Autocracy and Revolutions

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Abstract

Existing models of political transitions tend to treat either civil society or the incumbent as a unitary actor. Although useful in specific settings, both these assumptions are unrealistic in most cases and miss important dynamics, especially in cases of revolution. We develop a model of transitions in which two collective action games are nested within a larger political transformation game. We treat civil society as a large-N group that needs to overcome a collective action problem in order to overthrow an autocratic incumbent. On the other side, the incumbent is modeled as a coalition of civil and military authority that is engaged in a coordination game. On both sides of the game there is uncertainty about how the other game will end. Both of these nested games influence each other, and the payoffs for the different players depend crucially on what happens in all the other games. We illustrate the game through cases studies of autocratic incumbent – civil society interactions in Burma, Portugal, Poland and Romania.

Draft – Very much a work in progress!
1 Introduction

2nd of December 2010 the Economist ran a two page story entitled “A Commodity Still in Short Supply”. The article discussed the precarious lack of democracies in the Middle East, and noted among other things that “despite a recent flurry of elections, true democracy is still a rarity in the Arab world”. Up until a month ago remarkable aspects of the Middle East were the number, stability and longevity of non-democratic regimes. Authoritarian rule seemed to have entrenched itself in the region, and there were few if any signs of liberalizing currents. The Economist story even discussed the recent reversal of liberalizing policies enacted in many countries in the region in the 1990s. Then on the 18th of January 2011 uprising erupted in Tunisia. In a few weeks these uprisings spread to Egypt, Libya, Bahrain, Jordan, Yemen and Oman. The consequences of these “Arab revolutions” are not yet fully clear, but to date the heads of state has been forced to leave in Tunisia and Egypt, some political liberalization has been granted in Jordan and Bahrain, and Libya is engulfed in civil war. In all of these case the demand for political transformation came from civil society which came out and protested in unprecedented numbers. One aspect stands out as central in all of these cases: the military played a crucial role.

These protests and the process that followed caught most people, both within the region and outside, by surprise. For decades the view had been that there was no real urgency for political reforms in the region. Massive protests were uncommon, so – people rationalized – real reform is not what the public wants. This line of argument is of course almost perfectly analogous to arguments made about Eastern Europe at the end of the 1980s. The long run stability of Middle Eastern non-democratic regimes and the almost total lack of democracies in the region has led many to speculate about “Arab Exceptionalism”. This exceptionalism, along with repercussions from the Israel-Palestinian as well as outside involvement, was purportedly what explained the durability of these regimes. In light of most theories\(^1\) however this stability was abnormal, meaning that most theories would predict that change was coming.

The problem of predicting revolution has attracted significant attention. Kuran (1989) notes that revolutions nearly always take us by surprise, but then in retrospect look inevitable. He attributes this to people living under dictatorship having an incentive to hide their true preference about the regime, but these same people also have an incentive to jump on the revolutionary bandwagon once a revolution takes place. This explains both why regimes before a revolution seem to enjoy a great deal of support, and why after the revolution they look as if they had never had much support at all. We discuss this stability at length below, but it is maybe not actually surprising that having been stable for so long, when finally something changes and civil society sees an opportunity for a political opening, this process looks much more like an explosion than a deliberative drawn-out process. Kuran (1989)’s analogy of “sparks and prairie fires” is fitting.

In the following we model the transition from authoritarian rule. In this we follow in the tradition

\(^1\)See e.g. Gates et al. (2006) and Huntington (1991)
of several great scholars, but our model breaks with these on several important aspects. In contrast to the Przeworski (1991) model of transitions, we do not treat civil society as a unitary actor, and we do not model the transition as a coordination effort between civil society and liberalizing elites which Przeworski implicitly does. In contrast to Wintrobe (1998) and Weingast (1997) we relax the assumption that the incumbent, the dictator or sovereign, is a monolithic actor, and instead analyze the incumbent as a coalition. Importantly, we introduce the military as a central player in the incumbent coalition. Instead we model transition as a nested game. Within the game between the incumbent and the protestors, a collective action game is played out on the protesters side, and a coordination game is played out on the incumbent side. The uncertainty about how these two games will end, influences the main game.

The paper proceeds as follows, first we discuss issues relating to the problem of predicting revolutions and the long run stability of Middle Eastern regimes. We then introduce the actors to our transition game, and discuss the set of nested games. Then in section 6 we illustrate the game with a set of case studies from Burma, Romania, Portugal and Poland. We end with a discussion about future refinement of the model.

2 Problem of Prediction

As Kuran (1989) noted, a problem with studying revolutions is that when they start they often appear to have come out of the blue, while in retrospect they seem by and large inevitable. For the case of the recent Arab uprising this problem of prediction has been confounded by the fact that up until very recently, as the Economist story mentioned above illustrates, these regimes seemed solid and in control. As will be discussed below, a central part of the “Arab exceptionalism” puzzle is the remarkable longevity and stability of many of these regimes. A stability that is in contrast to most theories of regime duration. Hence the puzzle: how can these regimes seem so stable, and yet still fall so quickly when push comes to shove? Kuran (1989) argues that the primary reason why such regimes seem stable, is that individuals have incentives to hide their true political preferences. An Individual’s “preference depends on a tradeoff between two distinct considerations. The first is the sociological fact that he gains rewards and incurs punishment for his political stands. The second is the psychological fact that he suffers for compromising his integrity” (Kuran, 1989, 47). These dynamics has the consequence that a society “featuring high revolutionary potential is liable to burst aflame following a minor shock. Yet it appears tranquil, because the status quo’s overwhelming support conceals the existence of a latent bandwagon which, if unleashed, will cause this support to evaporate” (Kuran, 1989, 59).

