The incumbent, challenger, and population during revolution and civil war

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Abstract

We consider revolutions and civil war involving an incumbent, a challenger, and the population. Revolutions are classified into eight outcomes. In four outcomes incumbent repression occurs (viewed as providing sub-threshold benefits such as public goods to the population). Accommodation occurs in the other four outcomes (benefits provision above a threshold). The incumbent and challenger fight each other. The incumbent may win and retain power or else lose, thereby causing standoff or coalition. In a standoff, which is costly, no one backs down and uncertainty exists about who is in power. In a coalition, which is less costly, the incumbent and challenger cooperate, compromise, and negotiate their differences. If the population successfully revolts against the incumbent, the challenger replaces the incumbent. Eighty-seven revolutions during 1961–2011, including the recent Arab spring revolutions, are classified into the eight outcomes. When repressive, the incumbent loses 46 revolutions, remains in power through 21 revolutions, and builds a coalition after 12 revolutions. When accommodative, the incumbent loses seven revolutions and builds a coalition after one revolution. The 87 revolutions are classified across geographic regions and by time-period.

Goodwin (2001) describes a revolution as "any and all instances in which a state or political regime is overthrown and thereby transformed by a popular movement in an irregular, extraconstitutional and/or violent fashion."[1] For us, this takes the form that the incumbent is replaced with the challenger. For example, in eastern Europe, the end of the cold war and the collapse of the Soviet Union brought a wave of revolutions which saw the overthrow of communist regimes in these countries along with a decline in Marxist ideology and the introduction of free market-based economic reforms. Later, the 2014 revolution in Ukraine pertained to struggle over orientation either toward Moscow or to western Europe. Further toward the east, the 2014 Thailand revolution pertained to desire for political reform.

Revolutions such as these are caused by various triggers. Examples range from fraudulent elections that stir up the population to a Tunisian street vendor who, harassed by police, unleashed previously untapped frustration on 17 December 2010 causing revolution or, indeed, to any event where an incumbent has to decide whether to react with strategies such as repression or accommodation. The advent of the Arab spring as from 18 December 2010 caused the removal of a number of autocratic leaders across North Africa and the Middle East. Autocrats there usually held either fraudulent elections (e.g., Tunisia) or no elections at all (e.g., Libya). In Tunisia, the population chose revolution and the response of the autocrat was to relinquish power. The autocrat might alternatively have fought the revolutionaries hoping to crush the revolt.

Contribution

As we discuss in the next subsection, the scholarly literature on revolutions is sizeable but that on *classifying* revolutions into distinct types is sparse, and so it appears worthwhile to grapple with classification first. In this article, we present a summative, descriptive overview whereas a forthcoming paper presents the underlying formal modeling.[2] In particular, we consider revolutions and civil wars with an incumbent, a challenger, and a population, which may revolt. The incumbent fights with the challenger and chooses whether to provide the population with benefits that lie below (repression) or above (accommodation) a threshold. The incumbent's provision of benefits affects the participation by rebels, for example in that it may change the cost of contributing effort to a revolution for at least some rebels, may raise the benefits of contributing effort for at least some other rebels, may raise a rebel's potential share of the collective good, and may raise the probability of a successful revolution. Enough people need to participate in the revolution collectively—a population-wide threshold has to be exceeded—to make individual participation worthwhile (Granovetter, 1978). If the population revolts successfully, the challenger replaces the incumbent. If the incumbent loses against the challenger, a costly standoff may follow with

disagreement over who is in power, or else a coalition may follow where the incumbent and challenger cooperate and negotiate their differences. Distinguishing among repression and accommodation, winning and losing, and standoff or coalition when losing, results in eight possible outcomes (see Table 1) which are discussed later on.

Following a brief literature survey as well as a more detailed conceptualization of interactions among incumbent, challenger, and population, the section thereafter classifies 87 revolutions from 1961 to 2011 into the eight outcomes. Since readers are familiar with some or most of the revolutions, they can reflect on which forces have caused each of the eight outcomes we suggest. The revolutions are further classified into how they are distributed across six geographic regions and across three time periods. The penultimate section considers the Arab spring revolutions, and the final section concludes.

