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Cascades of Protest and the Rise of Social Media:
Managing Opposition in the Information Age

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Abstract

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By Jana Marie Bridwell

This project examines the political implications of new media technology for non-democratic regimes, and in particular for the competition between an incumbent and domestic opposition actors. I argue that access to the tools provided by cell phones and the Internet alters the existing structure of protest risk for incumbents, while also providing opposition actors with new mobilizational tools. Incumbents manage the new content available through social media with information control policies that address the changed risks entailed by social media; these policies must be sensitive to regimes' existing competitive institutions. This model of protest also has implications for how opposition actors organize protest relative to highly publicized focal events such as national elections.

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Cascades of Protest and the Rise of Social Media: Managing Opposition in the Information Age *(An Introduction)*

When contested presidential elections in Iran led to an unprecedented wave of popular protest in the summer of 2009, reporters and analysts alike celebrated the protests as the effects of new social media technology. Popular use of the Internet and cell phones by ordinary Iranians became associated with critical, even transformative change to domestic politics (Sreberny and Khiabany 2010, Rahimi 2011). Following on the wave of this enthusiasm, the United States Depatrtment of State launched a new initiative to advance democracy via the Internet, while officials and scholars described how the Internet would empower groups and citizens relative to their autocratic rulers (Clinton 2010, Diamond 2010, Shirky 2011).

Similar events during the Colored Revolutions, in Moldova (both in 2009 and 2015), in Thailand (2010), and much of the Middle East and North Africa during the Arab Spring prompted similar excitement, even hopes for a democratic future as dictators would struggle to retain control over an uncooperative wired public (McFaul 2005, Mungiu-Pippidi and Munteanu 2009, Howard and Hussain 2011, Lynch 2011, Farrell 2012). Meanwhile, media advocacy groups around the world complained of an uptick in regime interference with the Internet.

Skeptics have labeled this enthusiasm as Western triumphalism (Rich 2011), naivete (Morozov 2011), or simply a superficial reading of politics (Hassanpour 2011, Palfrey et al 2009). Indeed, protest phenomena cannot be understood without an analysis of domestic factors; the Internet did not "cause" the Arab Spring (Brownlee et al 2015).

Yet if social media doesn't make a difference for protesting, why do some regimes spend so many resources managing, censoring, and co-opting them (Wang 2009)? More interestingly, why do some regimes seem to do this much more aggressively

than others (Diebert et al 2008, 2010, 2011)?

This project engages the unique and dynamic relationship between a non-democratic regime and its domestic opposition actors, while bringing the particular political effects of social media into the picture. At heart is an examination of how and why protest cascades, or mass protest against a regime that spreads across space or time, form and develop. These high-risk events impose costs on both the regimes they target and the opposition groups they involve (Hardin 1990). They are also rare (Svolik 2009), difficult to predict (Kuran 1991), and not fully understood (Hale 2013).

This project consists of three related papers that complete an overarching argument about protest and social media in non-democracies. In the first paper, I assert that social media should have differential effects in non-democracies and democracies, because they reduce the costs of protesting that are higher in non-democracies to begin with. Properties of social media that tend to reduce effective activism, namely high-quality entertainment and substituted "cheap activism," should moreover hit hardest in democracies. This means that the Internet should help both organizations and individuals in non-democracies overcome collective action and coordination problems to protesting, even while it is not expected to do so for democracies. I show over a sample of fifty countries that increased Internet use results greater protest, both organized by groups and spontaneously among individuals, but only in non-democracies.

These results hold over a sample deliberately chosen for its relative lack of censorship, however. Regime interference with social media should presumably pervert at least some of its mobilizing potential, as that is at least partly the point (King et al 2013). The second paper addresses the regime response to social media directly, while also answering the puzzle raised by the first paper of why, if social media are indeed related to protest, any non-democracy would neglect to censor it.

This second paper presents my model of cascade development. Key variables for

how (and whether) a cascade happens are geographical and societal barriers that make it harder for protest to spread spatially, and the presence of an opposition frontrunner who will be uniquely incentivized to pursue cascades over other forms of protest. This means that even holding levels of discontent equal, some regimes simply face greater risk of a costly protest cascade than others.

Since cascades thrive off free information flows, regimes respond to their cascade risk, which also includes the more dynamic and less-known component of discontent, with information control. Applied to traditional media, this simply looks like public or private censorship, but in controlling social media, regimes that use private censorship to accomodate their externalized competitive institutions must use a more subtle form of control I call "skew." Social media also create a problem for regimes with geographic cascade barriers because they decrease the effect of those barriers.

To test the predictions arising from this model, several measures of regime Internet control were created. The extent of control was estimated using a Bayesian measurement model on hand-coded data available from media advocacy groups, while the type of control was assigned based on a family-resemblance model imposed on five binary policy indicators. Quantitative analyses support several contentions arising from the cascade model: first, how much control an autocrat pursues is well-predicted by their pre-existing cascade risk, given by measurable geographic, societal, and strategic factors; and second, the type of social media control an autocrat employs is determined almost entirely by the nature of their competitive institutions.

This model of cascade development also maintains that while cascades are powerful for generating leverage relative to the regime, they are also highly risky for organizations to initiate or join because of their uncertainty of outcome. That uncertainty is substantially reduced, however, when a clear opposition frontrunner exists. This model thus implies that during key focal events, such as national elections, whether a frontrunner exists should have a powerful effect on whether a cascade is attempted.

The third paper in this series addresses this angle. Empirical analysis strongly supports the model's prediction, even to the point of suggesting that the association between elections and protest previously seen in the literature on protest in non-democracies is in fact a function of frontrunners. When controlling for whether a frontrunner is present, holding a national election of any type is found to have no independent effect on whether a mass protest is held. However, national elections have their own indirect effect in that they facilitate the emergence, and the shared awareness, of a frontrunner.

The strategic importance of a frontrunner for an incumbent's protest conditions and risks, affirmed by this third paper, suggest several other implications for future research. Since frontrunners are found in separate analyses to have such a strong effect, incumbents should regularly engage in behavioral incentives to discourage their emergence. Incumbents should also have predictable policies regarding non-frontrunning groups depending on how invested they are in a stable political system, as invested groups will have more to lose from cascades than relatively uninvested groups. Conversely, opposition groups are expected to behave according to their levels of investment, and whether any can unambiguously claim to be a frontrunner.

These three papers shed light on several questions relating to domestic politics in non-democracies, particularly on how analysts can anticipate those politics might evolve in the future. The societal and geographic factors that play a strong role in cascade creation change slowly, but in the face of environmental catastrophes or mass migration could result in substantially altered risk structures for incumbents - and corresponding increases or decreases in the levels of information control. The trend of autocrats adopting semi-competitive elections, if it continues, should demonstrate a shift towards private, "skewing" censorship - but not necessarily a decrease in its extensiveness. And the fact that it is having a frontrunner, not an election itself, that contributes to mass protest suggests that regimes will find new creative solutions for

capturing the benefits of elections, while avoiding the attending side effect of helping a frontrunner emerge.

Understanding the domestic politics of non-democracies, particularly the formally antagonistic (but often quite cooperative) relationship between the incumbents and the opposition, will continue to be an important challenge through the twenty-first century. Sadly, we are not likely to see a democratic future even with the advent of protest-empowering social media. This project's work on regime control of that media demonstrates that regimes are hardly (or at least no longer) being caught unaware. While even controlled social media may increase dictators' susceptibility to costly, even pivotal, protest cascades, the outcomes of almost all of the cases described above shows us that this is clearly not sufficient for a stable democratic future.

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Net Gain? Social Media and Citizen Activism in Non-Democracies

Jana Marie Bridwell

Abstract

Do social media create protest? Consistent evidence that social media leads to more mobilization has been elusive, but if an effect is lacking, how do we explain the costly efforts of authoritarians to censor it - especially any aspect that facilitates collective action? I provide evidence that Internet use does, in fact, promote citizen activism in the form of anti-regime protest. Social media facilitate mobilization because they reduce regime-erected barriers to collective action - which means effects are only to be expected where those barriers exist. Thus the behavior of online citizens in democracies largely resembles their pre-Internet behavior, even as similar Internet use leads to pronounced and dramatic increases in protest in non-democracies.

Introduction

In the past ten years, every time a government has come under pressure from popular protest the possible role played by social media has come up. Experts and observers have variously extolled its virtues for citizen empowerment (Robbels 2001, Kruegar 2002, Benkler 2006, Kasajoo 2006, Lin and Atkin 2007, Shirky 2011), denied that social media make as much difference as is claimed (Kalathil and Boas 2003, O'Harrow 2005, Morozov 2011), and accused Western observers of reading triumphalism into

the local politics of foreign countries (Rich 2011). While detailed accounts of specific protests, such as those of the Arab Spring, inevitably mention the use of websites and cell phones, it is unclear how enabling this technology actually is (or isnt) for protesters.