Along similar lines Lohmann (1994) develops a theory of “informational cascades” in revolutionary settings. Noting that an individual cannot unilaterally decide to overturn a regime, Lohmann (1994) argues that people’s incentives to participate in overthrowing a regime “depends on their expectations about how many others will turn out”. The number of people showing up to protest
then sends an informational cue to the rest of society about the amount of disagreement. Individuals perceive this information differently, depending on the degree of a conflict of interest between “the senders and the receivers”, i.e. the actual and the potential protesters. This implies that the “opinions expressed in the demonstrations will tend to lead public opinion, more so when many moderates turn out and less when demonstrations are dominated by extremists (...) extremist turnout does not per se induce the participation of individuals with more moderate preferences” (Lohmann, 1994, 53). Information cascades in Lohmann’s theory then result from the number of people out in the streets protesting, but this number is moderated by how extremist / moderate the protesters are regarded to be by the individual. Studying the East German uprisings in 1989–91 in light of this theory, Lohmann (1994) argues that what triggered the uprisings in the first place, is that information about the regime which had previously been hidden, and which remained hidden because of the lack of free elections, an opposition, a free press etc, was suddenly revealed after 1989. This set in motion an informational cascade.

This first step when information is revealed about the true state of the regime is important in the Lohmann theory for understanding when “informational cascades” can be set in motion. The factors Lohmann points to are all mechanisms that reveal a great deal of information broadly and efficiently, but the kind of information she considers concerns mostly issues about the quality of the regime. The difference between the true state of the regime and what people have been told through propaganda then becomes the central variable.

Considering uprisings more broadly, however, there are at least two other clusters of information that are just as important. Firstly, people’s perceptions about the will and the opportunity of the regime to use force to quell opposition is significant. In both the recent Tunisian case and the East German case a great deal of information was seemingly revealed by the authority’s first response to the protests. In regimes such as the Tunisian and the East German where the populace is used to seeing the iron fist of the regime being deployed swiftly and brutally against any challenge, any hesitation on the part of the regime after a challenge has been “presented” is likely to send something akin to an informational shock through society. A repressive unpopular regime is especially vulnerable to a situation in which it might appear to be a “paper tiger”. Secondly, information about the inner strength of the governing coalition is important. As will be discussed below, the military plays a key role in authoritarian regimes. Any group challenging the regime will therefore closely watch for evidence of tensions or fissures within the governing coalition, especially whether there is any evidence that the military might be defecting.

Information concerning the cohesion of the governing coalition, and this coalition’s ability and will to deploy force both represent implicit signals sent by the regime to the challengers, and this signaling is important for understanding the break-out of an uprising in the short run. In addition to the signals sent by protesters to the incumbent in form of the number of people participating (Lohmann, 1993) then, it is also important to analyze the signals sent by the ruling coalition’s
coordination game to the protesters.

3 Stable Autocracy

Revolutions in general tend to take people by surprise. Take as a case the recent revolutions in the Middle East and North Africa (MENA). These uprisings appear especially surprising given the long period of regime stability the region has seen. Analyzing this phenomenon Gates et al. (2010) find that semi-democracies in the MENA region are unusually stable and long lived. Figure 1 is taken from that paper and it shows the expected regime duration broken down by regime type and region. The reference category is a MENA semi-democracy. Compared to every other region of the world, MENA Semi-Democracies are much more stable. A south asian (SAR) Semi-Democracy is only expected to be 23% as durable as a comparable regime in the MENA region. Across the board, in no region is the expected duration less than 50% shorter than in the MENA region. These percentages translate into substantial differences. If a MENA semi-democracy is expected to last for at least 12 years, a similar East Asian regime will be expected to last for only 4 years (Gates et al., 2010). The same picture emerges for autocracies, with MENA autocracies being the most stable in the world.

These until recently highly stable semi-democracies encompass countries like Oman, Qatar, the United Arab Emirates, Jordan and Egypt. Gates et al. (2010) argue that a particular constellation of executive power restraints has enabled the longevity of these semi-democracies. A large section of the regimes have executives that are somewhat constrained, i.e. the executives in these regimes face a real but by and large ineffective opposition.

This mimics the regimes Przeworski (1991) calls ‘Broad Dictatorships’. Basically a broad dic-
tatorship is a softened autocracy, where there is some scope for independent action by opposition groups. In the late 1980s a number of eastern European regimes tried to do this, by the process called ‘Glasnost’. Przeworski argues that these kinds of broad dictatorship are unsustainable, since the opposition groups that have been granted some limited rights, will, inevitably, demand more, thus forcing the executive to either fully democratize or return to suppression. In other words, Przeworski argues that trying to balance control with some real but limited channels for voicing opposition is inherently unstable. It is off the equilibrium path.

In the MENA region, however, regimes that can easily be categorized as broad dictatorships are remarkably stable. Countries like Egypt, Tunisia and Jordan have managed very successfully to balance the venting of criticism by the public, with maintaining monopolistic control of real political power. These countries all have great internal political and social problems, but they had until recently by and large completely avoided large scale internal armed conflict. For some reason ‘broad dictatorship’ appeared to have been on the equilibrium path for MENA semi-democracies.

A regime faced with only popular dissent, will not be able to sustain itself, and would have to either democratize or return to full blown authoritarianism – what Przeworski calls a ‘narrow dictatorship’. In lieu of some form of legitimacy then, the regimes continue on the equilibrium path until they reach democracy or revert to authoritarianism. One reason for this is that without some legitimacy the regimes have to resort to repression, and repression is costly. This probably is not the most important factor. Many narrow dictatorships are perfectly able to stay stable in spite of repression. One consequence of the narrow opportunities for voicing opposition in the MENA region is the prevalence of riots. Since civil society lacks formalized ways of influencing decision-making they turn to riots to voice opposition and force change. Ayubi (1995) argues that MENA regimes are fierce, but not strong; i.e. they lack legitimacy, and their only way of dealing with civil society is through “coercion or raw force”, riots then are often met by brutal subjugation.

3.1 Repression and Regime Survival

In understanding sudden popular uprising repression plays a key role. As discussed above both Kuran (1989) and Lohmann (1994) discuss the role of information cascades in uprisings. Kuran argues that in revolutionary situations, situations where the incumbent regime is faltering, people are finally able to express their true preference about the regime. This is why the regime’s support often appear to evaporate over night. The question then is why have people hidden their true preferences? This is where repression is crucial. In general Kuran (1995, 26) argues that people falsify their preferences because “his public preference influence how he is valued and treated”. In the extreme this can mean being imprisoned or even tortured for holding the wrong ideas. As the novelist Arthur (Koestler, 2006, 100) has his ageing Bolshevik confess in the book “Darkness at Noon”: “Therefor we have to punish wrong ideas as other punish crimes”.