Literature

As mentioned, the literature on political revolutions is substantial and considers many facets. A brief overview follows. Kuran (1989) presents a theory of how political revolutions could occur in *unanticipated* ways. Examples include the 1789 French revolution, the 1917 Russian revolution, and the 1978–79 Iranian revolution, all of which took most people by surprise. More recently, the Arab spring revolutions, which began in Tunisia in late 2010, were equally unanticipated. Reasons for the turmoil in North Africa and the Middle East, the MENA region, have been explored by various authors. Kuran (2010; 2012) himself, for instance, argues that the doctrine of Islamic economics is simplistic, incoherent, and largely irrelevant to contemporary economic challenges, and that what slowed the economic development of the Middle East in particular was that, since around the tenth century, Islamic legal institutions hampered the emergence of features such as private capital accumulation, corporations, large-scale production, and impersonal exchange, all leading to economic discontent fostering revolution.

Tullock (1971; 1974) made seminal contributions to our understanding of revolutions, yet viewed them as mythical since an oppressed people wishing to rise up against a tyrant face a *free-rider dilemma* (Olson, 1965). A substantial literature then emerged probing why and how revolutions nevertheless occur (for reviews see, e.g., Kurrild-Klitgaard, 2003; Lichbach, 1995; Gehlbach, Sonin, and Svolik, 2016). Foran (1993) analyzes the earliest revolution theories and argues for the need to move to a more inclusive *broad new paradigm* based on modeling economic, political, and cultural processes, whereas Beissinger (2007) develops an approach to understanding revolutions as an *emulation* of the prior successful example of others, such as the post-communist revolutions in East-Central Europe and in the MENA region.

The article considers interactions among incumbents of high political office, challengers, and the general population. We classify 87 leadership challenges and revolutions from 1961 to 2011 into eight outcomes and discuss their spatial and temporal distribution.

Acemoglu, Vindigni, and Ticchi (2010) analyze the *persistence* of revolutions resulting in long civil wars. Indeed, McFaul (2002), who studies outcomes of revolutions, regards Russia's revolution as unfinished. Migdal (2015) focuses on revolutions and social change in *developing regions*, while Zimmermann (2012) focuses on theories of *violence* and revolutions. Casper and Tyson (2014) consider *popular protest and elite coordination* in coup d'etats, whereas Angeletos, Hellwig, and Pavan (2007) consider *regime change*, specifically, and Edmond (2013) writes on *information manipulation and coordination* related to regime change.

In recent years, the presence of *flawed elections* have received attention in relation to revolutions. Typically held by autocrats, they often involve manipulation and violence (see, e.g., Hermet, Rose, and Rouquié, 1978; Schedler, 2007). The cost to the population of flawed elections involves loss of life, physical and mental injury, suppression of freedom of speech, and human rights violations. While the election process can strengthen democratic institutions, it can also worsen conflict (Collier, 2009). Acemoglu and Robinson (2006) link the violent nature of election processes to countries' colonial roots. Ellman and Wantchekon (2000) consider situations where one strong party controls sources of political unrest. This party likely wins with asymmetric information about its ability to cause unrest. Related studies include Alesina (1988), Alesina and Rosenthal (1995), and Calvert (1985). Egorov and Sonin (2018) find that, on the one hand, regimes with a high degree of repression by the elite are less likely to hold fair elections. On the other, when they face a high cost from protests then fair elections are more likely. For electoral fraud and revolutions also see Little (2012) as well as Lindberg (2006) for an analysis of democracy and elections in Africa.

While considering many facets of revolutions, then, the literature on *classifying* revolutions nonetheless is sparse. Yet classifying revolutions is important since the causes of revolutions may be better understood if they are properly systematized. Along those lines, Basuchoudhary, *et al*. (2018) use *machine learning* to understand civil conflict. Accounting for actors with different objectives and the path-dependent nature of conflict, their algorithm applies out-of-sample techniques to choose among competing hypotheses about the

sources of conflict based on their predictive accuracy. Such a neutral or agnostic approach may avoid challenges associated with missing data, unusual statistical assumptions, the relative rarity of civil conflict, and multi-directional causality between conflict and its correlates. The authors argue that understanding which causes lead to conflict, and through which possible paths, may enable one to better design policy to curtail or even to terminate conflict. Regarding causes of revolution and civil war, the *ideological origins* of the 1775–83 American revolution are presented by Bailyn (1992), wheras Besancon (2005) analyzes the nexus between *economic inequality* and revolutions and conflict.