Early enthusiasm about Internet-enabled citizen activism and empowerment has largely been disappointed. While it is intuitive that any tool which facilitates political mobilizing has empowering properties for citizens relative to their regimes, the egalitarian online utopia empowering disenfranchised citizens has failed to materialize (Schlozman et al 2010, 2012). When citizens do coordinate online, we evidence shows the result is often slacktivism low-cost, high-publicity campaigns such as Kony 2012 that have little real impact and may actually divert real political action into useless channels (Morozov 2011). Meanwhile cell phone and Internet use has skyrocketed around the world alongside politics as usual in most countries.

However anecdotes of webfueled protests persist, and some research finds that social media do improve the collective action potential for citizens against a government.[1] Moreover, if social media do not, in fact, have a strong link with citizen activism, then why do authoritarian regimes often invest so heavily in censoring it - especially any aspect that can facilitate collective action (King et al 2013)?

This paper asserts that the puzzle lies in the differing costs to political action in democracies versus non-democracies: the mobilizational effects of social media are conditioned by political context. Social media facilitate protest by reducing regime-erected barriers to collective action, so effects are only expected where those barriers exist. Social media reduce the peculiar disadvantages that individuals and non-regime groups face in non-democracies, but which are less or absent in democracies. In a democracy, the particular advantages of social media are more redundant, even if its tools offer improvements for mobilizers. Moreover, the negative qualities of social

[1] Pierskalla and Hollenbach (2013) provide an excellent recent example.

media cited by skeptics are more likely to hold in a democratic context. Social media should have a differential effect on protest depending on the nature of the political regime.

This paper offers a systematic test of this relationship using data on mobilization in Africa. I find that Internet use is consistently associated with greater mobilization in non-democracies, but not in democracies. Interestingly, this effect is not present for cell phone use, suggesting that the two types of media play different roles for protest. The effects are robust across several different model specifications, and provide empirical validation of enthusiasm about social media in non-democracies - but also validating skepticism elsewhere.

This paper is organized into five sections. The first two sections analyze relevant literature on political behavior and social media, respectively, providing the foundation for my argument and implications in the third section. The fourth section presents the data, models, and results, and discusses potential critiques. The fifth section concludes with a view to policy implications and areas of future research.

Mobilization and Citizen Empowerment

Claims about citizen empowerment are best understood within the context of the behavioral literature on mobilization. Mobilization, defined as activities by which individuals and groups induce other people to participate in order to influence politics, is the chief means by which citizens assert leverage relative to their governments.[2] Leverage refers to citizens' ability to induce incumbents to be accountable or responsive to concerns. This operates by creating an undesirable situation, what McAdam (1982) calls a 'negative inducement,' to motivate incumbents to act.

In a democracy, mobilization takes a variety of forms: citizens may become involved in political campaigns, letter-writing to the legislature, demonstrations, or

[2]This definition is adapted from Rosenstone and Hansen 1993, 25-30.

voting. Successful social movements may result in the replacement of elected officers with more sympathetic representatives (Kalyvas 2000). The negative inducement entailed by letter-writing campaigns, canvassing for a cause, and volunteering is the threat of the vote: the risk of institutional replacement at the next election.

When democratic institutions are weak, absent, or lack credibility, the power of the vote is drastically curtailed, and the risk of institutional replacement, low. Mobilizing activities relying implicitly or explicitly on the vote are not likely to have an effect. Demonstrations, or peaceful, public political events involving a large number of people, are effective through a different mechanism. This is the direct imposition of a situation which the regime finds inconvenient - disruption of business, markets, and order; expenditure on security forces; negative press - while the threat entailed is protest continuation.

Demonstrations are particularly important for the study of citizen empowerment in non-democracies because, as McAdam (1982, 30) emphasizes, they are viable and can be effective even when the participants have few resources and no institutional access to the regime. This will usually be the case in a non-democracy: for excluded groups or ordinary citizens with few resources, publicly demonstrating is one of the only means available to impose some accountability on officials. Though lacking access to resources or the power of the vote, groups and individuals are empowered through public mobilization - they can punish incumbents, and may succeed in winning concessions.

Barriers to Mobilization

Holding a demonstration, whether organized or spontaneously, is a fairly difficult undertaking in any political context. As Olson's seminal (1965) work on political behavior shows, collective action for any large group of people will be difficult even in the presence of shared gains from co-operation. Studies of political participation

have moreover established that although costly, political participation generally offers little individual benefit - meaning that non-participation (free-riding) is the rational norm we should expect of citizens (Downs 1957, Aldrich 1993).

Analysts of political behavior have identified variable structures of political opportunity to explain under what conditions citizens are able to overcome the barriers to collective action (see Tarrow 1983, 1989, 1998; Kitschelt 1989; Kriesi 1995; McAdam et al 1996; McAdam et al 2001). Felicitous dimensions of political opportunity, when available, facilitate mobilizing and thus citizen empowerment.

Assessing key dimensions of political opportunity indicates that mobilization will be substantially more difficult in non-democracies. The standard rational-choice calculation proposed by Downs is more grim in non-democracies, where rights of expression are not well-protected. The costs of participation include not only time and effort, but also the risk of present and future reprisals. Dimensions of political opportunity are moreover unlikely to be conducive to mobilization. Access to sources of power is limited in regimes lacking democratic institutions; elite divisions offer some opportunity (Przeworski 1991), but quarrelsome factions may prefer one another to the risk of inviting non-regime elements into power. Influential allies will be harder to find, and free information flow more curtailed than in a democracy. Since the expected benefit of activism includes an estimate of how likely the demonstration will produce benefits, a widespread impression of powerlessness created by lack of access to the regime can alone be sufficient to induce passivity (Schattschneider 1960, Gaventa 1982; see also Hibbing and Theiss-Morse 2005, Polletta and Jasper 2001).[3]

For all these reasons, organizations and individuals seeking to mobilize for the purposes of forcing accountability on incumbents face much higher barriers to mobilization in non-democracies. While activism is costly in any context, it is much more

[3]Indeed, although McAdam (1982) argues for the potential power and leverage of any group of co-operating citizens, he concludes that expectations of failure will cause most attempts to be stillborn.

so in a non-democracy.

The Political Relevance of Social Media

The possibility that cell phones and the Internet will empower citizens relative to their regimes has long been embraced by the cyber-utopians, counting among their number U.S. Secretary of State Hillary Clinton. Their optimism centers around the conviction that Internet-empowered citizens have greater organizing potential: "The freedom to connect is like the freedom of assembly, only in cyberspace. It allows individuals to get online, come together, and hopefully co-operate."[4] These remarks summarize claims arising from mass protests like those in the Philippines, 2001; Spain, 2004; Moldova, 2009; and most recently, North Africa, 2010-2011. In each case, observers highlighted the role of cell phones and the Internet as integral to coordinating the demonstrations that forced accountability on government officials.

Those who argue for a positive effect credit a number of different traits for this potential, which benefit both organizations seeking to mobilize citizens, and ordinary citizens themselves. First and most importantly, social media promote decentralized content production, meaning that publishing content for public consumption is extraordinarily cheap (Benkler 2006, Etling et al 2010). Traditional media such as newspaper, radio, and television depend on centralized content production; the substantial resources required to produce mass content entail higher barriers to entry for outsiders seeking to publish. Using social media, however, organizations lacking resources can cheaply set up a shop window for their cause. Similarly, isolated individuals can easily publish their own content, creating new avenues to grass-roots coordination (Goldstein and Rotich 2008, Shirky 2008).

Second, the potential audience accessible to an organization or an individual through social media is greatly magnified. With the exception of recent satellite-

[4]Clinton 2010. The full transcript of this speech is available at the State Departments website, `http://www.state.gov/secretary/rm/2010/01/135519.htm`

based television and radio stations, the geographical reach of traditional media is physically limited. Content hosted online, however, can be accessed anywhere in the world (Rogers and Shukla 2001). An organization whose newsletter has a readership of a few hundred can, simply by shifting that newsletter online, quickly magnify their audience to thousands. Organizations can moreover easily network across international borders (Ayers 1999). Geographical reach also permits spontaneous connections between random strangers on opposite sides of a region or country who would otherwise have been unlikely to coordinate.

Third, using social media greatly shortens the time delay between an event and its public reaction, allowing immediacy. This promotes quick coordination in moments of intense (but brief) public outcry. Mobilizing emotion has long been an important part of the literature on framing (Benford and Snow 2000), and Valentino et al's (2011) study of election night violence confirms the importance of using emotion to mobilize otherwise passive citizens. Immediacy allows organizations to capitalize on focal points like national scandals or stolen elections while public anger is at its peak (see Tucker 2007), and allows individuals to spontaneously coordinate with one another with very little prior planning.

Skepticism About Social Media

Skeptics of the empowering potential of social media have raised concerns about the supposed political advantages of social media, some suggesting that it may even decrease political participation and, by extension, citizens' ability to hold their governments accountable.

First, social media are better adapted to entertainment and distraction than to sustained and thought-provoking political discussion (Bannerjee 2006). While some citizens take a few seconds from their day to post about the latest scandal of a corrupt ruling party, most of their friends may spend their online time at dating websites or

playing games (Sreberny and Khiabany 2010). Andersen's (2006) study illustrates this: though hoping to find evidence of increased political consciousness and activity among young Chinese Internet users, the researchers admitted with disappointment that their sample respondents used the Internet almost entirely in pursuit of entertainment. Observers of Russian politics suspect that state appreciation of this has developed into a conscious strategy, where the public is de-politicized by the exciting new diversions of social media (Alexander 2004, Troianovsky 2008, Morozov 2011). If social media's entertainment value has a distracting effect from politics, it may lead to less political activism, not more.

