposal

When the chips are down: Linking military autonomy and regime survival

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Abstract

As recently seen in the Arab Spring, in cases of anti-regime mass mobilisation beyond the scope of civil policing the military emerges to be the key actor for ensuring regime survival by exerting potentially lethal violence. This paper follows a principal-agent approach and argues that loyalty, meaning the likelihood of the military to act as a reliable agent of the regime, is a function of the military's autonomy from the regime and its space for manoeuvre. The more effectively the regime managed to reduce the military's autonomy and tied it to the regime through pressure or incentive structures, the more likely it will act as a reliable agent to ensure its own survival and protect its interests. This paper explicitly draws on coup-proofing measures as most effective tools for the regime and thereby stresses the importance of group-based incentive structures over individual incentives. It therefore puts emphasis on the military's composition and structure as a mean of increasing loyalty by ensuring maximised social distance between the state agents and the civil movement. It therefore examines the impact of ascriptive military recruitment, identitarian ties between regime and military, and the effect of institutional competition between branches of the security apparatus on autonomy and loyalty. As so far only a number of qualitative and conceptual papers dealt with this issue in small-N studies with hardly any cross-regional large-N approaches existing, this paper will statistically evaluate the effectiveness of the above mentioned measures in a quantitative study of cases from 1990 onwards to contribute to the establishment of generalisable findings.

Outline and research gap

Widespread anti-regime protests with the goal of overthrowing the ruling coalition are a relatively rare but regularly recurring feature in countries not featuring liberal-democratic regimes. (Stephan and Chenoweth 2008) Recent examples encompass the MENA region in the Arab Spring, the Colour Revolutions in the Post-Soviet Space, and cases from South America, Sub-Saharan Africa, and South East Asia. If confronted with mass mobilisation aiming at overthrowing the regime, besides concessions and co-optation of opposition elites the solution most often resorted to is open, violent state repression exercised through coercive agencies such as the police or, in severe cases beyond the scope of civil policing, through deploying the military to exert potentially lethal violence. (Bellin 2004, 2012; Geddes 1999) In this case, the military as an entity as well as its individual members are confronted with the need to decide on whether to remain loyal to the regime or to act in a variety of ways of disloyalty, ranging from indifference and noncompliance over defections of individual soldiers or units up to the siding of the whole military with the

protesters.²⁴ All of those instances are perceived as disloyalty as they massively increase the likelihood of the regime's fall. (Tofalvi 2013)

Accordingly, the research question is framed as: *Does decreasing the military's autonomy increase the likelihood of its cooperation in violently cracking down anti-regime movements?*

Quite some studies have empirically described the importance of the military's decision for ensuring regime survival (Anderson 2011, Nepstad 2013, Townsend 2015) or gave account for possible explanations based on the autonomy of the military (Pion-Berlin 1992), the military's interest for survival and gains (Steiman 2012) or the regime's rationale of tying the military to its own survival and potential measures for doing so (Bellin 2004, 2012; Geddes 1999). However, most of these studies are missing out in at least one of three components. First, they are treating the military as a mere tool of the regime without regarding its institutional autonomy and interests or examining its actual space for manoeuvre provided for by the regime by not employing a principal-agent approach. Second, they quite often focus on economic benefits and budget increases only rather than including group-based incentives and structural questions of ascriptive recruitment, which are seen as most effective ties. (McLauchlin 2010) Third, all those studies examine a very small set of cases only, most often as a regionalised comparative case study with a clear focus on the MENA region before and during the Arab Spring. Moreover, their approaches are based on qualitative assessments only, thereby not being able to verify their claims for a larger group of cases across time and space. (Kühn 2016)

The only quantitative approaches towards the topic are Koren (2014) and Tofalvi (2013), even though both are limited in their approaches. While Koren gives a comprehensive account of the link between both regime type and the professionalization of the armed forces and likelihood of lethal violence being exercised by the military, Tofalvi primarily tests for a limited number of variables related to financial benefits, privileges, and recruitment patterns and the likelihood of a violent crackdown.

However, none of the above-mentioned papers tackles in detail the link between the degree of the likelihood of loyalty and disloyalty in cases of anti-regime mass mobilisation with regard to the military's autonomy from the regime based on the combination of ascriptive recruitment, identitarian ties between regime and military, and institutional competition between branches of the security apparatus. Accordingly, this paper attempts to fill the existing research gap by providing a theoretical framework for an autonomy-based explanation of military loyalty and disloyalty and a comprehensive statistical test based on a regression model providing for a cross-country analysis

²⁴ A third option is a military split. This is an empirically rather rare event as it is according to Geddes (1999) the worst case scenario for the military due to its destructive impact on the institutional cohesiveness which is the military's core logic of existence. Tofalvi (2013) codes it as disloyalty but further research needs to be devoted to the question how to deal with military splits during this study and whether they can really that easily be integrated in a dichotomous measurement of loyalty and disloyalty.

of the proposed variables to provide generalisable findings with a high external validity and explanatory power for other cases.

The first section of the final paper will give a general introduction to the topic, while the second will outline the research gap and the research question. In the third section a theoretical framework will be developed and the hypotheses will be laid down. The fourth section will deal with the methodology and the operationalisation and highlight datasets and their respective advantages and shortcomings. The fifth section will be devoted to the actual empirical analysis and the discussion of the results. Lastly, the sixth section will provide for a conclusion, highlight some shortcomings of the analysis and shed light on potential avenues for further research.

Theoretical framework

Based on a principal-agent approach it is argued that states are neither black boxes nor unitary actors and that their institutions are distinct actors and therefore enjoy a certain degree of institutional autonomy from the ruling elites, meaning the regime leader and his closest circle. (Pion-Berlin 1992) The degree of this autonomy, meaning the institutional ability to independently decide on how to react to certain circumstances and challenges, is a key determinant of regime survival in high-risk situations such as widespread mass protests as argued above.