For a survey on civil war, including causes, see Blattman and Miguel (2010). They synthesize studies of cross-sectional inference using country-level data and panel-data studies accounting for within-country variation. For a survey on the determinants of government repression and human rights violations, see Davenport (2007). These two surveys focus on exploring empirical regularities, and less so on linking theory to data.

Shults (2018) argues that existing approaches to classifying revolutions usually reflect researchers' own theoretical views. Revolutions may thus get classified according to their mission, civilizational features, driving forces, or ideological orientation. Those that fall outside the researcher's view may get ignored. As an alternative, Shults recommends that revolutions should be classified from the point of view of the revolutions themselves, applying two criteria. The first is the algorithm, including the course and stages of revolutions and their temporal sequence. The second is the tasks revolutions address, or the problems they solve. Finally, Marder (2017) analyzes revolutions applying philosophical categories drawn from Aristotle and Kant, applying quantitative and qualitative, modal and positional, spatial and temporal, and substantive dimensions. Our own classification approach is different, of course (focusing on outcomes), and is summarized in the following section.

Conceptualizing interactions among incumbent, challenger, and population

We consider a country with an incumbent, a challenger, and a population. The incumbent is in power, governing the country. In an autocratic country the incumbent may have absolute sovereignty. The challenger opposes the incumbent. The challenger may comprise an ideologically committed opposition, parts of the elite or military, or various industrial interests or ethnic groups. It may consist of groups with incompatible interests, joined by a common goal of replacing the incumbent. The population may support the incumbent if the incumbent provides what the population needs, e.g., prosperity and public goods such as security. Conversely, the population may support the challenger if dissatisfied with the incumbent. If sufficiently dissatisfied, the population itself may initiate a revolution so long as it has the ability to organize so that its revolution gets off the ground.

The incumbent and challenger are in conflict, struggle, or battle (Tullock, 1967) and they fight or compete with each other in various ways (Hirshleifer, 1995). They may seek to undermine each other and seek legitimacy for doing so as viewed by the population. The fighting may be nonviolent or violent and it may or may not constitute a civil war.

Table 1 conceptualizes eight *outcomes*, numbered in rows 1 to 8. Divided into two groups, rows 1–4 and 5–8, column 1 then indicates whether or not the incumbent represses the population. *Repression* means providing no benefits to the population, or providing benefits below a threshold. Not repressing the population is referred to as *accommodation*, i.e. providing benefits above a threshold. Examples of benefits are public goods such as schools, hospitals, infrastructure, water, security, employment, various privileges, human rights, and social and economic rights.

Olson (1965) proposes that dictators will provide public services only to the extent that they increase gross domestic product (GDP). A threshold for providing benefits to the population may be at or above the GDP-enhancing benefits that the incumbent provides to the population. Providing benefits at that threshold is assumed not to decrease the probability of successful revolution. Countries experiencing revolutions often do not provide sufficient benefits to the population due to factors such as unstable governance, poorly developed societal institutions, corruption, poverty, limited education, natural catastrophes, and low GDP.

In Table 1 column 2, the incumbent and challenger fight regardless of whether the incumbent represses or accommodates the population, but the incumbent wins the fight. Hence in row 1 the symbolic outcome is *RP* is used, meaning that the incumbent represses and retains power (see columns 6 and 7). In contrast, in row 5 the incumbent accommodates and retains power, denoted as *AP*.

In columns 3 and 4 the incumbent loses the fight against the challenger, which causes either standoff (column 3) or coalition (column 4). Standoff gives the outcome *RS* if the incumbent represses, and *AS* if the incumbent accommodates. Standoff occurs if the incumbent does not accept its loss or if the challenger fails to acquiesce. Tensions build up and neither the incumbent, the challenger, the military, the population, governmental institutions, the international community, nor anyone else, knows who is in power. Any actor may potentially