Second, the same qualities of social media that lower the costs of demonstrating also encourage slacktivism, extremely low-impact participation that nevertheless retains the social benefits of activism. A classic example is the formation of and membership in non-committal groupings that require no real-world action. Hassanpour's (2011) study of the Egyptian protests supports this view, finding that many prefer armchair politics to actually participating in events themselves.[5] Social media offer even politicized citizens greater potential than ever before not to get involved - one can follow everything perfectly from the comfort, privacy, and safety of one's own home.

Finally and most simply, those aspects of the Internet which benefit democracy's activists may be censored (Ang 2006; Bannerjee 2006; Chowdury 2008; Deibert et al 2008, 2010, 2011). Even supposing the mobilizational advantages of social media apply, regimes may be able to pre-empt their use by closing access (King et al 2013). Chilling effects also apply: citizens who perceive that their behavior is monitored can be dissuaded from activism (Deibert et al 2008), and an undeniable effect of the Internet has been to greatly increase the potential for state surveillance (OHarrow

[5]Foreshadowing this argument, several observers commented at the time of the protests that many activists seemed to prefer to express their frustrations with the regime online; when access to the Internet was cut it forced them outside. For an article on this point, see `http://www.nytimes.com/2011/01/29/technology/internet/29cutoff.html`

2005).

The Context-Dependency of Social Media's Effects

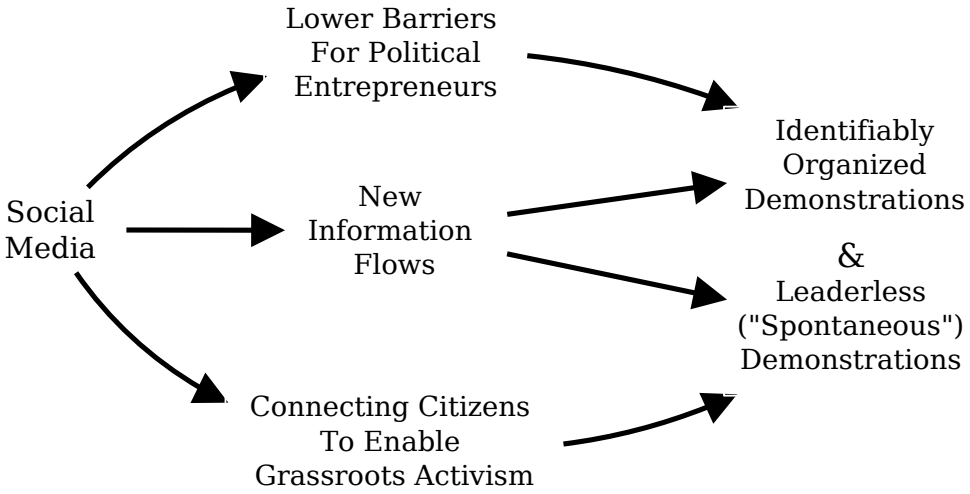
While the good or bad effects of social media have been presented as competing explanations, these contending arguments are not necessarily at cross-purposes. I argue that each of these effects is valid, but context-dependent. The positive effects discussed, which primarily operate to lower barriers to mobilization, are likely to make a difference only in non-democracies, where those barriers are high. On the other hand, the negative effects apply more to democracies. This means greater social media use should have a differential effect on political mobilization, depending on the political regime in place.

As noted above, information flows and the availability of media tools comprise a key dimension of political opportunity for mobilizing, although this tends to be more implicit than explicit in studies of democracies.[6] In a non-democracy, any opening in the information environment can potentially make a powerful difference to mobilization efforts. The availability of independent media has been cited as an important ally for mobilizing in El Salvador (Prendes 1983), the Philippines (Schock 1999), and the former USSR (Dizard and Swensrud 1987). In cases where the government was able to control or shut down critical media outlets, such as Burma in 1989, mobilizing potential quickly collapsed (Schock 1999).

Non-regime organizations, particularly those critical of the regime, almost always have very poor media access in non-democracies (see Figure 1). In such a context, introducing a tool that creates new access has a powerful effect. In democracies, non-regime organizations already enjoy media access - they are welcome to purchase time on television or radio stations, or space in a print publication; organizations are also welcome to launch their own publishing organizations if they possess the capacity.

[6]Information flow is generally more prominently highlighted as an important variable dimension of political opportunity in studies of non-democracies. See, e.g., Kuran 1991.

Figure 1: Mechanism by which Social Media Enables Protest in Non-Democracies



Resources remain a limiting factor, so introducing a cheaper media tool improves their potential audience, but opportunities to access the public exist without social media. In the same way, introducing technology that permits access to a large, geographically dispersed audience also makes a more substantial difference in non-democracies than in democracies. While access to a wider public can be beneficial for organizations in democracies, this aspect of social media is particularly important for organizations stymied by regime media control.

The third major benefit of social media, immediacy, allows citizens to coordinate with one another before the regime can mount counter-mobilization measures and pre-emptive repression to prevent or deter citizens from congregating. Immediacy also facilitates the creation of a cascade like that described by Granovetter (1968) and formalized by Kuran (1997) because citizens are able to quickly and cheaply signal changed public allegiances to one other. While potentially also useful for citizens in democracies, this particular benefit will be of much greater relevance for individuals without expressive rights. As the potential costs of demonstrating are higher in non-democracies and it is more critical to have strength in numbers, this quality of social media has much greater potential to change participation calcula in that context.

Decentralized broadcasting, greater audience access, and immediacy each operate to lower barriers to mobilization; logically, we can expect that these effects are most powerful in a context of high barriers.

Conversely, I argue that with the exception of censorship and regime interference, the negative qualities of social media are most relevant to users in democracies. First, diversion can provide compensation for political or generalized discontent, but that compensation is limited. Diversion is appealing but less essential to human existence than the basic need of security. Good entertainment is less likely to inspire complacency in users denied security from arbitrary persecution, equal protection under the law, or basic rights of expression. I argue that citizens who enjoy greater security and protected rights are more likely to be sated by entertainment.

Second, slacktivism is most attractive for users who (a) anticipate social benefits for their signaling, and who (b) do not personally suffer from the problem for which they cheaply crusade. As participation in causes and movements can produce social rewards (Schlozman, Verba and Brady 1995, Wickham 2002), slacktivists are incentivized to demonstrate enough political awareness and interest to collect the social benefits of participation, but not enough to expend the energy required to actually participate. Their activity depends upon at least a basic protection of free expression, as slacktivists are certainly not willing to assume the costs implied by the risk of harassment, arrest, or persecution for the sake of their causes. These politically-interested but largely content users may be found in all regimes, but I argue that the phenomenon of slacktivism should prevail especially in regimes with institutions protecting citizens' rights of expression, offering ways for citizens to punish incumbents, and maintaining stability through changes in government - i.e., democracies.

Unlike the first two, the final negative quality - that social media can be controlled and censored to pre-empt advantages from accruing to opposition forces - naturally poses the greatest danger in non-democracies. Political censorship of social media is

an increasing reality among these regimes, as is monitoring (Deibert et al 2010, 2011). While democracies also engage in some censorship, the risk will almost certainly be greatest in non-democracies. However in the absence of censorship and regime control of social media, the increasing use of social media should produce only net benefits to mobilization effort in non-democracies.

This logic suggests that the positive and negative qualities of social media apply differently depending on whether the regime is a democracy, or a non-democracy. To expand this logic, we should expect a more positive effect of social media on increased mobilization in non-democracies; in fact, given that any positive effects are accompanied by negative effects, it is unclear whether social media will have a positive effect on mobilization at all in democracies.

Implications

To incorporate the literature on mobilization reviewed above, in a non-democracy protest demonstrations are the chief and possibly only means for citizens to gain some power relative to the government.[7] If social media do indeed empower citizens to mobilize, it should do so by facilitating demonstrations through which they can leverage change. Also, if the effects of social media are real, they should apply to facilitating demonstrations for any cause, including those that are not targeted at forcing regime accountability. In brief, I expect that increased use of social media will lead to greater mobilization, via demonstrations, in non-democracies.

The means by which social media do this should take place through one of two different mechanisms. As noted above, the qualities of social media impact two types of actors seeking to coordinate and mobilize: organizations and individual citizens. The mobilization process undertaken by these two types of actors differs, but my argument expects that in both cases social media offer unique benefits previously

[7]Open violence is another means, but it is even costlier than protesting.

unavailable in a traditional media environment. This means I expect a greater incidence of both group-organized demonstrations, planned ahead of time for specific causes, and of more 'spontaneous' demonstrations that happen quickly by previously disconnected individuals in the wake of public outcry.