Mass protests provide a distinct challenge to both regimes and the security apparatus. Unlike civil wars the massive use of potentially lethal force is typically not regarded as an adequate answer to protests, especially if they remain predominantly peaceful. (Stephan and Chenoweth 2008, Sharp 1973) Protest movements with maximalist goals, meaning a change in the regime leadership or structure, pose an existential threat to the regime but unlike a civil war or localised violent uprising no or only a minor physical threat to the military but challenge their loyalty as there is an alternative model of power being offered. (Koren 2014) The military is therefore not directly physically endangered by such protests but only institutionally through the strength of its ties to the incumbent regime in case of a regime change. Accordingly, militaries which see themselves tied to the incumbent regime's faith through structural or personal arrangements are expected to act more loyal than those which are easily able to switch sides as they are not institutionally endangered by a regime change. (Bellin 2012, Geddes 2004, Steinmann 2012) The goal of the incumbent regime must therefore be to reduce the institutional autonomy of its military by reducing its space for manoeuvre to act disloyal, or to quote Geddes' (1999), to avoid them just going "back to the barracks" under a new regime. This links in to the concept of coup-proofing as the goal is to ensure that the military is not switching sides, acts indifferent, or defects from the regime. (Belkin and Schofer 2005, Hendrix and Salehyan 2016, Louer 2013, Quinlivan 1999) Deriving measures from this field, the identity, structure, and composition of the armed forces and the security apparatus are seen as key to determine military autonomy and loyalty.

Military autonomy, meaning the space for manoeuvre of the entity military and its theoretical ability to potentially act disloyal to the regime, influences the likelihood of it violently cracking down mass protests if ordered to do so.²⁵ (Tofalvi 2013) Key components of this autonomy are the identity and composition of the military in comparison to the regime and the protest movement respectively as well as the organisational structure of the military and its position within the security apparatus. The higher the social distance between the military and the protest movement is, the more likely it will come down on the side of the regime. (Earl and Soule 2006, Koren 2014). Moreover, the more likely it is that the military as an entity or its members would suffer from a regime change as they are or at least are being perceived as closely tied to the incumbent regime, the smaller its space for manoeuvre is.

This paper will focus on three explanatory variables contributing to military autonomy, namely ascriptive recruitment, identitarian ties with the regime, and institutional competition within the security apparatus.

Ascriptive recruitment means the favoured inclusion of members of certain ascriptive groups, may they be of ethnic, sectarian, or regional background into the military. Most often this refers to national minorities but is not limited to such cases. An example might be the Alawites in the Syrian armed forces. (Hinnebusch 2012, Holliday 2013a, 2013b) The relating argument is twofold: first, the social distance between the armed forces and the mass of the protesters is being increased, thereby increasing the likelihood of a violent crackdown. (Earl and Soule 2006, Davenport 2007, Koren 2014) Second, the autonomy of the military is being decreased given that the preferential treatment is linked to the incumbent regime and not ensured after a regime change. The worst case scenario would include not only the loss of privileges but also some kind of collective punishment to the group as it were to be seen as closely tied to the incumbent regime by tribal, sectarian, or kinship affiliation. Accordingly, those members of the military are bound to the incumbent regime and their space of manoeuvre has been massively limited – they cannot go “back to the barracks”. Thus, the higher the amount of those people is, the more limited the autonomy of the military as an entity is. During the course of the study attention will be paid to the question whether the distinction of ascriptive recruitment for the officer corps and rank and file has a significant empirical impact.

Identitarian ties with the regime refer to the relationship between the military and the top regime leadership. It is claimed that close links between the regime leadership and the military limit the latter’s autonomy for three reasons. First, the close links and potential oversight of members of the top regime leadership make it harder for the military to conceal plans to pursue disloyal actions. This holds true for example when family or close kinship members of the ruler are holding senior military positions. Second, according to Quinlivan (1999) the “community of trust” based on shared

²⁵ Controls for alternative explanations of military loyalty such as the anticipated likelihood of the regime’s fall or economic benefit structures will be included in the section on control variables.

identity binds the two partners closer together. Third, being closely associated with the incumbent regime through institutional and personal links by the general public and the social movement leadership, the military's autonomy to change sides and serve under a new regime is limited at best as its loyalty were to be doubted.

Institutional competition

The position of the military within the wider framework of the security apparatus is seen as an essential part of the former's autonomy in terms of the regime's coup-proofing strategy. (Quinlivan 1999) This relates to the existence of paramilitary forces such as Republican or Presidential Guards (e.g. Iran, Iraq, Syria), mercenary corps or troops recruited from foreign countries (e.g. Bahrain, Gulf states), special forces units or heavily armed secret police forces (Tunisia), or pro-government militias (Indonesia, Syria, Sudan). (Ahram 2011, 2016; Blom 2009; Carey, Colaresi and Mitchell 2015; Carey, Mitchell and Lowe 2013, Kacowicz et al. 2012; Staniland 2012, 2015) Local police forces should probably be excluded, as they are structurally distinct from the armed forces by training, equipment, and purpose of being. (Koren 2014)

However, no understanding has been reached in the scientific community towards the direction of the effect. Tofalvi (2013) highlights that institutional competition is a two-edged sword when the military feels a loss in hierarchy and prestige compared to the alternative actors and might be more prone to defection. In this paper, however, stressing the principal-agent framework, I side with the argument that institutional competition is an conditioning factor tying the military closer to the regime for two reasons. First, the whole body of the military is in fear of being replaced as principal security actor by another agency or at least relegated in the hierarchy or deprived of privileges if not satisfying the demand of the regime, for example through cases of individual disloyalty amongst its members above a certain threshold. (Belkin and Schofer 2005, Hendrix and Salehyan 2016, Louer 2013) This puts pressure on every single member of the forces to behave accordingly with every individual checking up on potential spoilers. This decreases the military autonomy and makes obedience more likely. Second, given the existence of a sizeable parallel force deprives the military of being the sole tipping point for regime survival in cases of mass protests beyond the control of civil policing. If no such force exists, the decision of the military normally determines the fate of the regime. (Quinlivan 1999) If, however, a capable parallel force exists, the situation might lead to a conflict between the agencies up to a potential stand-off with both sides incurring losses or initiating a protracted civil war. This should massively hamper the military's willingness to act disloyal or at least massively increase the costs related to doing so.

Having described the elements and measures of the independent variable of this paper, military autonomy, and the dependent variable military behaviour in situations of anti-regime mass protests, the next section will be devoted to necessary control variables. The unit of observation in this study will be the military decision throughout the mass protests (to be determined: within which

period of time, n=year of initial uprising?) within a given country. The proposed timeframe ranges from the end of the Cold War with a changed geopolitical environment and increased data availability up to the most recent uprisings in the Arab Spring 2010/2011.