Table 1: Formalizing the eight outcomes

Out-come	*1 Incumbent represses*	*2 Incumbent wins against challenger*	*3 Incumbent loses causing standoff*	*4 Incumbent loses causing coalition*	*5 Successful revolution*	*6 Verbal outcome*	*7 Symbolic outcome*
1	**Yes**	**Yes**	No	No	No	Incumbent remains in power	RP
2	**Yes**	No	**Yes**	No	No	Standoff	RS
3	**Yes**	No	No	**Yes**	No	Coalition	RC
4	**Yes**	No	No	No	**Yes**	Challenger becomes new incumbent	RL
5	**No**	**Yes**	No	No	No	Incumbent remains in power	AP
6	**No**	No	**Yes**	No	No	Standoff	AS
7	**No**	No	No	**Yes**	No	Coalition	AC
8	**No**	No	No	No	**Yes**	Challenger becomes new incumbent	AL

support the incumbent, the challenger, both, or neither. A standoff slows down a country and is costly since policy directions, budget allocations, orders, and so on become unclear and negotiations may never end.

Coalition, in column 4, gives the outcome *RC* if the incumbent represses, and *AC* if the incumbent accommodates. In a coalition the incumbent and challenger agree to cooperate and be in power jointly. This is less costly than a standoff but more costly than either the incumbent or challenger being in power since the incumbent and challenger have to negotiate their policy differences and seek compromises. They may for example allocate ministerial positions and choose policies to represent either the incumbent or the challenger.

Column 5 denotes a successful revolution so that the challenger becomes the new incumbent. The outcome is *RL* if the incumbent represses, and *AL* for accommodation. Whether revolution is successful depends on whether, and the extent to which, the incumbent provides benefits to the population. A successful revolution inevitably replaces the incumbent with the challenger. If unsuccessful, or if the population at large does not revolt, the outcome depends on the fight between the incumbent and challenger as discussed above.

Eighty-seven revolutions, 1961–2011

In Appendix Table A1 we show 87 revolutions for 1961–2011. The table shows the years for the revolution, its name, and its outcome (using the aforementioned symbols *RP*, *RS*, *RC*, *RL*, *AP*, *AS*, *AC*, and *AL*). Our outcome coding made use of Table 1. We confine attention to revolutions where the population and/or challenger react to, and seek to replace, the incumbent. This excludes the 1994 Rwandan genocide initiated by the Hutu majority government mass slaughtering the Tutsi. The first and second DR Congo wars are excluded as well since they were initiated by Rwanda and Uganda invading DR Congo. The May 1968 noncivil rebellion in France is included since it was initiated by student protests against traditional institutions, capitalism, and imperialism.

We determined the outcome by researching each of the 87 revolutions subjectively. Judgment and subject matter expertise were applied, of course. Specifically, we first determined whether the incumbent was repressive (outcome *R*), which means providing benefits to the population below a threshold. Benefitting from varying backgrounds and expertise among the research participants, discussions proceeded until agreement emerged on whether the threshold for coding an incumbent as repressive had been reached. The 15 Arab spring revolutions, listed at the end of Table A1, were assessed to have started by the population, recognizing the incumbent as repressive. The 2011 Egyptian revolution was classified as *RL* since the incumbent, Hosni Mubarak, was replaced with the challenger, Mohamed Hussein Tantawi (on 11 February 2011). The 1989 Tiananmen Square Protest in China was classified as *RL* rather than *RP* because of the extensive leadership changes after the protest. For example, General Secretary of the Communist Party, Zhao Ziyang, was replaced by Jiang Zemin on 24 June 1989, and Deng Xiaoping exited the party leadership by

resigning as Chairman of the Central Military Commission. In South Africa, 1961–1990, the incumbent repressed the population applying apartheid policies, which led to the emergence of an anti-Apartheid movement and which eventually replaced the incumbent, also causing outcome *RL*. If the incumbent was determined to be accommodative, we coded this as outcome *A*. For example, for the 1964 Zanzibar revolution in Tanzania the incumbent, the Sultan of Zanzibar and his mainly Arab government, was determined to be accommodative. Frustrated by parliamentary under-representation in spite of winning 54 percent of the July 1963 election, the mainly African Afro-Shirazi Party and left-wing Umma Party mobilized a revolution on 12 January 1964. This resulted in replacement of the incumbent with the challenger, Abeid Karume, causing outcome *AL*.