From the individual’s point of view the presence of an explicit or implicit threat to conform,
should have immediate consequences for the views he holds publicly as opposed to privately. In every society there is a subset of people willing to defy almost any risk to champion their view, but this is not likely to be a particularly large subset of the population. Save for these people then, many would prefer to hide their true feelings towards the regime on threat of being persecuted. This in turn creates a situation where a population appears to be more supportive of a regime than it actually is. Blaydes (2011, 17) argues that since only a few authoritarian states “place considerable limits on political and press freedoms” this is only likely to be an important mechanisms in a few cases. What is technically legal or not is however seldom the most interesting factor. In Egypt e.g. the constitution nominally provides for freedom of speech and press, but the Egyptian government stills detained and arrested several journalists every year. Similarly, the Syrian constitution provides the same rights, but the government still strictly controls the dissemination of information through the press\textsuperscript{2}.

Some totalitarian states, most notably today North Korea, attempt to control what people think. The central insight from Kuran (1995) though is that for the most part this is not really necessary. Kuran shows, without really articulating it, that simply by creating a situation were people believe that criticism above and beyond a certain threshold will be met by subjugation, will create a situation whereby people’s non-articulation of their disapproval of the regime becomes a self reinforcing process. The end state of this process then is a society where support for the regime appears overwhelming. This gives non-democratic regimes strong incentives to attempt to induce public preference falsification. In many ways then this is simply regimes attempting to achieve what the North Korean regime has achieved, but without being willing to invest the same amount of resources or having the same stomach for brutality as the Kim regimes. Some modicum of repression then serves, for these non-democratic but not strictly totalitarian regimes, a very instrumental role in regime survival.

The Middle Eastern non-democracies that have recently seen uprisings, were stable for a long period while at the same time being highly repressive. It is well established that being a repressive state is very costly. The question of how these regimes managed to stay repressive for long is therefore clearly interesting. Discussing the role of oil wealth on democratization, Huntington (1991, 65) writes that: “no taxation without representation was a political demand; no representation without taxation is a political reality”. The MENA region possesses more than a third of known oil revenues. Many MENA governments are ‘rentier states’ with weak extractive, regulatory and distributive powers (Ayubi, 1995, 400), they are, in relation to their GDP levels, bureaucratically underdeveloped (Fearon and Laitin, 2003). Large oil revenues accrue directly to the central state, which in turn insulates the state from civil society since the state is not dependent on civil society for resources. Ross (2001) argues that there are three possible mechanisms linking oil wealth and regime type; “a rentier effect, through which governments use low taxes and high spending to

\textsuperscript{2}See entries on Egypt and Syria in the United States State Department’s annual Human Rights Reports. URL:http://www.state.gov/g/drl/rls/hrrpt/
dampen pressure for democracy; a repression effect, by which governments build up their internal security forces to ward off democratic pressures; a modernization effect, in which the failure of population to move into industrial and service sector jobs renders them less likely to push for democracy” (Ross, 2001, 356–57).

Ross’s three mechanisms do not relate solely to oil, more broadly they relate to states that have a resource base which makes it possible for them to by-pass its population. Oil wealth makes it possible for a government to function without having to extract resources directly from the pockets of its citizens. These mechanisms therefore extend to larger parts of the MENA region than the oil rich Arab Peninsula. Several other MENA countries earn comparable rents by taxing movement through the Suez Canal (Egypt), oil and gas pipelines (Syria) and by charging transit fees (Jordan). Several MENA governments also receive large amounts off hard currency by their ‘Arab Brethren’, which should have the same effects as direct oil earnings.

The argument is that rentier states that do not rely on taxation grow insulated from civil society. This in turn means that the states grow under-bureaucratized – or rather the bureaucracy does not develop at the same pace as GDP – and they become fierce or hard but not strong states; i.e. they become garrison states, or states which deliver a minimum of social services or lack a social safety net compared to their GDP levels. The consequence of this is that the family becomes the primary social safety net, and that vacuums without state presence riddle large parts of society. These vacuums in turn can be filled by civil society organizations. Examples include the Muslim Brotherhood in Egypt\(^3\) which functions by and large as a Social Services Office in parts of Egypt (Wickham, 2002).

The states may be under-bureaucratized, but they are by no means incapable. To label them as such amounts to conflating regime type and regime capability. Measured in terms of many of the standard measures of state capacity, e.g. Tax Revenues, Relative Political Capacity or Bureaucratic Quality (Hendrix, 2010), these regimes would appear to belong at the lower end of the capacity scale. Skocpol (1985, 9) for example argues that high bureaucratic quality is characterized by the “ability to implement official goals, especially over the actual or potential opposition of powerful social groups”, and more generally a well functioning bureaucracy has been seen as a set of institutions which transport information upwards and pass decisions downwards. In most policy realms the bureaucracies in these countries would not be judged to perform well by such measures. With one exception: security sector. These regimes have a decidedly impressive repressive capability. In maintaining the current institutional arrangements and ensuring the survival of the incumbent regime the security services in these states have been brutally efficient at both passing information upwards and sending instructions downwards (for the Jordanian case see Wiktorowicz, 2000).

This disconnect between the civil society and the state sets the stage for our analysis. In the next section we develop a model of political transition, whereby we account for the sudden shift

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\(^3\)Egypt receives rents not so much in form of oil revenues, but rather in form of foreign development assistance and by Suez Canal transfer fees.
from political stability to revolution.

3.2 Introducing the Actors

In the following we briefly introduce the actors we assume are central to the game.

The Military. The dictator is not the only actor making up the incumbent regime. The “incumbent” is in every case made up of a coalition of individuals, that to a certain extent have varying interests and goals, and which face varying incentives. This is true for every regime from North Korea to Switzerland. In most analyses, the tug-of-war that goes on within the incumbent coalition is left out of the analyzes. Revolutionary situations are likely to bring to the forefront tensions and fissures within the incumbent, so in this paper we try to model this explicitly by splitting the incumbent into two actors: the dictator and the military. The dictator and the military are thus involved in a coordination game which is nested within the larger game being played between the incumbent regime and the members of civil society. To simplify we assume that the military can either stay with the dictator or side with the protestors (those elements of civil society actively engaged in protest against the regime).