Hypotheses, measurements, and potential data sources

Note: Measurements of variables and controls are preliminary only. Especially thresholds are suggestive only but need more thorough exploration of empirical cases.

Ascriptive recruitment

Ascriptive recruitment means the favoured inclusion of members of certain ascriptive groups, may they be of ethnic, sectarian, or regional background into the military. Favoured refers to a privileged access of this group into the military or a discrimination of other groups in order to raise the respective groups numerical representation far beyond their relative share within the population. As a measurement a binary or dummy variable is proposed to indicate whether ascriptive recruitment is taking place or not. To account for minor groups not engaging in military service, historical anomalies, statistical coincidences or idiosyncrasies of individual cases, it is proposed to set the threshold in accordance with Koren (2014) at more than 20% higher representation in the armed forces compared to the respective group's population share to be coded as 1 and as 0 if lower. Moreover, it seems reasonable to assign to a case the value of 1 if considerable amounts (e.g. 20%) of its military consist of units composed of at least 75% soldiers from an ascriptive group. If additional informational value arises from it, splitting up the data in subcategories (ethnic, sectarian, regional) may be considered. Data must be triangulated from a variety of sources including the Military Balance (IISS) and the HIIK Conflict Barometer.

H₁: Ascriptive recruitment decreases military autonomy and therefore decreases the likelihood of disloyalty.

Identitarian ties with the regime

Identitarian ties with the regime are measured as binary variables. The value 1 is being assigned if one or more of the following qualifications holds true: senior military positions are being held by family or close kinship members of the ruler and/or the top regime leadership shares an identitarian background (ethnic, sectarian, regional) with the group ascriptively recruited into the military under the qualifications described above. Otherwise the value 0 is being assigned. Data can be derived from the Military Balance (IISS) and the Political Roles of the Military Dataset.

H₂: A common identitarian background of regime leadership and military decreases military autonomy and therefore decreases the likelihood of disloyalty.

Institutional competition

For the measurement of institutional competition a binary variable is employed as well. The value 1 is assigned when in the respective year a second force beside the military or local police forces existed in the country, which consisted of at least 500 armed members and were subordinated to some kind of chain of command. (Koren 2014) As paramilitary organisations vary massively in type, the following present only a sample of potential paramilitaries: pro-government militias, Presidential Guards, Republican Guards, gendarmerie, armed youth-movements, tribal militias, Revolutionary Guards, special forces, heavily armed secret police. If none such force was present, the value 0 is assigned. Primary data sources are the Pro-Government Militia database and the Military Balance (IISS).

H₃: The existence of a parallel force decreases military autonomy and therefore decreases the likelihood of disloyalty.

Data needed for the assessment of the dependent variable include opposition movements and mass protests and their goal (e.g. regime change), those can be derived from the Nonviolent and Violent Conflict Outcomes (NAVCO) dataset or the Chenoweth and Stephan database on nonviolent action. Data on violent military crackdowns can be obtained from the UCDP One-sided violence dataset (last update 2016), with the limitation that a 25 fatalities threshold needs to be crossed per year. If a lower threshold deems to be necessary, additional sources such as the HIIK Conflict Barometer, newspaper reports, NGO reports, and academic sources might be used.

Control variables and potential data sources

A couple of control variables need to be included to ensure the reliability of results and to control for alternative explanations of military loyalty or disloyalty. More detailed reasoning on individual controls to be attached later on.

Conscription/professionalization

In terms of maximizing the social distance it is argued that conscripts are potentially closer linked to the protesters than professional soldiers serving on a long-term basis. Their attachment to the regime must be considered less strong as they are only incorporated in its agencies temporarily and no individual long-term benefits and prospects such as remuneration, career options, and retirement packages proved loyalty incentives for them. (McLauchlin 2010) Professional armies consisting of volunteers should therefore enjoy a lower degree of autonomy and act more loyal.

Coding: professional army 1, conscript army 0. Data might be derived from the Military Recruitment Dataset (issue: available only until 2005).

Budget/economic benefits

If the military is receiving continuous economic benefits and budget rises, its likelihood to preserve those incentives is considered to be higher. (Bellin 2004, Tofalvi 2013) Coding: average budget rise for the five years prior to the mass protests. Data to be derived from SIPRI, World Bank, and IMF.

Regime type

Non-democratic regimes tend to be more prone to large-scale violence. Missing checks and balances in combination with a low respect for individual human rights and potential impunity for the military when committing atrocities makes loyalty more likely. Measure needs to be determined after examination of cases due to the complexity of the assessment. (Bogaards 2012, Hogstrom 2013) Most likely are Polity IV or Freedom House.

Primary campaign mode

Protests and social movements campaigns primarily employing non-violent means are less likely to threaten the military physically and thereby trigger unintended reactions. Data to be derived from Chenoweth and Stephan and NAVCO.

Size of protest

The variable measures the strength of the opposition to the government and serves as a dummy for the military's anticipation of the likelihood of regime fall to control for a merely opportunistic approach. Datasets: Chenoweth and Stephan and NAVCO. Either to be measured as maximum numbers of protesters during the campaign or as share of population. (Tofalvi 2013, Koren 2014)

Military strength

The variable would additionally measure the military's actual capacity to interfere with the protesters numerically by relating the number of military personnel to the size of the protests and/or the population size.

GDP per capita

Measure for socio-economic development. Countries with higher GDP are less likely to experience one or two-sided violence. (Fearon and Laitin 2003, Collier and Hoeffler 2004) Correlates probably with the regime type measure, preliminary tests necessary.

Ethno linguistic fractionalisation

Common measure for the diversity of the population. More diverse populations often more prone to civil unrest. Here additional measure for the capability of the government to employ ascriptive recruitment. Potential datasets: ELF dataset or Ethnic Power Relations dataset. (Vogt et al. 2015)

Population size

Likelihood for uprisings rises together with population size and needs to be controlled for. (Fearon and Laitin 2003) Data to be derived from the UN Statistical division or the U.S. Census Bureau's International Demographic Data Base

Country size

Same argument as above. Bigger countries with more extended surface tend to experience more protest movements and civil uprisings. Data: UN Statistical Division.