This expectation does not hold for democracies, however. There is less of a clear reason why social media should have a positive instead of a negative effect on mobilization in democracies, and even if a positive effect holds it may not manifest in a greater number of demonstrations. Citizens in democracies have a number of different mobilizing tools at their disposal, all of which social media may facilitate. Compared to other forms of participation through which citizens can make governments accountable (e.g. signing a petition, writing one's representative, voting), protesting and demonstrations are somewhat costly. That social media also make it easier to join petitions and letter-writing drives, often while maximizing the public social benefit derived from public participation, means that its expected effect on demonstration incidence specifically is ambiguous at best.

This argument produces two testable hypotheses regarding the effect of social media on organizational and individual empowerment (shown in Figure 1):

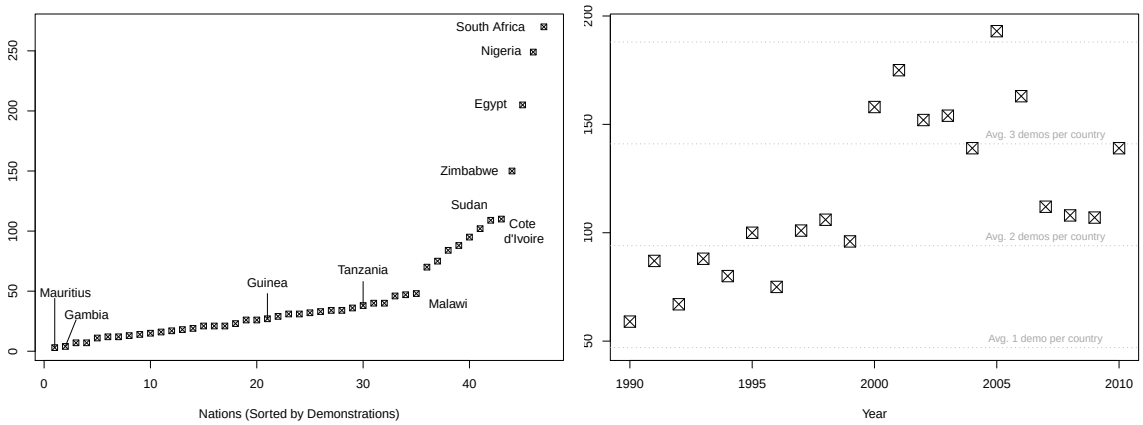
H1. Social media use should be associated with a higher number of organized demonstrations, but only in non-democracies.

H2. Social media use should be associated with a higher number of spontaneous demonstrations, but only in non-democracies.

Empirical Analysis

To empirically assess these hypotheses, I employ data from a nineteen-year panel of forty-five African nations, listed in the Appendix. Africa offers an excellent opportunity to conduct this study for several reasons. Most importantly, this sample

Figure 2: Distribution of Demonsrations by Country (left) and Year (right)



demonstrates very little social media censorship. Censorship could stymie any positive mobilizing effect of the technology, as it is intended to do, which would interfere with the proposed relationship. This test aims to assess the stand-alone mobilizing potential of social media (if any) in a non-democracy, independently of any regime interference. African autocrats have tended to lag far behind their non-African counterparts in social media censorship, allowing for a much clearer analysis of social media's effects and rendering African non-democracies more comparable to African democracies for the purposes of the analysis.[8]

African nations moreover exhibit high variation on the key independent variable (social media use) and the key dependent variable (protest activity), both cross-nationally and over time, which permits inferential leverage regarding the relationship of those variables (see Figure 2). Disaggregated country-year data is available for almost all African nations through the Social Conflict in Africa Database (SCAD), the International Telecommunications Union (ITU), and the World Bank.

[8]This lag has been noted by a number of Internet freedom observers. In particular, Deibert, Palfrey, Rohozinski and Zittrain's exhaustive (2010) examination of Internet censorship around the world only includes two African nations, Egypt and Tunisia. Of these two only Tunisia demonstrated evidence of filtering (see 2010, 581), and this almost exclusively from 2008 forward.

Data

This study employs two different dependent variables, organized demonstrations and spontaneous demonstrations. Each variable is a count of the number of demonstrations that took place in a given country and year.[9] This count is measured by SCAD researchers, who code a demonstration as distinct, continuous, and largely peaceful activity (Saleyhan et al 2012). These events are further sub-coded as organized if a clear leader or organization can be identified as leading the demonstrations, such as the Gambian Bar Association's 2004 protests over government meddling in judicial affairs. Spontaneous demonstrations, on the other hand, lack such identifiable leadership, an example being the leaderless protests that occurred in the Gambia three years later over reports of police bruality. Figure 2 shows how this count varies dramatically over space and time.

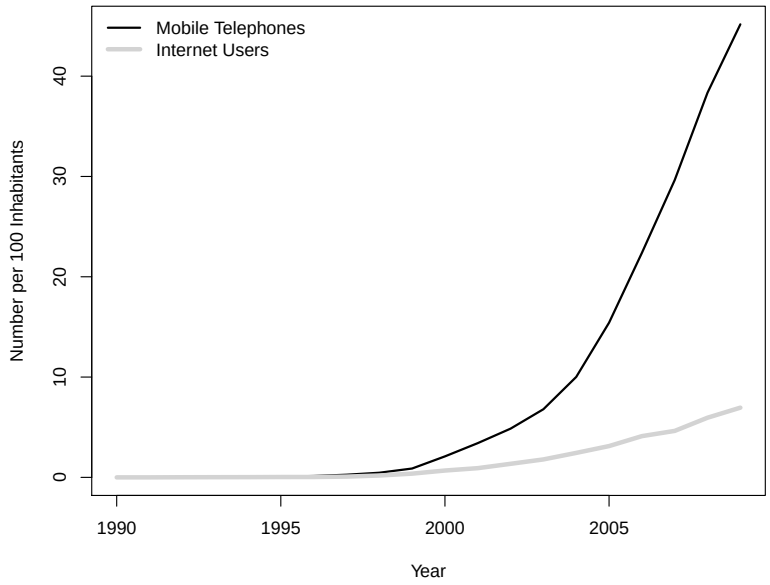
The independent variable, social media use, is drawn from two indicators available from the ITU: mobile phone subscriptions per capita, and Internet users per capita. Measuring social media use per capita, as opposed to absolute levels, better approximates the concept of social media diffusion among the population, and is moreover comparable across differently-sized nations.[10] Figure 3 shows how both of these have increased over time.

Since the theory posits that the effect of social media is conditional upon the structure of the regime, each of these indicators is interacted with a dummy variable for whether or not the country in question is a democracy. I take this data from Cheibub et al's (2009) Dictatorship-Democracy data-set. As an institutional measure, the DD dichotomous indicator best captures the essential logic of the theory, that social media reduce barriers to collective action that are absent in regimes with free

[9] As the relevant variables change over time and across countries, the natural unit of analysis for this study is a country-year.

[10] The number of stable Internet subscriptions per capita is also available, but there is very little variation on this variable even in the most recent five years.

Figure 3: Social Media Diffusion Over Time (Sample Averages)



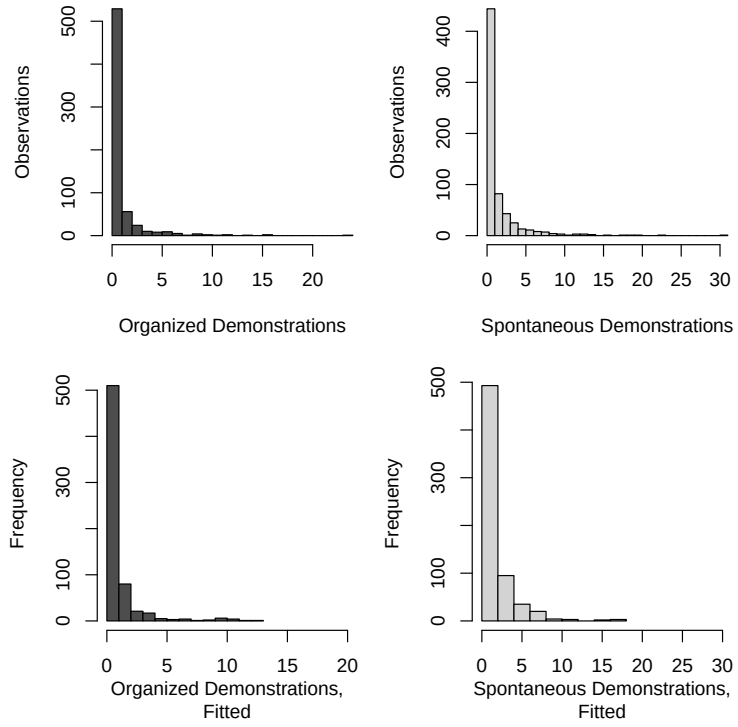
elections and multiple legal political parties.

To maximize my ability to clearly assess the relationship between these independent variables and dependent variables, I utilize a highly parsimonious modeling strategy. While protest activity has been shown to depend on several variables (Bratton and van de Walle 1992 and Lindberg 2006 offer enlightening analyses of protest specifically in Africa), I include only potentially confounding variables that could threaten inference (Clarke 2006).[11] This allows maximum leverage over necessarily finite data, while keeping the results as clear as possible.