Civil Society. In most studies of transitions and of authoritarian rule, civil society is treated as a unitary actor. Two prominent examples are Przeworski (1991) who studies transitions to democracy by analyzing the interaction between a liberalizing elite and civil society, and Wintrobe (1998) who studies how dictators use repression and loyalty to stay in power. In both of these studies civil society is treated as one and acts as one. Weingast (1997) relaxes this assumption by looking at the interaction between an incumbent and two civil society groups. The incumbent can use repression and cooptation selectively against the two groups, thus creating a coordination dilemma that makes it harder for civil society to unite against him. Although he relaxes the unitary civil society actor assumption slightly, Weingast (1997) only models two groups, and instead he treats the incumbent as a monolithic actor. In this study we relax this assumption completely and instead look at how civil society, consisting of a large number of people, can overcome a collective action problem and rally against the state.

Civil Authority. In most cases the civil authority is the official head of the incumbent coalition, in Egypt it was Hosni Mubarak, and in Romania it was Ceausescu. We assume simply that this actor wishes to stay in power. This actor then is the one most often referred to as “the dictator”. This dictator has a number of tools available to him, which he can use to stay in power. Most important of these is the ability to spend resources on repression or on buying loyalty (Wintrobe, 1998; Weingast, 1997). The dictator may also use the institutional set up of the state to coopt parts of the population or to neutralize threats to their authority and solicit cooperation (Gandhi and Przeworski, 2006; Gandhi, 2008)
4 Modeling Revolution and Political Transformation

Who or which group initiates a revolution or political thaw matters. In this paper we focus on revolutions started by civil society. In other words, revolutions in which civil society is the first mover. The recent uprisings in Tunisia and Egypt are examples, as is the Iranian uprising of the summer of 2009 and the Tiananmen square demonstrations in 1989. This is in contrast to the Przeworski (1991) model of transitions were the first move is made by a liberalizing elite. As a consequence the Przeworski model takes the form of a collaborative game. The model has at least two players, civil society and the liberalizing part of the elite, which both work towards a more or less shared goal – some degree of political liberalization. Such a dynamic is illustrated as well by”?s notion of “pacted transitions”. In our model the players are to a larger extent embedded in something resembling a “chicken game”, and playing chicken is not a collaborative process. Rather, not playing chicken is. As Schelling (2008, 118) notes, chicken is a game that takes two players not to play. Once the game has started collaboration becomes more or less impossible. An implication of this is that “Chicken transitions” should be more chaotic and bloodier than “Przeworski transitions”. In the following sections we present first the protestors collective action game, then the incumbent coalition’s coordination game, and then the over-arching transition game within which these games are nested.

4.1 Civil Society Collective Action Game

The wave of protesters that came onto the streets of Cairo on the 25th of January 2011 faced a host of collective action problems. First and foremost, no one would have wanted to be the first one on Tahrir square to realize that you were the only one there. That would almost surely have resulted in a visit to a police torture chamber. This would have been the case for any group of protesters of a size of less then some undefined critical mass. The question then becomes why would anyone storm unto the streets before he knew for a fact that enough people would join him so that they would collectively meet this critical mass? In this perspective, the desire to overthrow the incumbent coalition becomes a classic collective action problem. We model that game as an assurance game. Such a game in a very simple discrete outcome form is depicted in figure 2 with the preference rankings seen in equation 1. In a two person assurance game the rankings are ordered so that they both get the biggest payoff if they work together, and for each player the lowest individual payoff comes from being the sole one doing any work. These payoffs make intuitive sense in a revolutionary setting from civil society’s stand point. You get the highest payoff from mobilizing “everyone”. Since what are you are fighting for is a perfect collective good, no cost is born by anyone from another person joining in the effort. There is no rivalness. If on the other hand you are among the few who take to the streets, the state’s response can be swift and brutal. The payoff for doing nothing is therefore higher than the payoff for going alone.
The game then becomes as classic collective action game, were the key is to mobilize a sufficient number of protesters. If \( n \) is the size of the group, i.e. number of protesters, and the payoff depends on the number of people participating, then people will join in if \( R(n) > S(n) \). Were \( n \) is some function of preferences. We say \( n \) and not \( n + 1 \), since for very large groups, every additional person makes only a small difference. The relationship between group size and and payoff is depicted in figure 3 were group size is on the x-axis and payoffs are on the y-axis. The Assurance game, as the chicken game, has two Nash equilibria, (R, R) and (P, P), and the number of people who join determines the equilibria that prevails. A key issue in these games is to determine the focal points towards which actors, here protesters, can converge. The problem for the protest movement is to make sure that enough people take to the streets. Most people, however, will be reluctant to do this, since the cost is high and since they are uncertain about how many will join. This problem is exacerbated by what Kuran (1989, 1995) calls “preference falsification” whereby people publicly express support for a regime, but privately may not support it. A mechanism is thus needed that makes it possible for individuals to converge on the belief that masses will take to the streets, and this mechanisms has to be stronger than the pull from the “Kuran” factor. This is where the internet has played an especially important role in the current Arab uprisings. More generally this is a question of how readily available what Bueno de Mesquita and Smith (2010, 2009) call “coordination goods” are. However, while Bueno de Mesquita and Smith (2009) consider freedom of assembly, free press, free speech and a transparent government to be “coordination goods” which makes organizing revolutions easier, we interpret such goods more narrowly to be a mechanisms by which distant individuals can converge on the belief that although most people claim to support the regime, in reality they do not, and therefore that to join a protest movement is to join a large group.