As some of the variables are expected to correlate with each other (e.g. family ties and ascriptive recruitment, regime type and GDP/capita, or country size and population size) a prior statistical analysis of those correlations will be required. (Toflavi 2013)

Limitations

Many variables need more thorough examination of the available datasets. The theoretical reasoning might have to be adjusted slightly according to data availability.

The study remains temporally focussed on the period after the Cold War. Moreover, it omits external influences such as the international and regional environment, external pressure on the regime, military or protest movement.

Additional examinations are necessary to determine whether the military can be treated as a black box with no distinction between senior officers, junior officers, and rank and file. However, due to low data availability across cases it will probably not be possible to change this preposition for the analytical part of the study, even though the paper acknowledges the importance of an in-depth examination of the military structures.

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Please note: The bibliography is preliminary only and not exhaustive yet. Parts of the literature need more thorough examination.

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Annex II: QGIS commands

Version used: QGIS 2.14.3 Essen

The following document contains shorthand of the commands necessary to produce the maps used in this study. It is intended for consultation by informed users of QGIS and therefore omits very obvious commands and focusses on the general steps necessary only.

1. Data and variables

Data for mapping stems from two sources: the World Borders Dataset (TM_WORLD_BORDERS_SIMPL-0.3, available online at http://thematicmapping.org/downloads/world_borders.php) and the self-composed Military Autonomy Dataset. Variables for the World Borders Dataset are described below.

World Borders Dataset variables		
Name	Type	Description
Shape	Polygon	Country/area border as polygon(s)
FIPS	String(2)	FIPS 10-4 Country Code
ISO2	String(2)	ISO 3166-1 Alpha-2 Country Code
ISO3	String(3)	ISO 3166-1 Alpha-3 Country Code
UN	Short Integer(3)	ISO 3166-1 Numeric-3 Country Code
NAME	String(50)	Name of country/area
AREA	Long Integer(7)	Land area, FAO Statistics (2002)
POP2005	Double(10,0)	Population, World Population Prospects (2005)
REGION	Short Integer(3)	Macro geographical (continental region), UN Statistics
SUBREGION	Short Integer(3)	Geographical sub-region, UN Statistics
LON	FLOAT (7,3)	Longitude
LAT	FLOAT (6,3)	Latitude

Note: Description of variables derived from: http://thematicmapping.org/downloads/world_borders.php (11/07/2017).

For variables originating from the Military Autonomy Dataset (marked MAD_varname) please refer to the latter's codebook. Military Autonomy Dataset binary variables are coded

as “Whole number (integer)” while discrete observations are coded as “Decimal number (real)” with a length of eight respectively.

2. Merging the Military Autonomy Dataset with geospatial data

Initial steps

- Download WBD and add its shapefile to QGIS
- Layer → Add Layer → Add Vector Layer

Merging and re-importing

- The initial challenge was merging the Military Autonomy Dataset (MAD) with geospatial data from the World Borders Dataset (WBD).
- As no initial common identifier variable existed and even country names varied (for example Mynamar/Burma), automatic matching procedures (join command) did not succeed initially. Accordingly, the MAD was manually fitted with the WBD NAME variable manually outside of QGIS.
- Import edited MAD as delimited text file, set delimiter to custom and chose semicolon, geometry definition: chose point coordinates → X field LON, Y field LAT
- Set coordinate reference system to WGS 84
- Join with WBD_copy on variable NAME, select only the relevant variables to be included in the join, customise prefix to MAD_ (Properties → Joins → + → Join layer: MAD, join field: NAME, target field: NAME, select relevant variables by ticking, use MAD_ as prefix)

Note on displaying variables and countries:

- For purposes of display, countries which appeared twice in the dataset and exhibited diverging outcome on binary variables were marked on that variable using blue colour. For discrete variables the more recent value was assumed.
- To display Czechoslovakia, the current polygons for the Czech Republic and Slovakia were used.
- Yugoslavia was omitted from the dataset as it was present three times (twice 1989 and 2000) and overlapped with the Croatian case (2000). Including it would have caused problems beyond the value of its display.

3. Creating individual layers for relevant variables from the MAD

Derive individual raster layers from the initial joined WBD-MAD dataset

- Right click → duplicate
- Right click → rename (variable name)
- Right click → Properties → Style → chose Categorized (binary) or Graduated (discrete) → Column: chose variable → chose colour or colour ramp* → classify → for Graduated only: define Mode: Equal Interval or Pretty Breaks, adjust manually, classify
- Right click → save as → variablename.shp
- If required: display labels → Labels → Show labels for this layer → Label with variable name → Text: Times New Roman, Style: Bold, Size: 22 point, Color: Black or adequately different

* Note: Four standard colours for categorised binary variables defined: khaki (not in dataset), green (0), red (1), blue (2, case twice in dataset with variation on the binary variable of interest).

Choices for the respective variables are listed below.

World Borders Dataset variables		
Name	Categorized / Graduated	Specifications
MAD_Regviol	Categorized	standard colouring
MAD_Loyalty	Categorized	standard colouring
MAD_Ascrec	Categorized	standard colouring
MAD_Instcomp	Categorized	standard colouring
MAD_Regties	Categorized	standard colouring
MAD_Regties_a	Categorized	standard colouring
MAD_Regties_b	Categorized	standard colouring
MAD_Regties_b1	Categorized	standard colouring
MAD_Regties_b2	Categorized	standard colouring
MAD_Regties_b3	Categorized	standard colouring
MAD_Regties_c	Categorized	standard colouring
MAD_Conscript	Categorized	standard colouring
MAD_Milsize	Graduated	colour ramp: green, pretty breaks, 5 classes, adjusted (0-50,000 50,000-100,000 100,000-200,000 200,000-500000 500000-619000), adjust legend class 5 "> 500000"
MAD_Paramilsize	Graduated	colour ramp: blue, pretty breaks, 4 classes, adjusted (0-10000 10000-50000 50000-100000 100000-385000), adjust legend class 4 "> 100000"
MAD_Fraction	Graduated	colour ramp: violet, equal intervals, 4 classes, adjusted (0-0.2 0.2-0.4 0.4-0.6 0.6-0.8 0.8-0.919), adjust legend class 5 "> 0.80"
MAD_GDPcap	Graduated	colour ramp: purple, pretty breaks, 4 classes, adjusted (0-1000 1000-3000 3000-8000 8000-38359), adjust legend class 4 "> 8000"
MAD_budgettot_t1	Graduated	colour ramp: orange, pretty breaks, 6 classes, adjusted (0-1000 1000-3000 3000-5000 5000-10000 10000-40000 40000-53493.72), displayed in US-\$ millions, adjust legend class 6 "> 40000"
Note: Standard colouring: khaki (not in dataset), green (0), red (1), blue (2, case twice in dataset with variation on the binary variable of interest).		