I control for three variables which could present the confounding 'phantom menace': economic growth, which could increase social media but reduce demonstrations; wealth, which increases social media and may encourage dissent towards the regime (Magaloni 2006); and urbanization, which is plausibly associated with increases in both the independent and dependent variables. Indicators are taken from the World Bank (2012) World Development Indicators, specifically the percent annual change

[11]I note that choosing this empirical strategy means diagnostics of how well the model predicts y, such as R^2, will be less appropriate here than those focused on examining the strength of the hypothesized relationship.

Figure 4: Actual Demonstration (top) and Predicted Demonstrations (bottom)



in gross domestic product (GDP), the log of GDP, and percentage of the population living in cities over one million inhabitants.[12]

Model

The hypotheses are tested using multilevel Poisson event-count models with two interactions and crossed random effects. Since the two dependent variables are both highly right-skewed event counts (Figure 4 top); I model each separately as a Poisson distribution, the rate parameter of which is predicted by my independent variables and controls such that

$$Demonstrations \sim Poisson(e^{x\beta})$$

[12]I also included a control for inflation (the change in prices as an annual percentage) in several additional models with highly similar results; however, the extreme skewness of this variable prevented me from including it in the model presented here.

I include interactions in each model to accommodate my expectation that social media will have differential effects on demonstrations in a given country-year depending on whether that country is democratic. Including both indicators for social media use:

$$x\beta = \beta_0 + \beta_1 mobiles + \beta_2 Internet + \beta_3 democracy + \beta_4 mobiles * democracy + \beta_5 Internet * democracy + \beta_{6-8} Controls$$

My sample includes a diverse set of nations with remarkably different levels of demonstrations, and some years in the sample exhibit vastly more mobilizing activity than others (see Figure 2). Such unit heterogeneity may be managed through fixed or random effects, but as the panel is also unbalanced due to some missingness there are particular advantages to a multilevel model.[13] This type of model allows for crossed random effects that accommodate country- and year-heterogeneity, while lending strength to those groups that have fewer observations. The specification maintains that any effect of the independent variables is the same across all countries of the same regime type.

Results

Table 1 reports the coefficients and standard errors estimated by the two multilevel models; as the interactions make immediate interpretation of coefficient signs more obscure, Table 2 reports the predicted effect (whether positive or negative) for each combination of regime type, demonstration type, and social media type (non-significant effects are shown in lighter grey). The largest highly significant effect is that of Internet use in non-democracies, which is consistently associated with more demonstrations. Remarkably, the use of mobile phones does not have any such positive effect, but is estimated to have a very small negative effect on the number of

[13]Nations are represented in the sample on average 15 out of the 19 years; some have only 9 years of data (less than half of the panel).

Table 1: Multilevel Model Coefficients

	Organized Demonstrations	Spontaneous Demonstrations
Mobile Phones *(per capita)*	-0.015 (0.004) ***	-0.012 (0.003) ***
Internet Users *(per capita)*	0.106 (0.017) ***	0.063 (0.014) ***
Democracy *(dichotomous)*	0.615 (0.199) **	0.387 (0.146) **
Mobiles * Democracy	0.004 (0.017)	-0.016 (0.014)
Net Users * Democracy	-0.180 (0.072) *	-0.030 (0.048)
Controls:		
GDP Growth	-0.025 (0.009) **	-0.019 (0.007) **
log(GDP pc)	0.466 (0.197) *	0.076 (0.205)
Urban Population	-0.021 (0.011)	-0.003 (0.012)
Constant	-3.393 (1.237) **	-0.713 (1.302)

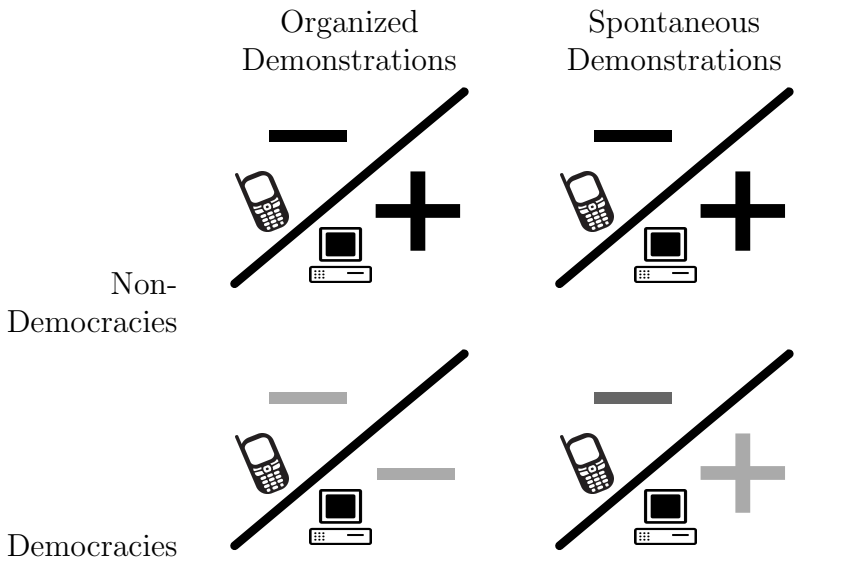
N = 655 Asterisks denote significance at 95% (*), 99% (**), and 99.9% (***) confidence.

demonstrations in both regime types. As expected, social media in general does not have a consistent or significant association with demonstrations in democracies, whether they be organized or spontaneous.

The effects predicted by increased Internet use seem substantively small, but are dramatic relative to pre-Internet demonstration counts (see Figure 5). The effect of 10% more Internet use in a non-democracy is predicted to yield to almost twice as many spontaneous demonstrations (a 187.8% increase), and almost three times as many organized events (a 287.5% increase). Each effect is significant at the level of 99% confidence, offering very strong confirmation of both hypotheses. Meanwhile, the effect of a 10% increase in Internet use has only an ambiguous effect in democracies; the models predict a 139% increase in spontaneous demonstrations but only 47.6% as many organized demonstrations. Neither effect achieves statistical significance even at the level of 90% confidence.

Cell phones are predicted by the model to have a negative, but substantively negligible, impact on the number of demonstrations. As shown in Figure 5, the esti-

Table 2: Effect of Social Media on Demonstrations, By Regime

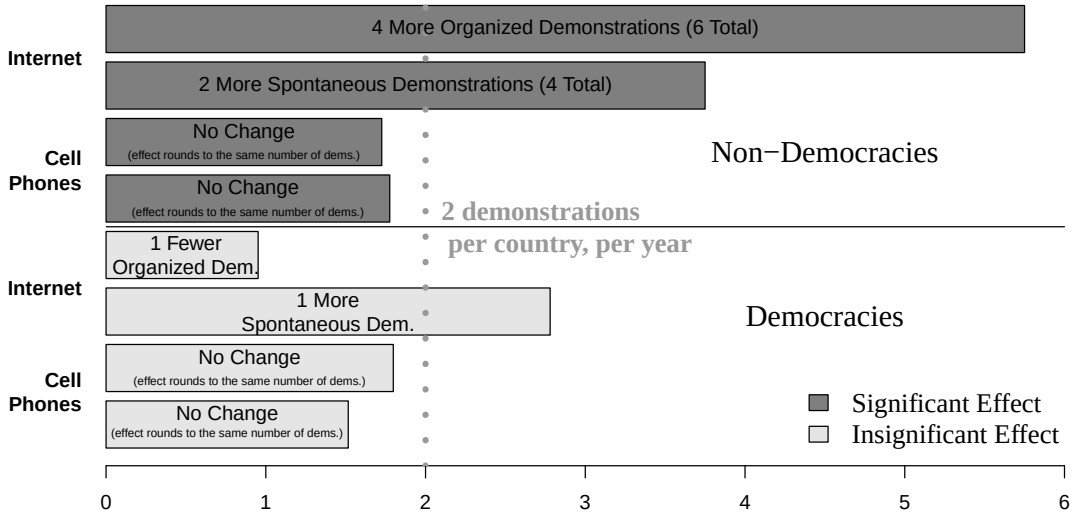


Effects are significant at 99% confidence (black), 90% confidence (dark grey), or not significant (light grey).

mated impact of a 10% increase in cell phone use would round to the same number of demonstrations in any given country and year. The association between cell phones and demonstrations in non-democracies is significant at 99% confidence, if slight: a 10% increase in mobile phone use is associated with 86.3% and 88.8% as many organized and spontaneous demonstrations, respectively. In democracies, a 10% increase in mobile phone use generates 89.9% as many organized and 75.8% as many spontaneous demonstrations. The latter effect is significant at the 90% level, while the former is not significant.

To assess the substantive significance of these relationships, I calculated the predicted distribution of demonstrations in a given regime, conditional upon how much social media use is present. The four most representative of the eight potential combinations are depicted in Figure 6 (the four omitted are highly similar). Each graph models the predicted distribution of demonstrations given four varying levels of social media use; all other variables are held constant at sample means (or, in the case of

Figure 5: Predicted Effect of a 10% Increase in Social Media



logged GDP per capita, the sample median). The peaks of highest density in each curve indicate the maximum-likelihood estimate of how many demonstrations will occur in a given year; over a period of time, the annual frequency of demonstrations is expected to follow the distribution shown.