Olson (1965) noted that there is often an inverse relationship between group size and efficiency. As size increases, efficiency decreases. Sandler (1992, 52–54) looks at this through a Cobb-Douglas utility function in which utility \( U = y^\alpha Q^\beta \), \( \alpha \) and \( \beta \) are constants, and \( y \) and \( Q \) are the inputs or products actors value. Inefficiency can then be measured as the ratio of the Nash equilibria to
the Pareto-optimum solution\(^4\). Inefficiency in our context rises primarily from individual protesters engaging in behavior such as looting. A revolutionary moment obviously makes such behavior less costly, and can thus be individually rational. The cost of such behavior will decrease with group size. In addition to the obvious societal loss from such behavior, looting is inefficient for especially two reasons: (i) it can spark and increase disillusionment with the revolution, thus increasing the chances of defection which in turn decreases the chances of “victory”, (ii) it makes it easier for the incumbent to claim and convince people that the revolution is nothing more than a mob, and that people should, for their safety, side with the incumbent, a mechanisms that would have the same effect as (i). This mechanism is by and large overlooked in the literature. In the model we develop here, in which two collective action games are nested within a chicken game, it can become an important factor. Since coordination is important for both sides of the chicken game, inefficient behavior from the protesters side can be used by the incumbent both to pry people away from the protestors coalition, as well as for shoring up his own governing coalition by pointing towards the chaos the other side is producing. For the protestors this is then not a problem of size, but a problem of coordination, and coordination grows more difficult as size increases. Formally this implies that the \(R(n)\) function is not linear but quadratic and that it is concave and increasing.

Left completely to itself, civil society would probably have a decent chance of overcoming the collective action problem. The incumbent regime, however, will seek to complicate matters. Weingast (1997) models the interaction between an incumbent and two groups of citizens. The incumbent needs the support of at least one to stay in power. By selectively repressing or transgressing against one group and coopting and thus sharing benefits with the other, the incumbent can prevent civil society from forming a unified front against the regime. A unified front that would be able to overthrow it. This aspect is largely absent from the Przeworski (1991) model. In our model incumbent strategic use of repression and cooptation would influence the \(S(n)\), that is the payoff from a unilateral withdrawal, \(S(n)\) is determined by the individual utility functions. Returning to the Cobb-Douglas utility function, \(U = x^\alpha y^\beta\), we can interpret the two “products” \(x\) and \(y\) to be

\[^4\text{Formally: } Q^n/Q^* = (\alpha + \beta)/(\alpha n + \beta)\]
broadly political rights and safety. Each individual face a choice between short term safety, and long term realization of political and social rights, in other words they face a budget constraint. In a collective action game such as this the individuals that value political rights over safety will join the protest movement, but no individual is willing to completely forego some measure of safety. The incumbent in turn will attempt to influence these goods. The incumbent can raise the cost of safety by repressing, or decrease the utility of political rights by coopting an individual. The strategies are on the personal level mutually exclusive, the incumbent can either repress or coopt an individual. These repressive or cooptive actions by the incumbent influence the two provisions in the Cobb-Douglas utility function by a factor $\theta$. One way of modeling is by rewriting the utility function to take this into account:

$$U(x, y) = x^{\alpha} - \theta_c x y^{(\alpha-1)} + P_{\text{Kuran}}(\theta_r) y$$  \hspace{1cm} (2)$$

Where $x$ is political rights, $y$ if safety, $\alpha$ is a constant, $\theta_c$ is the offset in the value of political rights from being coopted and $p(\theta_r)$ is the cost of repression to safety, multiplied with the probability of this repression being successful. If $\theta_c > 0$, $\theta_r = 0$, and the other way around; i.e. the strategies repress and coopt are mutually exclusive. On the repression side, the probability of successful repression is in turn influenced by the factors discussed above relating to “preference falsification” and “coordination” through the factor $P$. The two $\theta$s modify the utility of political rights and safety. When cooptation increases, the utility an individual attaches to political rights decreases, and when repression increases the utility of safety as well increases. Differentiating yields the marginal impact of political rights $x$ on utility:

$$\frac{\partial U}{\partial x} = \alpha x^{\alpha-1} + \theta_c y^{(\alpha-1)}$$  \hspace{1cm} (3)$$

and for safety, $y$:

$$\frac{\partial U}{\partial y} = x^{\alpha} y^{(\alpha-1)-1} + P(\theta_r)$$  \hspace{1cm} (4)$$

The Cobb-Douglas functions are a standard way of modeling collective action problems, but they are rather restrictive and do not fully cover the issues we want to address here. We therefore in the following section move away from these, and develop a more general pay-off structure. The central point from the discussion above is that the cost of contributing varies with the amount of protesters $k$. So far the game is equivalent with the Assurance game. In that game, however, no extra cost is paid if you contribute and less than the people needed to produce or obtain the good as well contribute. In a revolutionary setting this would impose a highly unreasonable assumption, and would lead to an overestimation of the possibility of civil society overcoming the collective action problem. Participating in a communal building project does not by itself incur any other cost than the direct resources you put into the job. Participating in an uprising, on the other hand,
introduces in the extreme a clear and present danger to your life. This risk, as discussed above, varies with the number of people who choose to participate. If enough people participate, the risk of brutal subjugation is lowered. As the chief of the East German secret police is reported to have told the head of state Erich Honecker during the protests of 1989: “Erich, we can’t beat up hundreds of thousands of people” (Przeworski, 1991, 64). To account for this we develop the payoffs in table 4. As in the Assurance game the good the group is attempting to acquire, here political rights, is enjoyed whether or not an individual participated in securing it. The probability of securing this good increases, however, if one participates. If civil society is not able to solve this collective action problem, each member get a pay-off of 0. For the case in which a person does participate, he gets 1 minus the a cost \( c \) which he spends “working for it” if enough people show up. If to few people show up however, the person gets a pay off of \( 1 - \theta c \). The parameter \( \theta \) is an extra cost parameter the regime adds through its subjugation of the protesters.

\[
U(S_i) = \begin{cases} 
1 - c & \text{if she and at least } k \text{ contribute} \\
1 - \theta c & \text{if she and } x < k \text{ contributes} \\
1 & \text{if she does not contribute but at least } k \text{ others do} \\
0 & \text{otherwise}
\end{cases}
\]

Let \( \gamma \) be the sum of the contributions made by everyone but one, while \( k \) is the number of people participating. Payoff from contributing is then:

\[
Pr(\gamma < k - 1) \cdot 1 - \theta c + Pr(\gamma \geq k - 1) \cdot 1 - c
\]

(5)

Payoff from not contributing:

\[
Pr(\gamma < k) \cdot 0 + Pr(\gamma \geq k) \cdot 1
\]

(6)

The mixed strategy equilibrium, whereby a person is indifferent between participating and not participating is found by equating these two expressions.