4. Composing maps

All maps are being composed in the very same way:

- Project --> New Print Composer
- Composition: A5 as default
- Place map on canvas
- Add legend (Important: deselect “Auto-update”, “Background”, and “Frame” for legend)
- Use Item Properties to adjust the legend accordingly, use +/- to rename accordingly
- Include a scale by add scale command
- Font sizes are adjusted accordingly to free space, normally about 20 pt for titles, 16 pt for the legend header, and 12 pt for items in the legend
- Add title and explanatory notes with “Add new label”
- Export: Composer --> Export as .pdf and .png

Annex III: Military Autonomy Dataset codebook

The following codebook contains variable names, definitions, coding procedures, and employed data sources for the compilation of the Military Autonomy Dataset used in this study. In five categories it lists identifier variables, descriptive variables and independent, dependent, and control variables. Tables have been chosen for greater clarity in display. Please note that in the dataset the variable *source_comments* specifies the origin of classifications for each and every observation per campaign.

t, t-x, t+x

While t describes the year of the initial onset of anti-regime mass protests, t-x and t+x refer to the corresponding years prior or after this event.

Missing values

Missing values in the dataset are coded as blanks “ ” and indicate that either no data was available or that the case failed to qualify for inclusion in the dataset at an early stage. Failure to be included into the dataset is indicated in the section “sources_comments” by “EXCLUDED” and a short explanation. Reasons to be excluded are the campaign aims not being maximalist or the campaign not being peaceful or the country being coded “Free” by Freedom House or “Democracy” by Polity IV or the country not existing as an independent entity or the country being under foreign occupation or the case not taking place at least partly in or after 1990. For excluded cases regime leader names were coded “.b”.

Cross-references

(—> variablename) indicates that a closer look on other variables is advisable.

Procedural and excluded variables (*)

Variables which are merely used for procedural reasons, for compiling data or which contain additional information information not used in the final analysis or the discussion of the analysis, are marked with an asterisk (*).

Identifier variables

Variable name	<i>id</i>
Description	Unique numerical case identifier based on positive integers.
Sources	Generic
Comments	

Variable name	<i>campname</i>
Description	Name of the campaign including start and end year. Based on NAVCO classifications, a campaign is defined as “a series of observable, continuous, purposive mass tactics or events in pursuit of a political objective“ (NAVCO 1.1 codebook, p. 3.) and might range from days to years with a minimum number of participants > 1000.
Sources	NAVCO 1.1 (1987-2006), Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset (2006-2011), World Protests 2006-2013 (2006-2011)
Comments	

Variable name	<i>name</i>
Description	Contemporary English name of the country in which the campaign took place.
Sources	NAVCO 1.1 (1987-2006), Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset (2006-2011), World Protests 2006-2013 (2006-2011)
Comments	Regional campaigns might include a specification on the location in parentheses.

Variable name	<i>startyear</i>
Description	Year of first anti-regime mass protests of the respective campaign.
Sources	NAVCO (1987-2006), Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset (2006-2011), World Protests 2006-2013 (2006-2011)
Comments	Some campaigns start prior to the end of the Cold War. They have been included if they lasted at least until 1990.

Variable name	<i>endyear</i>
Description	Date of last anti-regime mass protests of the respective campaign.
Sources	NAVCO 1.1 (1987-2006), Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset (2006-2011), World Protests 2006-2013 (2006-2011)
Comments	Some campaigns start prior to the end of the Cold War. They have been included if they lasted at least until 1990.

Descriptive variables

Variable name	<i>t-1</i>
Description	Year prior to <i>startyear</i> .
Sources	$t-1 = startyear - 1$
Comments	Used as base year for numerous variables to avoid endogeneity issues.

Variable name	<i>camplength</i>
Description	Length of campaign in years. Estimated by deducting the <i>startyear</i> from the <i>endyear</i> value by assuming a Gaussian distribution to equal out effects of extreme cases.
Sources	$camplength = endyear - startyear$
Comments	

Variable name	<i>maxaims</i>
Description	Binary variable for campaign goals being maximalist (1) or not (0). According to the NAVCO classification, campaigns are coded maximalist if they seek regime change on the national level, self-determination, or secession.
Sources	NAVCO 1.1 and NAVCO 2.0 datasets (1987-2006), World Protests 2006-2013 (2006-2011), Global Nonviolent Action Database, supplementary academic, newspaper, and NGO sources (2006-2011)
Comments	Due to the potential ambiguity of argumentation concerning self-determination and secession the analysis contains a sub-model focussing on national level regime change only.

Variable name	<i>campmode</i>
Description	Binary variable coding primary campaign mode. To be coded 1 if primary campaign mode of the anti-regime mass protests is nonviolent, 0 if otherwise. Qualitative assessment. Based on NAVCO classifications, violent campaigns are characterised by violence being used as primary tool of protest a) on a large scale by a considerable number of protesters, b) intentionally as a mean of campaigning, c) repeatedly over time. Occasional throwing of stones by individuals or alike do not alter the classification.
Sources	Data: NAVCO 1.1 and NAVCO 2.0 datasets (1987-2006), World Protests 2006-2013 (2006-2011), supplementary academic, newspaper, and NGO sources (2006-2011)
Comments	In some cases violence erupted between the security agencies and groups not related to the protesters capitalising on the relevant campaign, for example looting youth groups in the case of Cameroon 2008. Such events did not change the classification of the campaign itself.

Variable name	<i>regleader</i>
Description	Denotes name of the regime leader at the beginning of the respective campaign.
Sources	Archigos: A Database of Political Leaders 4.1 (2016), Encyclopaedia Britannica Online, rulers.org
Comments	Archigos 4.1 tries to qualitatively assess the effective primary ruler beyond formal head of state classifications and eliminating straw men. For more information please refer to the Archigos 4.1 codebook, p.1. As data are given in MM/YYYY format exact choices on leaders can be made for each and every campaign.