The varying levels of social media use shown within each plot depict maximum variation (from no use at all to the maximum use in the sample) and reasonable tendencies (the 2008 average of social media use, plus an additional value). To make the graphs maximally comparable, they are all plotted over the same range.[14] When the four curves in a graph are highly similar, as with Internet use in democracies (top right) and cell phone use in non-democracies (bottom left), this indicates that even over maximum variation the model predicts only a slight change in demonstrations. When the curves show substantial differences, particularly a change in the peaks and thus the predicted number of demonstrations in a given year, this indicates a meaningful effect. As the bottom-right graph shows, a non-democracy with levels of Internet use below the sample average can expect much less protest activity than

[14]The density (y-axis) has been allowed to vary per graph, as this is relevant only within a given graph.

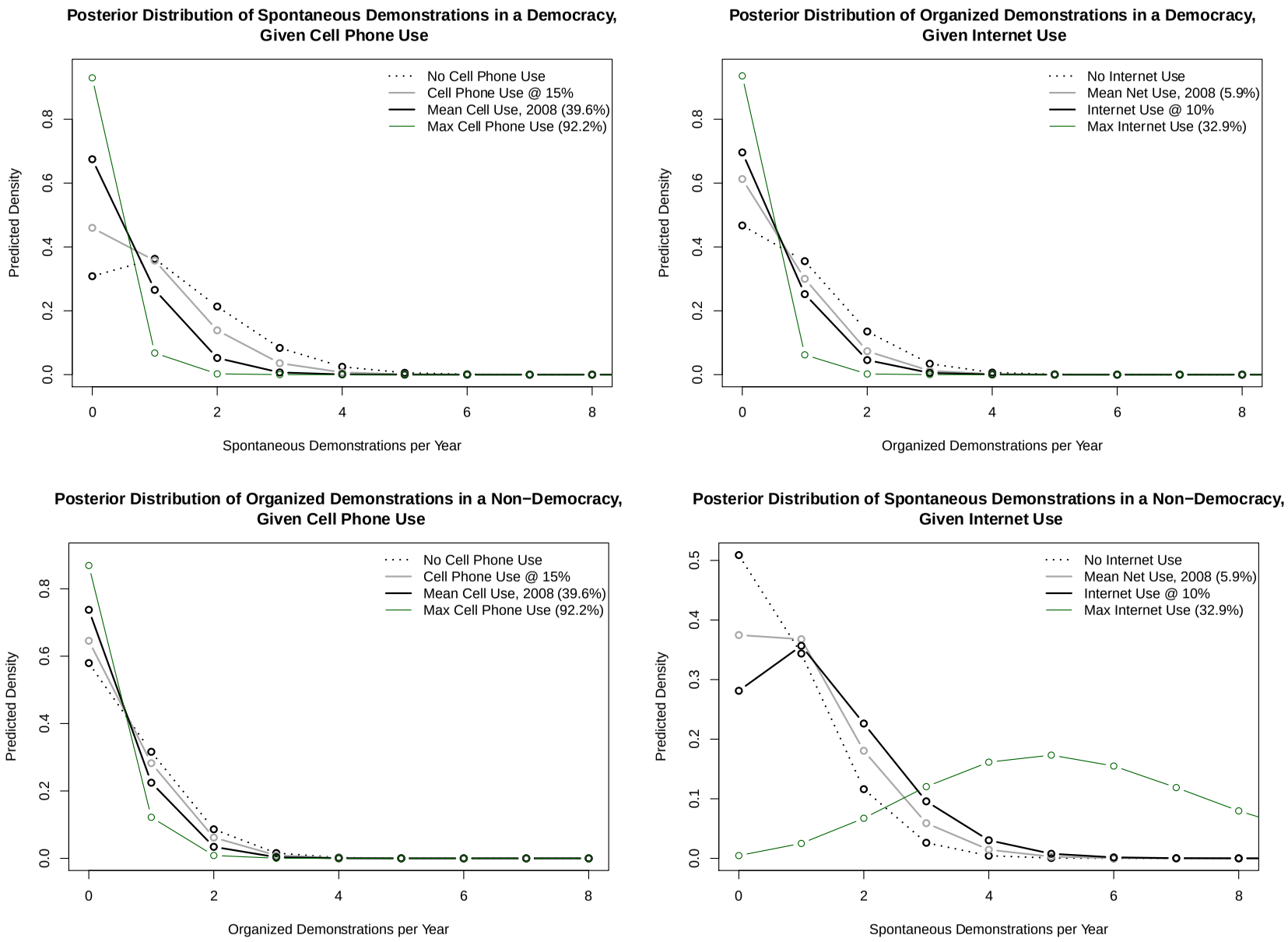


Figure 6: Expected Distributions of the Dependent Variables, Conditional on Social Media Use

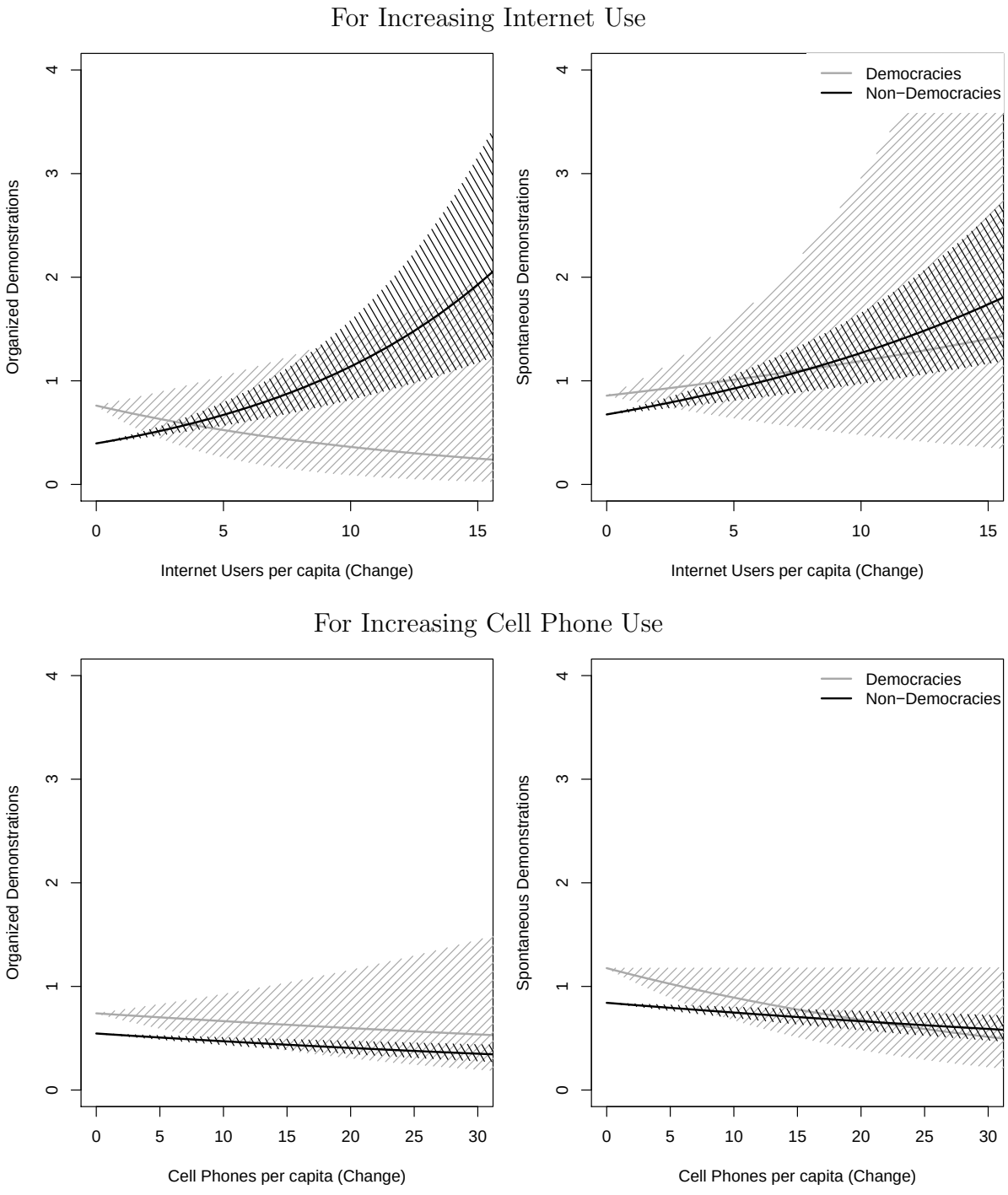
a similar regime with above-average Internet use.

A final set of graphs visually depicts these relationships in a manner that facilitates comparison between regimes, while also showing the high uncertainty around estimated effects in democracies. The four graphs in Figure 7 show the expected change in demonstrations as social media use increases. While the expected changes in demonstrations from a 30% increase in cell phone use are unimpressive, the predicted effects of a 15% increase in Internet use are pronounced. Over this range, the predicted number of demonstrations increases from about one per year, to three to four total per year. To a non-democratic incumbent these extra demonstrations are potentially a regime-threatening problem. SCAD codes even a week-long protest as a single event; one additional such event imposes huge costs on the regime and greatly increases the scope for citizens to hold regimes accountable. No consistent effect is predicted for democracies, which demonstrate such high uncertainty that we cannot infer that any social media has any effect on mobilization at all.