4.2 Incumbent Response and Coordination Game

The incumbent is not a monolithic actor in any country. Tensions may exist within the governing coalition, and splits and fissures do occur. Such tensions, as noted above, are likely to grow more pronounced in situations of political uprising. Whereas crises stemming from natural disaster, war, etc. create clear and often indisputable focal points on which the actors can converge, crises stemming from a challenge to a coalition’s legitimacy may not have this effect automatically. Instead, such crises are liable to at very least do two things: (i) make tensions more acute or bring them
to the forefront, (ii) open up new strategic alternatives. These mechanisms by them selves imply that a focus on the incumbent as a coalition instead of as a unitary actor could be fruitful. In the following therefore we analyze the authoritarian incumbent as a coalition which face the same challenges as any governing coalition. Central to any coalition is the basic point that their payoffs depend both on the internal game played between the different parties in the coalition, and the game played between the coalition and some other player, in our case the group of protesters. The payoff vary with the results of both of these games, and the within coalition game is therefore nested inside the larger incumbent coalition vs. challengers game.

A crucial difference exists between the games played by the incumbent and the protestors. The protestors are playing a one-shoot game, while the groups making up the incumbent are playing an iterated game. This creates a very different dynamic. Given the size of the protesting group, it is impossible for each individual protester to arrive at an optimal strategy taking into consideration the strategies of all the other individuals. For the individual protester then the question becomes much more a question of probabilities. How likely is it that people will take to the streets tomorrow. On the incumbent side, in contrast, the number of actors is much lower, and each actor is considering what his or hers best strategy is. To simplify the analysis we will however not consider all intra-incumbent actors but restrict ourselves to two key players. These two players are by themselves as well actually coalitions. For this game we will restrict the incumbent to: a military wing and a political wing. In this set-up then an authoritarian country is governed by a ruling coalition, and the effectiveness of the coalition depend on the actions of the coalition’s partners. This conception is different from how Wintrobe (1998) analyzes dictatorships. In the Wintrobe (1998) analysis a dictator has some set of resources he can spend on ensuring loyalty or repression, the amount of repression depends on the character of the dictator. Totalitarians want to maximize control of the population, while tinpots really only want to maximize their personal gain, so they in turn minimizes the cost of staying in office. Wintrobe (1998) analyzes a range of different authoritarian regimes but he always conceives of the incumbent as a de facto unitary actor.

The ability of the dictator to stay in power is dependent on the ability of his coalition to stay in power. It is not just a question about his ability to repress or buy off the “masses”, it is as well a question about his ability to keep his coalition intact. Potential challengers of course now this, and they will look for signs indicating that the coalition might be breaking. This, of course, is the reason why dictators often put out ludicrous statements about how united the country is when they face threats to their political survival. Exemplified by the Muammar Ghaddfi’s son Saif’s statement to ABC News on the fourth of March: “So we tell the people, be happy. This will never, ever happen because the Libyan people are so united and please wait for surprises”, or his statement to the BBC six days later that Libya is “united and so strong”.

Interestingly, the incumbent coordination game is probably most often played under one-sided

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5The literature on governing coalitions is huge. See the seminal works by (Riker, 1962) and (Tsebelis, 2002). For a recent review see (Humphreys, 2008)
incomplete information. If we limit ourselves to the military and the dictator, it is safe to assume that the preference rankings of the dictator is common knowledge. At least to a very large extent. The preference ranking of the military on the other hand is not necessarily know to the dictator. At first glance one might view the dictator – military game as something resembling a classic stag hung game where strategic uncertainty stems from the fact that you can not know for sure if the other hunter actually prefers stags over hares, and therefore really will participate in hunting stag which requires a team effort, and not unilaterally hunt for hare leaving you with nothing if you do not defect as well. In that game the uncertainty is two sided, but here the uncertainty is only about one player. The army knows that the dictator prefers stag, and would very much prefer - to continue the analogy - to hunt together with the army. The dictator on the other hand can not be sure if the army prefers the opposition to him.

The payoff for the military are shown in table 6. All of these payoffs are probabilistic, and since this game and the civil society collective action game is played simultaneously they depend on the beliefs the military hold about the likelihood.

\[ U(S_i) = \begin{cases} 
  p(\alpha) & \text{stays with dictator and prevails} \\
  p(\beta) & \text{stays with dictator and is ousted} \\
  p(\gamma) & \text{defects to civil society and prevails} \\
  p(\delta) & \text{defects to civil society and is defeated} 
\end{cases} \]

\[ \alpha > \gamma > \delta > \beta \] (7)

The payoff for the dictator are shown in table 6. All of these payoffs are probabilistic, and since this game and the civil society collective action game is played simultaneously they depend on the beliefs the military hold about the likelihood.

\[ U(S_i) = \begin{cases} 
  p(\alpha) & \text{Prevails and keeps coalition} \\
  p(\beta) & \text{Prevails but coalition breaks} \\
  p(\gamma) & \text{Ousted but keeps coalition} \\
  p(\delta) & \text{Ousted and coalition breaks} 
\end{cases} \]

\[ \alpha > \gamma > \delta > \beta \] (8)
4.2.1 Different Regime Types

4.2.2 Waiting it Out

5 Main Game

Figure 7 shows the game played between the incumbent and the protesters. The game starts with a move by civil society that has to decide whether or not to challenge the incumbent, rebel. If civil society decides to stay with the incumbent the game ends, if the decide to challenge, rebel, than that means that the collective action problem discussed above has been solved. If civil society rebels, than the incumbent has to decide if it wants to quite, thus yielding to the demands of the protesters, or fight. Quitting at this point will actually give the incumbent a reasonable payoff. In the next move, we relax the assumption of a unitary incumbent actor. At this stage the government has decided to fight, and now the military has to decide if it wants to stay loyal to the incumbent, or defect and join the rebels. The probability that the military stays with the incumbent is denoted $Q$. If the military defects and joins the rebels, we assume that the game ends since the government has lost its “iron fist”. At the last node the military has decided to stay with the incumbent and a battle is fought between the incumbent and the rebels, which the rebels win with probability $p$. In the original chicken game this will be a situation were neither party swerves.