Variable name	<i>regviol</i>
Description	Dichotomous variable identifying whether the regime used violence to crack down on campaign. Threshold of 50 fatalities amongst protesters to be coded as 1, 0 if below. Protester fatalities are active campaign members being targeted by state security agencies based on their role in the protests. Co-incidental deaths are not considered.
Sources	NAVCO 1.1 and NAVCO 2.0 datasets (1987-2006), World Protests 2006-2013 (2006-2011), Global Nonviolent Action Database, HIIK, supplementary academic, newspaper, and NGO sources (2006-2011)
Comments	Note that the data rarely allow for the identification of the perpetrating agency. Reaching the threshold does not necessarily mean that the military was enacting violence even though high levels of fatalities tend to involve military action being taken. Few cases are clustered around the threshold, usually the fatalities are considerably lower or higher.

Variable name	<i>sources_comments</i>
Description	Text variable which contains information on the coding sources and potential comments or issues for each observation per case. Cases not proceeding to analysis for reasons listed in the "Missing values" section are indicated by "EXCLUDED" and a short explanation.
Sources	Literally all
Comments	

Independent variables

Variable name	<i>instcomp</i>
Description	<p>Binary variable measuring institutional competition. Qualitative assessment mainly based on Military Balance.</p> <p>Value of 1 to be assigned when in t-1 a second force besides the regular military existed which posed an institutional challenge to the military. Therefore it had to be part of the formal state security sector, paramilitary in character, permanent in its structures and not merely formed ad hoc, exhibit a hierarchical structure, consist of at least 1,000 members, and be subdued by a chain of command to the regime. Generally excluded were units from the state security sector which were merely responsible for policing, law enforcement, border protection, civil protection, customs, and coast guard services or were in their character local self-defence forces.</p> <p>Value 0 to be assigned in all other cases.</p> <p>Typical cases include Presidential Guards, Republican Guards, Revolutionary Guards, special forces, and heavily armed paramilitary police or militia.</p> <p>Forces not being part of the formal state security sector such as ad hoc formed unofficial local self-defence forces, pro-government militias, armed youth-movements, tribal militias, and alike are not being considered as they do not pose an <i>institutional</i> challenge to the military.</p>
Sources	Data: Military Balance (IISS), occasionally Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset, HIIK, supplementary academic, newspaper, and NGO sources
Comments	Forces listed as paramilitary in the Military Balance were only included if fulfilled the criteria listed in the description. In a few cases (Iran's Revolutionary Guards, Saudi Arabia's National Guard, Syria's Republican Guard) effectively paramilitary forces with independent structures were officially listed as part of the army. In my estimates I considered these formations being paramilitaries.
Variable name	<i>ascrec</i>
Description	<p>Binary variable measuring existence of ascriptive recruitment into the military in t-1. Ascriptive recruitment refers to preferred recruitment of members of identitarian groups of common ethnic, religious/sectarian or regional/tribal background into the military, ensured by either privileged access or discrimination against other groups.</p> <p>Value of 1 to be assigned if a) the share of the respective group across the military is significantly higher (~20%) than its share amongst the general population or b) qualitative assessments indicate the existence of ascriptive recruitment over time.</p> <p>Value of 0 assigned otherwise.</p>

Sources	Due to data availability and reliability issues over time, a qualitative approach is chosen. Military Balance (IISS), Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset, HIIK, World Protests 2006-2013, Global Nonviolent Action Database, supplementary academic, newspaper, and NGO sources.
Comments	

Variable name	<i>regties</i>
Description	Binary variable measuring existence (1) or absence (0) of special relationships and ties between regime leader and military in t-1. Subtypes specified in <i>regties_a</i> , <i>regties_b</i> , <i>regties_b1</i> , <i>regties_b2</i> , <i>regties_b3</i> , and <i>regties_c</i> .
Sources	Archigos: A Database of Political Leaders 4.1 (2016), Political Roles of the Military Dataset, Military Balance (IISS), Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset, HIIK, Encyclopaedia Britannica Online, Global Nonviolent Action Database, rulers.org, supplementary academic, newspaper, and NGO sources.
Comments	PRM data is based on January 1 and is therefore coded for t instead of t-1; Archigos 4.1 is given in MM/YYYY format and therefore employed for t as well.

Variable name	<i>regties_a</i>
Description	Binary variable. Value of 1 to be assigned if the regime leader is or was a high-ranking active or retired professional military of the given country's military himself. This definition only includes trained career militaries but not leaders having served mandatory service times or volunteered for a few years only. If in doubt, a threshold of ten years of service is being employed to distinguish career militaries. The definition also excludes nominal posts and positions being held qua office, for example heads of states being the nominal commanders in chief of their militaries. Value of 0 to be assigned otherwise.
Sources	see <i>regties</i>
Comments	Lex Tadjman: The leader must hold a rank in the country's respective current army, merely holding military honours of a predecessor state or foreign power is not sufficient.

Variable name	<i>regties_b</i>
Description	Binary variable measuring existence (1) or absence (0) of identitarian ties between regime leader and military in t-1. Subtypes specified in <i>regties_b1</i> , <i>regties_b2</i> , and <i>regties_b3</i> .
Sources	see <i>regties</i>
Comments	

Variable name	<i>regties_b1</i>
Description	Binary variable measuring existence (1) or absence (0) of extraordinary ethnic ties between regime leader and military in t-1 by exhibiting a common ethnic background which differentiates them from substantial parts of the general society. Applicable to top military leadership, and/or officer corps, and/or rank and file. Coding as 0 refers to “no evidence” as proving the absence of a phenomenon is ambitious. It therefore does not necessarily mean that no such ties are existent but only that no initial evidence was found to prove them. Qualitative assessment.
Sources	see regties
Comments	

Variable name	<i>regties_b2</i>
Description	Binary variable measuring existence (1) or absence (0) of extraordinary religious/sectarian ties between regime leader and military in t-1 by exhibiting a common religious/sectarian background which differentiates them from substantial parts of the general society. Applicable to top military leadership, and/or officer corps, and/or rank and file. Coding as 0 refers to “no evidence” as proving the absence of a phenomenon is ambitious. It therefore does not necessarily mean that no such ties are existent but only that no initial evidence was found to prove them. Qualitative assessment.
Sources	see regties
Comments	