Diverging Predictions for Social Media Technologies

Although my argument predicted a divergence in effect among democracies and non-democracies, the similar divergence between mobile phone use and Internet use was not expected. However there are a number of plausible explanations for this difference. Generally speaking, the positive effects that form the foundation of my argument apply much better to Internet technology than cell phone technology. While the Internet offers genuinely many-to-many communication (Shirky 2011), cell phones are engineered primarily for one-to-one communication - or, one-to-several typically with additional costs for each additional audience member. This presents less opportunity for organizations seeking to take advantage of the decentralized nature of the Internet to communicate with a wide potential audience, in a low-cost way. Similarly, the type of content produced and broadcasted through cell phones is much more limited than

Figure 7: Expected Change in Demonstrations, Given Social Media Use



Shaded ranges indicate 95% confidence intervals.

that through the Internet. While organizers can send slogans by text message, a set of photographs can be more powerful.

Third, the Internet promotes communication between strangers, while communication over cell phones requires that individuals know each others' numbers, or at least have a friend in common. By using the Internet to broadcast, organizations do not have to have prior knowledge of a potential subscriber for them to receive content, and similarly-minded but unconnected individuals can spontaneously connect in geographically separate locations. Coupled with the potential of genuine many-to-many communication, this quality permits more of a virtual assembly than the one-to-one tendency of cell phones. Historically, non-democratic regimes have minded two citizens having a private discussion much less than private assemblies; assembly seems to have an additional property that creates the potential for something more dangerous than simply shared discontent.

An alternate possibility for the differential effect seen between these two technologies draws from the greater diffusion of mobile phones in Africa, and the possibility that the first users of social media technology are the most likely to put it to political use (Valente and Davis 1999). Suppose that the true effect of social media on political participation has a "Goldilocks" distribution ($\cap$): as the new technology is introduced, it is embraced by the most wealthy and the most politically active, and employed towards political ends. Mobilization therefore increases as Internet use increases, resulting in a clear correlation. As the technology diffuses beyond the elite to the broader population, relatively more users are interested in the non-political properties of the technology, and its effect on participation levels off, before its primary effect is to actually decrease participation among a high-use, highly distracted, and politically disinterested population. If this were true of cell phones as well, by 2008 increases in cell phone use would show this pattern, while Internet diffusion would still be in the heady early days of elite use.

I tested for this possibility using several truncated samples of the early days of mobile phone diffusion in Africa: 1990-2000, 1990-2002, 1990-2003, and 1990-2004. In no sample was I able to produce anything like the positive and highly significant effect of Internet use estimated using the full sample. Instead, each sample retained a slight and occasionally significant negative effect of mobile phones on demonstrations. It may yet be so that the positive effect seen by Internet use will ultimately taper off, but mobile phones do not seem to have ever had such an effect on participation.[15]

Critiques and Alternate Modeling Choices

I conclude the results section with a view to potential criticisms of the model and alternate modeling choices. The most important critique is that the data is overdispersed. Although the models' predicted demonstrations match the overall distribution of the dependent variables well (shown in Figure 4), their dependence on a Poisson shape with its requirement that the mean roughly equal the variance leads to inflexibility in modeling the event counts. In particular, the two models overpredict slightly for low values (fitting one demonstration to many observations that have none), and underpredict for very high values (fitting too few demonstrations to the nine observations that have fifteen or more). Although there are 402 country-years with no organized demonstrations and 318 with no spontaneous demonstrations, the two models predict only 331 and 220 zeroes, respectively.

Since the rare event nature of the dependent variables is also too highly dispersed to be sufficiently accounted for through a negative binomial distribution, I fitted a zero-inflated Poisson model to the data, with and without fixed effects to account for the unit heterogeneity described above.[16] This model assumes a two-part data

[15]Full results for all additional and diagnostic models are available from the author, and will also be available online at the authors website.

[16]One alternative to using a flexible zero-supplementing model is to log the dependent variables (after adding an incremental amount) as a means of making their distributions more amenable to regression. Doing this does indeed render the two dependent variables almost perfectly Poisson-distributed (means versus variances of 0.4 versus 0.3, and 0.7 versus 0.6). However, this then no

generating process such that event counts can either form part of a standard Poisson distribution or a point mass at zero. In specifying the pooled and fixed-effects models, I allowed each observation to have an equal chance of belonging to either process. These models recover a very high proportion of the actual zero counts in the data.[17]

The results of both model specifications (pooled and fixed effects) proved to be highly similar to those found above: Internet use continues to have a large and highly significant (99.9% confidence) effect on demonstrations of both types, but only in non-democracies. Mobile phone use continues to have a slight but highly significant negative effect in non-democracies, and a slightly significant negative effect on spontaneous demonstrations in democracies. In short, the results of these models are almost identical to the coefficient signs and significance depicted in Figure 3, with chief exception that in the fixed-effects model the small negative effect of mobile phones on demonstrations in democracies is significant.

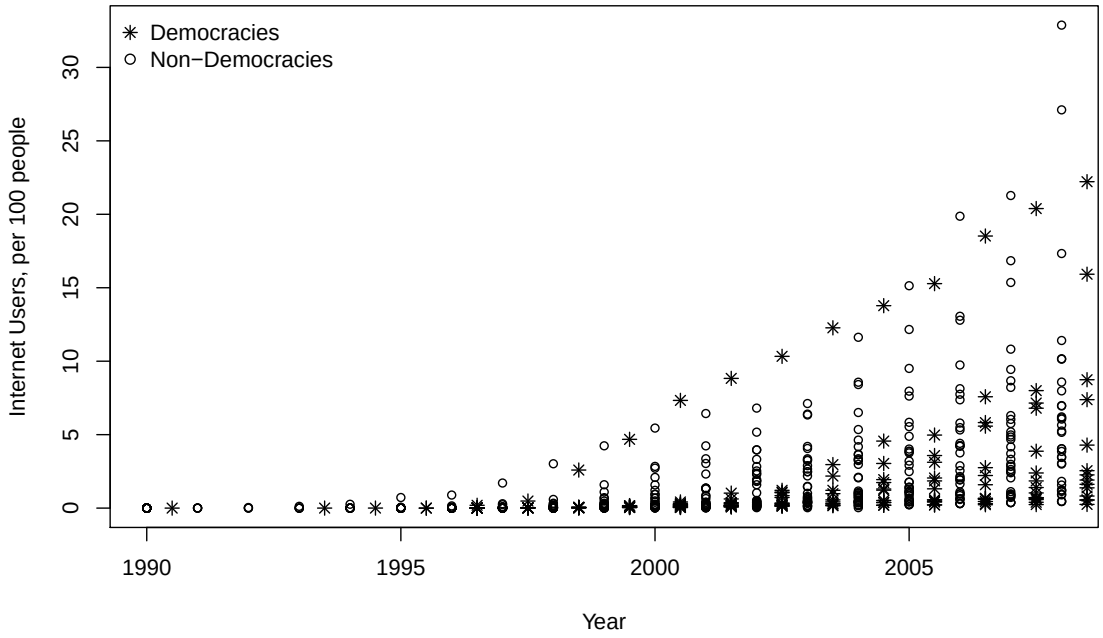
While the zero-inflated Poisson model improves the fit for zero counts in the dependent variable, it is less theoretically compelling than the multilevel model. While it intuitively makes sense that observations belong to particular groups in time and space, the real-world manifestation of the bifurcated data-generating process implied by the zero-inflated model is less intuitive. In selecting among models with highly similar results, I have chosen to present the model that best captures our theoretical understanding of how the world works.

A second important consideration is the possibly hidden effect of repression on both independent and dependent variables. As discussed in the theory above, it is certainly the case that demonstrations will be more difficult in non-democracies for a

longer entails count (integer) data, such that running a model would require additional rounding - an unsystematic transformation likely to bias inference.

[17] An alternate zero-supplementing model choice is the hurdle model, which would also produce the appropriate number of zeroes (by design), but its theoretical logic - that a separate process controls whether a zero or a count happens - is less appropriate here, especially since each SCAD-recorded demonstration is only recorded as a separate demonstration if it actually is (i.e. a multiple-day demonstration counts as one).

Figure 8: Social Media Diffusion, by Regime Type



number of reasons - an expectation borne out by systematic differences in these data. While there is high variation among countries generally, on average non-democracies have consistently fewer demonstrations per year than democracies. If non-democratic repression also has a depressing effect on the level of social media, this could be a powerful confounding variable provided some variation in repression among regimes - non-democracies that repress more would show lower levels on both variables, while non-democracies that repress less would show higher levels.

This possibility may be dismissed by reviewing the dispersion of social media among regimes. Although non-democracies have fewer demonstrations, they have among the highest levels of social media. As shown in Figure 8, the highest levels of Internet use occur in non-democracies, with the sole exception of Mauritius; at the lower level (0-5% Internet use), the many non-democracies in the sample slightly outperform the democracies. That being in a non-democracy is not associated with lower levels of the independent variable means repression could not be an omitted confounder in this analysis. Moreover, if this confounding effect were real, we should

see a corresponding effect for democracies, which is not borne out by the model results.