The most frequent outcome, *RL* (an incumbent loses a challenge, is replaced, and the revolution is successful), occurs 46 times (53 percent). Outcome *RP* occurs 21 times (27 percent) meaning that following a challenge an incumbent retained power. Of ourcome *RC* there are 12 instances (15 percent); here, the challenge to the incumbent ended in a coalition outcome. *AL* occurred 7 times (4 percent), and *AC* occurred only once (1 percent). This accounts for our 87 cases as *RS*, *AP*, and *AS* did not occur at all.

The spatial and temporal distribution of revolutions

Figure 1 shows how the 87 revolutions are distributed across geographic regions, and Figure 2 counts revolutions by region and time period (1961–1989, 1990–2009, and 2010–2011). Again, outcomes *RL* and *AL* differ even though both capture the incumbent losing. Recall that *RL* means that the incumbent first represses but then loses, whereas *AL* means incumbent accommodation but who then loses nonetheless. In both cases, the challenger takes over. This captures, for example, the difference between the East German and Polish outcomes. Repression was the incumbent's strategy for the 1989 East German revolution (classified as *RL*), while accommodation was the incumbent's strategy for the 1990 Polish revolution (classified as *AL*).

The political, social, and economic revolutions that swept throughout Africa, Asia, Eastern Europe, Latin America, and North Africa and the Middle East (MENA) were the result of a variety of causes such as poor and oppressive government and social cohesion challenges with the consequent need to change socio-political institutions and reorganize the economic life of the country. In some cases, such as national independence or liberation movements, the uprisings or revolts were the result of oppression or exploitation by an external power (e.g., colonization or foreign occupation). We inquire into the patterns of revolutions over three time periods in an attempt to better understand the conditions for their occurrence, success, or failure, with a focus on the recent revolutionary wave in the Arab world in particular.

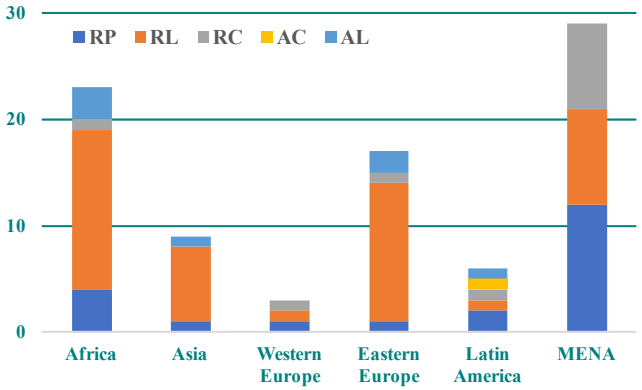

Figure 1: Number of revolutions per region, 1961–2011. *Notes*: The case color codes are as follows. Dark blue: *RP*. Orange: *RL*. Grey: *RC*. Yellow: *AC*. Light blue: *AL*. Cases *RS*, *AP*, and *AS* did not occur.

Revolution is a complicated phenomenon. Attempts to generalize causes, scope, patterns, and outcomes of revolutions can be misleading. Our 87 revolutions vary widely in terms of conditions for occurrence, methods, duration, motivating ideology, and outcomes. For instance, in Africa, many of the revolutions that took place in the 1960s and 1970s were motivated by a desire to gain national independence from colonial rule or liberalization from the control of a dominant administration. In most cases, the duration of revolutions or liberalization movements ranged from less than a year to more than three decades. The outcomes were deemed successful if they achieved their goal of gaining independence from an imperial power. The picture in Latin America during the same period was somewhat different. Most countries already had gone through the phase of gaining independence from European control but had difficulties addressing social class problems that prevailed in the aftermath of independence—and then led to rebellion by certain classes of society. In the MENA region, the earlier part of our covered time period coincides with the rise of Islamic fundamentalism, which revolted with grievances against policies of westernization and modernization adopted by their countries' leaders. One case is Iran where Islamists, led by Ayatollah Khomeini, rebelled against the Shah and his western ideas, culture, and allies to successfully gain control of the country and transform it into an Islamic Republic.

During the 1980s and 1990s, revolutionary movements spread fairly evenly across Eastern Europe, Africa, the Middle East, and to some extent Asia and Latin America (Figure 2).