Variable name	<i>regties_b3</i>
Description	Binary variable measuring existence (1) or absence (0) of extraordinary regional/tribal ties between regime leader and military in t-1 by exhibiting a common regional/tribal background which differentiates them from substantial parts of the general society. Applicable to top military leadership, and/or officer corps, and/or rank and file. Coding as 0 refers to “no evidence” as proving the absence of a phenomenon is ambitious. It therefore does not necessarily mean that no such ties are existent but only that no initial evidence was found to prove them. Qualitative assessment.
Sources	see regties
Comments	

Variable name	<i>regties_c</i>
Description	Binary variable measuring existence (1) or absence (0) of family ties between regime leader and military in t-1 by family members or in-laws of the regime leader serving in high positions in the military. Coding as 0 refers to “no evidence” as proving the absence of a phenomenon is ambitious. It therefore does not necessarily mean that no such ties are existent but only that no initial evidence was found to prove them. Qualitative assessment.
Sources	see regties
Comments	

Dependent variables

Variable name	<i>loyalty</i>
Description	Binary variable coding whether or not the military remained loyal to the regime during a campaign. Loyalty is a qualitative assessment with the value of 1 being assigned if no evidence of widespread defection from the regime is available. The value of 0 is being assigned if widespread defection from the regime took place across the military and included a high number of soldiers and/or the officer corps and/or the top leadership. Defection hereby refers to 1) desertions, 2) insubordination and refusal to obey orders, 3) non-ordered withdrawal to the barracks and/or refusal to march out in the first place, 4) fraternisation with the protesters, 5) openly siding with the protesters, 6) attempting to perform a coup against the regime. As quantitative assessment are impossible due to data availability and reliability, a qualitative assessment of the given sources is enacted as identification procedure.
Sources	Military Structure, Civil Disobedience and Military Violence (1972-2011) dataset (1987-2006), HIIK, Global Nonviolent Action Database, Archigos 4.1, supplementary academic, newspaper, and NGO sources (2006-2011)
Comments	Surprisingly few cases posed ambiguous challenges to coding (—> <i>split</i>).

Variable name	<i>disloyalty</i>
Description	mirror variable to loyalty with exactly inverse specifications
Sources	—> loyalty
Comments	—> loyalty

Variable name	<i>split</i>
Description	Binary variable coding whether a military split took place during a specific campaign. A split (1) is being defined as at least 10% of the military choosing different sides in the struggle between regime and protest movement and opposing each other militarily. Normally splits lead to a civil war. If no evidence for a split was available, the coding 0 was assigned.
Sources	HIIK, Global Nonviolent Action Database, Archigos 4.1, supplementary academic, newspaper, and NGO sources (2006-2011)
Comments	Surprisingly few cases see open splits in the military and none of those made it to the analysis stage (Syria 2011 excluded due to campaign mode, Madagascar 2008 excluded due to democracy status).

Control variables

Variable name	<i>conscript</i>
Description	Binary variable identifying enlistment (0) and conscription (1) as primary mode of recruitment into the military in t-1. More than fifty percent of personnel numbers being conscripts results in coding 1 being assigned, less in coding 0 being assigned. Conscription is also coded when it is stated as primary mode of recruitment without shares.
Sources	Military Balance (IISS). Missing values until 2005 cross-checked with Military Recruitment Dataset, no missing values afterwards.
Comments	Very few cases are close to the 50% threshold, normally values are either far above or below.

Variable name	<i>milsiz</i>
Description	Nominal strength of the regular military measured in manpower for t-1. Only active personnel was included while reserves were excluded due to the widely varying connotation of the term and the readiness of those units for service.
Sources	Military Balance (IISS)
Comments	In three cases (Iran, Saudi Arabia, Syria) distinct paramilitary units were included in the total military size. Those were deducted from the absolute military size and reassigned to <i>paramilsiz</i> .

Variable name	<i>paramilsize</i>
Description	Nominal strength of the paramilitary forces potentially posing institutional competition to the military. Measured in manpower for t-1. Refer to <i>instcomp</i> for definition. Only active personnel was included while reserves were excluded due to the widely varying connotation of the term and the readiness of those units for service.
Sources	Military Balance (IISS)
Comments	In three cases (Iran, Saudi Arabia, Syria) distinct paramilitary units were included in the total military size. Those were deducted from the absolute military size and reassigned to <i>paramilsize</i> .

Variable name	<i>armforsize</i>
Description	Nominal strength of the official state armed forces composed of the regular military the paramilitary forces potentially posing institutional competition to the military. Measured in manpower for t-1. Refer to <i>instcomp</i> for definition.
Sources	$armforsize = milsize + paramilsize$
Comments	

Variable name	<i>milstrength</i> *
Description	Measuring ratio between the regular military's nominal manpower capacities in t-1 and population size in t-1. Two decimals precision.
Sources	$milstrength = popsize / milsize$
Comments	

Variable name	<i>armforstrength</i> *
Description	Measuring ratio between the official state armed forces', composed of military and potentially institutionally competing paramilitaries (→ <i>instcomp</i>), nominal capacities in t-1 and population size in t-1. Two decimals precision.
Sources	$armforstrength = popsize / armforsize$
Comments	

Variable name	<i>milprotest</i> *
Description	Measuring ratio between maximum protest size and the regular military's nominal capacities in t-1. Two decimals precision.
Sources	$milprotest = protestsize / milsize$
Comments	Note: Limited use due to reliability and comparability issues for <i>protestsize</i> after 2006. Refer to <i>protestsize</i> .

Variable name	<i>armforprotest</i> *
Description	Measuring ratio between maximum protest size and the armed forces', composed of military and potentially institutionally competing paramilitaries (—> instcomp), capacities in t-1. Two decimals precision.
Sources	$armforprotest = protestsiz / armforsiz$
Comments	Note: Limited use due to reliability and comparability issues for protestsiz after 2006. Refer to <i>protestsiz</i> .

Variable name	<i>popsize</i>
Description	Cardinal variable measuring population size for t-1 or next available prior datapoint.
Sources	Military Balance (IISS)
Comments	Control for increased likelihood of uprisings with high population numbers.