![Figure 7: Revolution Game](image)

The payoffs for the game in figure 7 are ordered:

$$e > d > c > b > a$$ (9)

The solution to this game depends on two probabilities: the probability the military will join
the rebel $Q$, and the probability that the rebels will win the war $p$. At this point we assume that the challengers have solved their collective action problem, so that they have a reasonable chance of prevailing in a full blown conflict. The game points to the central role played by the military. Equation 8 and 10 give the expected utilities. For the rebels to challenge the incumbent they need a probability of winning of $p = \frac{(1/Q^2 - 2)}{3}$. These relationships are shown graphically in figure 8, the probability of winning is given along the y-axis and the probability of the military defecting from the incumbent along the x-axis. At first glance the figure looks strange, but it has some nice features. The expected utility for the rebel is a function of the probability of winning and the probability the military will join. For most of the graph therefore the line is zero (or actually below zero) since in most cases both of these probabilities are negligible. They also move in tandem. The probability of winning increases as the likelihood of a military defection increases. The majority of regimes will at any given point be in the lower left quadrant of the figure, i.e. both the risk of successful challenge and the risk of a military defection is exceedingly low.

Expected utilities for the Incumbent:

$$EU_G = Q[(p \cdot e) + (1 - p) \cdot b] + (1 - Q) \cdot d$$  \hspace{1cm} (10)

$$p = \frac{Qpe + Qb - Qpb + d - Qd}{c}$$  \hspace{1cm} (11)

and for the challengers:

$$EU_R = Q[(p \cdot b) + (1 - p) \cdot e] + (1 - Q) \cdot c$$ \hspace{1cm} (12)

$$p = \frac{Qpb + Qe - Qpe + c - Qc}{c}$$ \hspace{1cm} (13)

Figure 8: Revolution Game
6 Discussion

The game illustrates two key points: first, faced with a rebellion, the incumbent can quit - and incumbents often do quit - as recently exemplified by Hosni Mubarak and Ben Ali. Second, popular demonstrations faced with a coherent political-military opposition seldom emerge successfully. In our game, we assume that losing a fight is costly, and that a potential rebel will choose to remain quiet when facing a violent regime with firm military backing. Yet, we continue to see popular revolts against such regimes. While Gandhi’s challenge against the British might have been rational given the latter’s mixed signals on repression, the Jews of Warsaw who rose against their German occupants in April 1943 could not have expected to surrender to the rebellion, and far less expect any offer of negotiations from the Wehrmacht. Nevertheless, the alternative they faced was Holocaust. In our model, the difference for the rebels was either to die fighting or to die in a concentration camp, if not preceded by death through starvation or illness in the Ghetto.

6.1 Poland

The uprising started in January 1943 as German police troops intensified transportation of Jews from Warsaw to various concentration camps. Initially successful, two organizations established control over the Ghetto and managed to reduce the number of deportations from the Ghetto. The success was largely due to massive popular support for the rebel organizations. Yet, on 19 April 1943 the uprising was suppressed. German forces blew up or burned down building by building, and deported or killed almost every person in the Ghetto. Very few Jews survived this battle.

The Warsaw Ghetto uprising is an interesting example of a rebellion where both parameters in our game disadvantage the rebels. The likelihood of military success was close to zero and the likelihood that the Wehrmacht would turn against the Nazis was even smaller. Yet, we observe a rebellion, most likely because the difference between the strategies ‘Stay’ and ‘Rebel’ was perceived as rather small. In most other examples there is a very real advantage to stay alive rather than being killed in an uprising.

After the Second World War, we observe a number of chief executives that have been forced to step down following large demonstrations. First, British colonial rule in India was abolished as the British were forced to choose between large-scale repression and withdrawal. Other notable examples include Portugal (1974), Iran (1979), Philippines (1986), and South Korea (1987). Then of course are the events of 1989 in Eastern Europe that effectively ended communism as a viable system of governance. If nothing else, these examples should inspire individuals to join in a revolution.

6.2 Burma

Preceding the events of Eastern Europe, a broad coalition of students, monks, and workers took to the streets of Rangoon demanding reform. Since a 1962 coup, Burma had been ruled under an
ideology known as the Burmese Way to Socialism (cit.). This ideology transformed a relatively prosperous country, by regional standards, to a permanent complex humanitarian disaster.

Early demonstrations in March 1988 were brutally repressed, but the repression functioned as a mobilizing factor among students. The government responded by closing the university and continuous repression against demonstrators, but the summer of 1988 saw massive demonstrations on a daily basis, not just in Rangoon but across Burma. The demonstrations seemingly achieved a goal when the strongman Ne Win announced his resignation, but his resignation was not considered real and his replacement was not considered an improvement.

On August 8, 1988 a massive demonstration took place in Rangoon and other cities, which was met with large-scale military operations. Over the next four days several thousand persons were killed. On August 12, the new president, Sein Lwin stepped down in an attempt to restore order, and the socialist party congress was convened to find a solution. This congress voted almost unanimously to allow multi-party elections, but demonstrations continued over the composition of the transitional government.

At this stage, the opposition became increasingly well organized and increasing numbers of policemen and soldiers switched allegiance. The communist party would rely on electoral fraud to remain in power. Everything changed on September 18, as a military coup d’état removed the Communist Party entirely from political power and cleared the streets for protestors with brute force. As many as half a million people is said to have been present at the largest demonstration, and more than 10 000 were killed during the six months of demonstrations.

While the crack-down achieved its goal in ending the large-scale demonstrations, social and political order was and is not achieved in Burma. Many ex-demonstrators took up arms, either through the All-Burmese Student Union or through one of the many ethnic rebel organizations. The inability to establish order underscores how close to success the Burmese uprising actually was. If we place the case of Burma into our formal model, we might see this as a case where the likelihood of success was deemed to be sufficiently large to warrant rebellion even in the absence of support from the armed forces.