The cold war state of political and military tension between the two superpower blocs (Western and Eastern), and the decline of the USSR interplayed differently across cases. During the cold war, the battle between the United States and the Soviet Union for increased diplomatic, military, and economic influence in developing countries fueled several chains of revolutions in Africa, Southeast Asia, the MENA region, and Latin America. Most of those revolutionary movements were short in duration (on average lasting one year) and less intense than the anti-colonial and national upheavals of the 1960s. The end of the cold war and the collapse of the Soviet Union brought a new wave of revolutionary leaders seeking to overthrow communist regimes in Eastern Europe. Leaders with vested interests in gaining and securing political stability, liberal democracy, and domestic development were supported by foreign powers, leading to revolutionary victory. The indubitable outcomes of this wave of upheavals were the decline of Marxist ideology and the rise of the liberalization of eastern European countries away from communist systems and consequent capitalist-oriented economic reforms in many developing and emerging countries.

Some of the reasons given in this section are tentative, laying the groundwork for more systematic future research, but two ideas remain. First, that classifying revolutions is in itself an important task. And, second, that finding reasons for revolution based on classification is an important but separate task as well. Specifically, substantially more evidence would be desirable combined with a clear emphasis on developing causal links between the correlates of revolution and the different classes of revolution.

The Arab spring revolutions

The wave of revolts and protests first in North Africa and the subsequent domino effect across the Middle East, frequently referred to as the Arab spring, has been very intense. Some successfully overthrew autocratic regimes (e.g., Tunisia, Egypt), others still struggle—and may ultimately fail—to overcome repression by the political elite (e.g., Syria). All our cases have evolved in complex ways over time. Few readers will be unfamiliar with the way the events unfolded. Starting in Tunisia in December 2010 with the self-immolation of a street vendor in protest of his ill treatment by the police, there followed violent street demonstrations in Egypt's major cities in late January 2011, followed by unrest in Libya, Yemen, Syria, and much of the remainder of the MENA region. While the protests in Tunisia, Egypt, Libya, and Yemen resulted in the removal of their leaders and governments, those in Sudan and Jordan only partially achieved their objectives as leaders agreed to step down at the end of their then-current terms. At the time of writing (2018), five revolutions are ongoing. This includes Syria, where street protests have escalated to very violent military operations and heavy fighting between Syrian government and rebel forces in cities such as Homs and Hama.

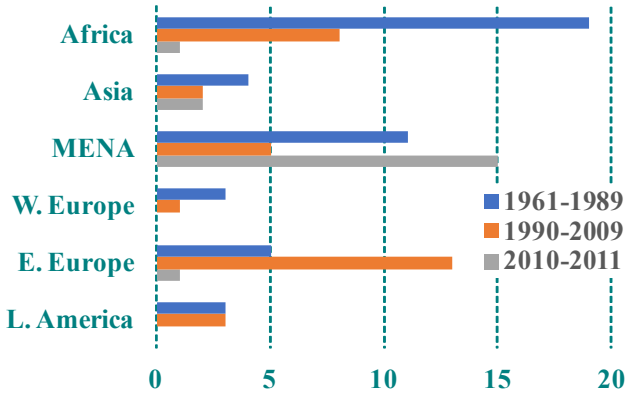

Figure 2: Number of revolutions per region by time period. *Note*: Nine revolutions overlap two time periods and are doubly displayed in the figure. *Source*: African Development Bank, Statistics Department.

One can assert this or that set of conditions for the occurrence of these revolts in the Arab world, but the reasons for success or failure of the actual revolutions can be quite complex. Relevant factors include, among others, authoritarian regimes or monarchy, high corruption, economic decline, unemployment, rising poverty, human rights violations, and structural demographic issues such as dissatisfied youth. To better assess the intricacies of victory of a social revolution, it would be instructive to compare the cases of Tunisia and Egypt with those of Libya and Syria. Fundamental questions remain unanswered such as: Why did the leaders in Tunisia and Egypt succumb faster than those in Libya? Why and how did Syria's government hold its ground, being on the verge of victory today? What role did external factor(s) play in these revolutions?