Variable name	<i>protestsiz</i> *
Description	<p>Continuous variable assessing maximum campaign membership at the peak campaign moment for 1987-2006 (NAVCO 1.1 codebook, p. 12, 33).</p> <p>Due to data availability issues after the end of the NAVCO datasets, the only available estimates were anecdotal maximum protest sizes for a particular event. To account for the generally reduced numbers the highest possible estimate available was assumed, so for the classified Arab Awakening Dataset the upper end of the class was assumed as value. (0-1000 —> 1000) As this could massively distort the estimates over time, the variable was omitted from analysis. Other variables drawing on <i>protestsiz</i> should be considered very carefully.</p>
Sources	NAVCO 1.1 and NAVCO 2.0, Arab Awakening Dataset, Global Nonviolent Action Database, World Protests 2006-2013 (2006-2011), supplementary academic, newspaper, and NGO sources (2006-2011).
Comments	To be used with highest caution.

Variable name	<i>FH_status_t-1</i>
Description	<p>Freedom House status “free” (F), “partly free” (PF), and “not free” (NF) for the country in t-1, range 1-7. Detailed coding information in the Freedom House codebook.</p> <p>Together with (—> <i>PIV_democracy</i>) used to exclude democracies from dataset.</p>
Sources	Freedom House Country and Territory Ratings and Statuses 1972-2016 dataset
Comments	

Variable name	<i>FH_PR_t-1</i> *
Description	Freedom House political rights score, range 1-7. Detailed coding information in the Freedom House codebook.
Sources	Freedom House Country and Territory Ratings and Statuses 1972-2016 dataset
Comments	

Variable name	<i>FH_CL_t-1</i> *
Description	Freedom House civil liberties score, range 1-7. Detailed coding information in the Freedom House codebook.
Sources	Freedom House Country and Territory Ratings and Statuses 1972-2016 dataset
Comments	

Variable name	<i>PIV_t-1</i> * / <i>PIV_democracy</i> / <i>PIV_anocracy</i> * / <i>PIV_autocracy</i> *
Description	Polity IV score for the respective country in t-1, range -10 to +10, and classifications according to the Polity IV standards: autocracy (-10 to -6), anocracy (-5 to +5) and democracy (+6 to +10). Detailed coding information in the Polity IV codebook. Together with (\rightarrow <i>FH_status_t-1</i>) used to exclude democracies from dataset.
Sources	Polity IV data series, version 2015
Comments	

Variable name	<i>GDP</i> *
Description	Total GDP per country for t-1 or next available datapoint in US-\$ billions, two decimals.
Sources	Military Balance (IISS)
Comments	Exchange rates from local currency to US-\$ for the respective year.

Variable name	<i>GDPcap</i>
Description	GDP per capita for t-1 or the next available prior datapoint.
Sources	Military Balance (IISS)
Comments	In rare cases US\$-PPP values were given, those cases have been marked accordingly.

Variable name	<i>bt-5</i> * / <i>bt-4</i> * / <i>bt-3</i> * / <i>bt-2</i> * / <i>bt-1</i> *
Description	Defence budget in US-\$ millions for the five years or next available data points prior to <i>startyear</i> . Maximum five decimals.
Sources	SIPRI Military Expenditure dataset
Comments	Local currencies were converted at 2015 US-\$ exchange rates. Some missing values, e.g. Mongolia, Yugoslavia.

Variable name	<i>budgettot_t-1</i> ' / <i>budgettot_t-2</i> *
Description	Defence budget in US-\$ millions for t-1 and t-2 or respective next available data points.
Sources	SIPRI Military Expenditure Dataset, missing values from Military Balance (IISS)
Comments	Local currencies were converted at 2015 US-exchange rates for SIPRI, for MB data annual exchange rates were employed. Low number of cases should minimise possible estimation distortions.

Variable name	<i>budgetperc</i> *
Description	Defence budget share of GDP in t-1 or next available data point in percent. Four decimals maximum.
Sources	$budgetperc = budgettot_t-1 / GDP$
Comments	Note that the display of 4,03% would equal 0.0403 in numerical notation.

Variable name	<i>budgetinc</i>
Description	Total military budget increase in percent in t-1 compared to t-2 or respective next available data points. Four decimals maximum.
Sources	$budgetinc = (t-1 - t-2) / t-2$
Comments	

Variable name	<i>budgetinc5</i> *
Description	Average military budget increase in percent over the five-year-period t-5 to t-1 or respective next available data points prior to the campaign.
Sources	$budgetinc5 = \{(t-1 - t-2) / t-2 + (t-2 - t-3) / t-3 + (t-3 - t-4) / t-4 + (t-4 - t-5) / t-5\} / 4$
Comments	Some missing values due to missing initial values.

Variable name	<i>budgetinccomp</i>
Description	Binary variable coding whether <i>budgetinc</i> was above (1) or below (0) the five-year average of <i>budgetinc5</i> .
Sources	$budgetinccomp = 1$ if $budgetinc > budgetinc5$, 0 if $budgetinc < budgetinc5$
Comments	

Variable name	<i>fraction</i>
Description	Ethnolinguistic fractionalisation index value of the country. Fixed on 1985 values. Range from 0 (total homogeneity) to 1 (total heterogeneity).
Sources	Ethnolinguistic Fractionalisation Index (ELF) Roeder 2001
Comments	1985 values were assumed as reliable and recent data for some countries are next to impossible to obtain. As population shares tend to be relatively static over medium periods of time, the assumption of the values seems reasonable.

Variable name	<i>countrysize</i>
Description	Cardinal variable measuring country size in square kilometres for t (January 1). Country size is a country's total land area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes.
Sources	The World Bank / Food and Agriculture Organization 2017: World Development Indicators: Land area (sq. km).
Comments	For localised events (e.g. Slovenia, East Timor) still the whole country's land surface was coded. Yugoslavia (2000) is missing in the dataset. A value for the back then Federal Republic of Yugoslavia is computed by accumulating surfaces of its back then parts Serbia and Montenegro. Same for Yugoslavia (1989), which is composed by all six former republics Serbia, Montenegro, Croatia, Slovenia, FYR Macedonia, and Bosnia and Herzegovina. Same for Czechoslovakia (1989), composed of surfaces of the Czech Republic and Slovakia.

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Note: This bibliography contains all sources used in this thesis, including datasets and sources employed for coding of the Military Autonomy Dataset.

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