If the first student riots in March had been met with the massive repression that ended demonstrations in September, we would probably not have heard of them. If the concessions to the democracy movement made in September had been made in March or April, the outcome might have been a very positive one. What brought the communist party down was the application of inadequate force. The increasing turnout means that R(n) was sufficiently higher than S(n) that individuals found demonstration to be the best strategy.

In the end, the outcome for the demonstrators was horrible. Life under the military dictatorship has been much worse than the poor conditions under communist rule. The Burmese case differs from the Warsaw Ghetto in the Burmese had something to lose, but they also had significant reason to believe that they would be successful with or without the explicit support of the Army.
6.3 Romania

By and large, the fall of communism was quite peaceful. The regimes were largely dependent on support from the Soviet Union or on the perceived threat of Czechoslovakia-style invasions. To some extent, the threat of an invasion serves as a dominant Q in our game: We can rebel, but we will be beaten by the armed forces of the Warsaw pact. When the so-called “Sinatra doctrine” replace the Brezhnev doctrine, communists in Hungary, Czechoslovakia, Poland, East Germany and Bulgaria opened up to multi-party systems. Only in Romania did the regime make a stand.

The revolution in Romania started in the city of Timisoara on December 16, where an ad hoc movement organized against the removal of an outspoken priest. The city major did not repress the protests, which subsequently turned into an anti-communist demonstration. The security police, securitate, stepped in and temporarily broke up the demonstrations, but neither the police nor the army was able to quash what had become a full riot.

While the Romanian media made no reference to the riots in Timisoara, news spread by word of mouth across the country. Ceausescu decided to address the nation on December 21 to signal his strength, and the party convened a support demonstration of 100 000 people. This speech was broadcasted live through state media, but the plan failed magnificently. Rather than supporting Ceausescu, the crowd turned against him - on live TV!

On December 25 Ceausescu was sentenced to death and executed. In the hours between his failed speech and his execution, massive number of ordinary people took to the streets and a split within the state apparatus appeared. The armed forces sided with the rebels, and effectively become king-makers when they sided with former crown prince Ion Iliescu. The secret police supported the Communist Party, and the short armed conflict that followed saw more than 1000 people killed. The case of Romania differs primarily from Burma in that the Army supported the revolution.

6.4 Portugal

The Portuguese dictatorship known as Estado Nuevo was overthrown in 1974. Not willing to forego its colonies, the rather small country of Portugal was fighting parallel colonial wars without enough resources to win either of them. A group of military officers organized a coup d’état, which was quite effectively executed on April 25 1974. What came to differentiate this coup from most others is the massive public response.

The case of Portugal does not fit with our game as such, since the sequence of events is reversed. First a substantial part of the army decided to remove the government and the present political system. The public mass-demonstrations came in support of this coup, against the regime. Thus the general public knew, as they ran into the streets, that at least a substantial part of the armed forces were on their side.

Yet the Carnation Revolution, as it is called, is informative. It was the first popular revolt of its type. Whereas the protesters in Burma and Romania could have reasonable expectations based on
empirical evidence from other revolutions, no such information was present in Portugal at the time. Indeed, a substantial number of demonstrations had been suppressed earlier, chief among them the 1962 Academic Crisis, where 7,000 students clashed with riot police on the University of Lisbon campus. Also, a good number of military coups had failed - both from left-wing and right-wing groups. There were good reasons to fear that this coup would fail as well.

It is difficult to know if the public support for the coup makers had any effect on the final outcome. President Caetano resigned his position on the afternoon of the 25th, but large-scale protests were already ongoing at that point in time. It is likely that the coup would have succeeded without large-scale public support, but it is also likely that the crowds in the streets convinced the many soldiers and under-officers that refused orders to open fire against rebels and protestors. Indeed, the Portuguese revolution did not cause more than four deaths.

7 Conclusion

All dictatorships face the dilemma that the more powerful the dictator gets, the more has a potential challenger to gain from a successful coup. The immediate solution is to become more powerful, but that clearly does not solve the core problem. In particular this reflects the civil-military relations. Becoming more powerful usually entails spending more on military and police. A popular solution has been to always have at least two parallel institutions, and pit them against each other. If possible, install close family members at the helm of these.

Yet, dictators cannot trust their military commanders. In three of our four cases, the military either completely or partially breaks with the executive branch, effectively ending the tenure of the executive. In two of the cases, the military sides with the rebels or with a particular faction within the rebel movement. Splitting the military into several competing organizations is perhaps a useful approach to lower the threat of a military coup, but the split increases the coordination costs if the regime is faced with a popular uprising.

The Burmese military stood unified with the government during the first phase, and there were tendencies towards defection among ordinary soldiers. The military coup came as a response to expected government surrender. During the whole 6-month crisis the military of Burma appeared as a unified actor and there were no signs of factionalism or internal divides.

The Portuguese case started with a split within the military, where a left-wing group of officers attacked the government and military units expected to be loyal to the fascists. The many wars fought by Portugal at the time meant that many citizens had relatives in the army, which in turn meant that the army and the people were quite near, whereas the dictatorial party was quite distant. The split within the armed forces that were revealed by the coup was a strong signal to the general public that a window of opportunity had opened up for a revolution.

In the case of Romania, the roles were reversed. In Timisoara, the army and the secret police had worked together in the eventually successful repression of the initial demonstrations. The split
appeared as the massive public participation made the top military commanders uncertain as to whether they would be able to contain and repress the country-wide demonstrations. The secret police did try to suppress the revolution, but it is testimony of the asymmetry of the revolution that they had to rely on terrorist strategies.

In all three cases, the incumbent dictators were deserted by their military forces and ousted from office. In neither of the cases has civil society successfully toppled a unified dictator/military. Indeed, it is difficult to find examples of where this has happened. True, dictators have been ousted militarily, but most examples start out with a small guerrilla movement that eventually become strong enough to force an outcome - not massive demonstrations.

7.1 Future Work

References