We define pre-revolutionary Tunisia and Egypt as "autocratic bureaucracies," in which social control rested on the division of labor and coordination of effort between a bureaucratic state and a powerful middle class. As an adjunct to its business interests, the middle class had acquired considerable authority over the majority of the labor force and in that authority it was backed by a central state that extracted taxes and labor from the population in cooperation with individuals of the middle class. Socio-political stability was maintained as the autocrat, bureaucracy, army, and/or police monopolized decisions while accommodating the middle class, even recruiting some of its members into state decisionmaking positions.

Ideally, when confronted with political or socio-economic crises (e.g., fiscal crises, military collapse, tax collection, regional disparities), a state will seek to strengthen itself through relevant reforms such as the abolition of middle class tax privileges. However, a powerful middle class can either block reforms—exemplified by the massive, and credible, demonstrations in 2011 in Tunisia and Egypt, resulting in the open conflict between the middle class and the state—or it can ally with the grievances of the poor against the overweening authority and ill-functioning of the state.

Conclusion

We consider revolutions and revolutionary uprisings, such as civil war and the Arab spring series of events, and consider an incumbent, a challenger, and a population. Systematized into eight outcomes, the incumbent represses the population in four of them (provides either no benefits at all or only below some threshold) and, in the other four, accommodates the population (provides benefits above a threshold).

If the incumbent wins against the challenger, power is retained. If the incumbent loses, a standoff or coalition may ensue. In a standoff it is unclear who is in power since neither incumbent nor challenger back down. A standoff is costly and slows a country since uncertainty exists about policies, budget allocations, and so on. In a coalition, incumbent and challenger share power. A coalition is less costly than a standoff since incumbent and challenger cooperate, negotiate, and compromise regarding policies and decisionmaking. In contrast, if the population succeeds in revolting against the incumbent, the challenger replaces the incumbent.

We consider 87 revolutions, 1961–2011, and map them onto the eight outcomes. The incumbent represses in 79 of the 87 revolutions but lost in 46 of them, remained in power in 21, and built a coalition in 12. When accommodative, the incumbent lost in 7 of the 8 cases and built a coalition in the remaining one. We plot the worldwide geographic distribution of our cases and further subdivide them by three time periods, 1961–1989, 1990–2009, and 2010–2011. Finally, we provide some characteristics of the Arab spring revolutions.

We suggest that an optimal degree of repression may exist (limiting the provision of various goods such as education) that can keep autocratic regimes in power, and this should be analyzed further in future research. Techniques such as partial dependence plots (e.g., Basuchoudhary, *et al*., 2018, p. 132) may be able to identify inflection points. Further analysis using structural modeling may assign causal links. In addition to highlighting nuance into why revolutions happen, such approaches may help prevent bloodshed and show the way to bargained, peaceful regime change that benefit populations. Of course, our classification of outcomes into eight classes should be scrutinized by applying for instance the techniques and approaches of Marder (2017), Basuchoudhary, *et al*. (2018), and Shults (2018).

Notes

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1. Goodwin (2001, p. 9).
2. Hausken and Ncube (2020, forthcoming).

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Table A1: Revolutions and their outcomes, 1961–2011

Case	*Years*	*Revolution*	*Out-come*	*Case*	*Years*	*Revolution*	*Out-come*
1	61–70	First Kurdish-Iraqi War	RP	31	79	Iranian Revolution	RL
2	61	Algiers Putch	RP	32	80	Coconut War (Vanuatu)	RP
3	61–91	Eritrean War of Independence	RL	33	70–80	Zimbabwe	RL
4	61–75	Angolan War of Independence	RL	34	83–05	Second Sudanese Civil War**	RL
5	61–90	Anti-Apartheid Movement	RL	35	86	People Power Revolution (Philippines)	AL
6	62–74	Independence of Guinea-Bissau and Cape Verde*	RL	36	87–91	First Intifada (Palestine)	RP
7	62	Revolution, northern Yemen	RL	37	87	Singing Revolution (Estonia, Latvia, Lithuania)	RL
8	62–75	Dhofar Rebellion (Oman)	RP	38	88	8888 Uprising (Burma/Myanmar)	RL
9	63–69	Bale Revolt, southern Ethiopia	RP	39	89	Caracazo (Venezuela)	RP
10	64	Zanzibar Revolution (Tanzania)	AL	40	89	Tiananmen Square Protests (China)	RL
11	64-79	Rhodesian Bush War/Zimbabwean War of Liberation	RL	41	89	Velvet Revolution (Czechoslovakia)	RL
12	64–75	Mozambican War of Independence	RL	42	89	Peaceful Revolution (East Germany)	RL
13	65	March Intifada (Bahrain)	RL	43	89	Romanian Revolution	RL
14	65	Malawi	AL	44	89	Hungary	RL
15	65	Zambia	AL	45	90	Poland	AL
16	66–88	Namibia Struggle for Independence*	RL	46	90	Riots in Zambia	RL
17	67–70	Biafra (Nigeria)	RP	47	90-95	Log Revolution (Croatia)*	RL
18	68	May 1968 in France	RP	48	90–95	First Tuareg Rebellion (Mali and Niger)	RP
19	68	Prague Spring (Czechoslovakia)	RP	49	91	Shiite Uprising (Karbala, Iraq)	RP
20	69–98	The Troubles (Northern Ireland)	RC	50	91	Soviet Union/Russia	AL
21	70–71	Black September (Jordan)	RP	51	92–95	Bosnian War of Independence	RL
22	71	Bangladesh Liberation War**	RL	52	94	Zapatista Rebellion (Mexico)	RC
23	74	Revolution, Ethiopia	RL	53	94–96	First Chechen War (Chechnya)*	RL
24	75–91	Western Sahara War**	RL	54	97–99	Rebellion in Albania	RL
25	75–90	Lebanese Civil War	RP	55	98	Kosovo Rebellion	RL
26	75–02	Angolan Civil War	RL	56	98	Bolivarian Revolution (Venezuela)	AC
27	77-92	Mozambican Civil War	RC	57	98	Indonesian Revolution	RL
28	78	Saur Revolution (Afghanistan)	RL	58	99–	Second Chechen War (retake by Russia)	RL
29	78	Kurdish–Turkish Conflict	RP	59	00–04	Second Intifada (Palestine)	RP
30	79	New Jewel Movement (Grenada)	AL	60	00	Bulldozer Revolution (Yugoslavia)	RL

Table A1 (continued): Revolutions and their outcomes, 1961–2011

Case	*Years*	*Revolution*	*Out-come*
61	01	Macedonian Conflict	RC
62	01	EDSA Revolution (Philippines)	RL
63	01	Cacerolazo in Argentina	RL
64	03	Rose Revolution (Georgia)	RL
65	03–	Darfur Rebellion	RL
66	04–05	Orange Revolution (Ukraine)	RL
67	05	Cedar Revolution (Lebanon)	RL
68	05	Tulip Revolution (Kyrgysthan)	RL
69	07–09	Tuareg Rebellion (Mali and Niger)	RP
70	09	Malagasy Political Crisis (Madagaskar)	RL
71	10	Thai Political Protests (Thailand)	RP
72	10	Kyrgysthani Revolution	RL
73	10–	Arab Spring (Tunisia)	RL
74	10–	Arab Spring (Algeria)	RP
75	11–	Arab Spring (Jordan)	RC
76	11–	Arab Spring (Mauritania)	RP
77	11–	Arab Spring (Oman)	RC
78	11–	Arab Spring (Saudi Arabia)	RC
79	11–	Arab Spring (Egypt)	RL
80	11–	Arab Spring (Yemen)	RL
81	11–	Arab Spring (Iraq)	RC
82	11–	Arab Spring (Bahrain)	RC
83	11–	Arab Spring (Libya)	RL
84	11–	Arab Spring (Kuwait)	RC
85	11–	Arab Spring (Morocco)	RC
86	11–	Arab Spring (Syria)	RC
87	11–	Arab Spring (Lebanon)	RP

Notes: * Liberation Movement—Liberation from outside powers; ** Liberation Movement—Resulting in secession and new state
Codes: RP: Incumbent succeeds and remains in power; RS: Incumbent loses causing standoff; RC: Incumbent loses causing coalition; RL: Incumbent loses revolution. Challenger becomes new incumbent; AP: Incumbent succeeds and remains in power; AS: Incumbent loses causing standoff; AC: Incumbent loses causing coalition; AL: Incumbent loses revolution. Challenger becomes new incumbent.
Source: African Development Bank, Statistics Department.