An additional criticism of the model is that random effects by year may not fully capture an underlying increase in demonstrations over time, which (since Internet use is also strictly increasing) could be responsible for the positive relationship consistently seen between these variables. While controlling for time as a variable is a reasonable option, I argue that random effects are a superior approach given the noisiness of the time trend of demonstrations (Figure 2, right). Although the rate at which demonstrations occur tends to rise over the sample, some years simply have many more demonstrations - and others, many fewer. This reality is best captured by year groups, some of which may simply have more demonstrations (captured by a higher intercept), or fewer.

Theoretical considerations aside, including time as a control variable in the multilevel model instead of applying random effects by year groups has no effect on the other coefficients or their standard errors; the magnitude and significance of effects reported above is unchanged.

A final criticism is that, since the two indicators for social media use are correlated at 0.74, multicollinearity could be affecting the standard errors and thus significance-based inferences about social media effects. Although these variables are highly correlated, they present across a number of model specifications opposite effects on the dependent variables. Highly correlated variables present estimation problems when their effects are too similar, such that the model has insufficient information to parse out which effect belongs to which variable. Given the highly distinct effects attributed to these variables - effects which are moreover consistent when the same models are estimated using only one social media indicator at a time - including both of them in the same model does not present a problem.

Conclusion

This paper presents an argument and supporting evidence to the effect that social media facilitate political mobilization, but only in non-democracies. Internet use is consistently, significantly, and substantially associated with greater political mobilization by groups and individuals across a number of different model specifications. Interestingly, mobile phone use does not have the same effect; future research here could parse out why this is the case, and under what circumstances (if any) mobile phones have political relevance for mobilization.

As cross-national empirical confirmation of social media's political role, this work justifies the excitement of some cyber-optimists, albeit with several important provisos. First, there is no evidence yet to justify similar optimism about democracies, where social media may have a negative effect on political mobilization, or no effect at all.

Second, as discussed above this effect may be limited to an elite phase. Internet use in Africa is still common only among those segments of the population that are most likely to make use of its political applications. As Internet use continues to spread across Africa, more of the population will have the opportunity to enjoy its non-political applications. The positive effect of increased use on mobilization may at this point level off, or disappear in the face of increased social media censorship. As my analysis used a sample with very little regime control of the Internet, the effects seen here may be wholly vulnerable to regime interference.

Finally and most critically, a demonstration does not a democracy make. As the experiences of Egypt and Syria since 2011 have soberly reminded us, technology that empowers citizens to punish incumbents does not offer tools for constructing better institutions, or for choosing better leaders. In the larger picture, greater Internet use may in the long run only facilitate greater unrest and instability.

Massive protests like those in the Moldova, 2009, Iran, 2009, Tunisia, 2010, and

Egypt, 2011, should not be analyzed without reference to underlying factors of national economies, internal politics, societies, and region dynamics. The cause of such large-scale mobilization lies undeniably in the very real grievances of these citizens against autocratic governments. However the ability of ordinary citizens to translate their grievances into effective activism is not a given. To overcome the high barriers non-democracies impose to protest, as these citizens did, has much to do with the mobilizational tools of social media.

Appendix

Table 3 lists the African nations included in this study. The analysis includes all nations for which data are available: protest data for some island/ partially island nations were not available (Cape Verde, Equatorial Guinea, the Seychelles, the Comoros, Sao Tome and Principe), while Zimbabwe, Somalia, and Djibouti lack data on control variables.

Table 3: Country Sample

Algeria	Congo, D. R.	Guinea	Mauritania	Sierra Leone
Angola	Congo Rep.	Guinea-Bissau	Mauritius	South Africa
Benin	Cote d'Ivoire	Kenya	Morocco	Sudan
Botswana	Egypt	Lesotho	Mozambique	Swaziland
Burkina Faso	Eritrea	Liberia	Namibia	Tanzania
Burundi	Ethiopia	Libya	Niger	Togo
Cameroon	Gabon	Madagascar	Nigeria	Tunisia
Cen. African Rep.	The Gambia	Malawi	Rwanda	Uganda
Chad	Ghana	Mali	Senegal	Zambia

45 *nations were included in the panel.*

Since the sample exists only through 2008, South Sudan (which obtained its independence in January 2011) is not considered a separate national unit over the time period of study.

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The Wrong Kind of Protest:

Social Media From the View of the Authoritarian

Jana Marie Bridwell

Abstract

This paper investigates the implications of new media technology for non-democracies. While existing research on this topic has often focused on the political effects of social media, this paper looks at the other side of that question to understand how a dictator responds. Quantitative evidence supports the paper's central argument, that how regimes control social media should vary systematically with geographical, societal, and strategic attributes that contribute to the risk of protest cascades. These findings explain why a non-democracy would ever choose not to censor social media, an otherwise puzzling phenomenon seen worldwide.

Dictators are expected to censor media. Why should social media be any different? Yet it is: While some regimes ban or tightly censor social media content, others use almost no censorship at all - even though they continue to censor older media. The high variation in how autocrats have handled this new technology indicates that their strategies are more complex than simply censoring to the extent possible, even though that seems like the obvious route and is generally assumed to be the goal by current research on the topic. This is especially puzzling because social media are increasingly linked with costly political protest. What explains the extreme variation

in social media control by non-democracies? More broadly, how will social media change patterns of protest in these regimes?

This paper answers these questions with a model of protest "cascades," or sustained mass protest over time or space. Controlling information reduces the likelihood of a cascade, but poses a trade-off for autocrats because it also reduces their own information. Autocrats resolve this trade-off depending on their vulnerability to a cascade given by structural and strategic risk factors. For regimes with certain risk factors, new media greatly increase the likelihood of a cascade, making the costs of widespread censorship worth bearing. For others, however, they have only a small impact, and we should expect less interference with new media.

My argument is organized as follows. I first explain how protest cascades develop, the conditions under which they becomes more likely, and why they are not always in the interest of opposing organizations. I describe how information lubricates their development, meaning that the primary tool for incumbents to manage cascade risk is information control. However this entails tradeoffs and must be implemented within the regime's institutional context. I then show how social media disrupts these patterns, both by facilitating cascades and complicating information control for regimes.

Having delineated this model of protest, I present two empirical tests. The first demonstrates that indicators related to cascade risk are significantly associated with the level of Internet control, while the second shows that a regime's competitive institutions almost completely determine the type of information control it employs.

Avoiding Protest Cascades

Anti-regime protests create costs for rulers. Yet protest also has the useful property of providing important information.[1] The lack of reliable information about

[1]The costs of protest might take different forms: legitimacy, security expenditure, potentially lost economic activity, etc. (see, e.g., McAdam 1982). Protest is defined as organized or spontaneous

domestic support, regime performance, and unsuccessful policy is a problem for non-democratic rulers, who typically suppress or curtail the informational feedback mechanisms available to democrats (e.g. independent press and monitoring agencies, bureaucratic transparency, rights of complaint, polls). This information problem can be severe, leading non-democratic incumbents to employ various creative solutions (Egorov, Guriev and Sonin 2009; Landry 2008; Magaloni 2006; Moustafa 2008). In a simple way, protests indicate both levels and areas of approval for the regime and incumbents (Lorentzen 2013). Although costly, protest provides a reliable information stream that can help incumbents rule.

Some protests, however, can serve as a seed for a cascade of serial protests, the costs of which greatly outweigh any informational benefits. Cascades occur when multiple urban areas, or the capital over an extended period of time, host protests which are linked by referencing a common idea and which specifically challenge incumbents or the structure of governance. In the event that a protest develops into a cascade, the informational benefits are worthless in the face of the high costs imposed. Simultaneous protests in multiple cities place a great burden on regime resources to regain control, and serial protests over time are inherently destabilizing. Any violence or breakdown of order disrupts business, tourism, and investment. Even if a cascade remains peaceful, incumbents face a high risk of ouster: when more citizens participate in linked protests, moderates join radicals, increasing the amount of information communicated about the regime and its legitimacy (Lohmann 1994). This is especially a problem when cascades communicate to important elements of the regime coalition that the ruling faction is not invulnerable, leading them to seriously consider defection (Robertson 2011). Although the biggest threat to incumbents may be regime insiders (Svolik 2009), those insiders may take their cues from the public.

events of political mobilization against the status quo. The "event" component of my definition excludes quotidian forms of anti-status-quo mobilization such as donating to an opposition party, voting for a challenger, convincing friends to support an opposition party, or displaying campaign materials. These are all forms of anti-status-quo political participation.

Preventing such defection is a main reason why many non-democratic regimes work to create the appearance, if not the reality, of overwhelming support (Magaloni 2006). Cascades destroy such appearances.

Cascades may even convince important international allies to drop crucial diplomatic, military, or economic assistance to the regime (as did the United States after massive 1986 demonstrations against the Marcos regime [Schock 1999]), or even offer decisive material aid to protesters (as did several nations during Libya's 2011 cascade [Brownlee et al 2015]). If a protest is inconvenient for a regime, a cascade is a nightmare. These exceptionally high costs mean that protest cascades provide uniquely powerful leverage over incumbents.

A Model of Cascade Development

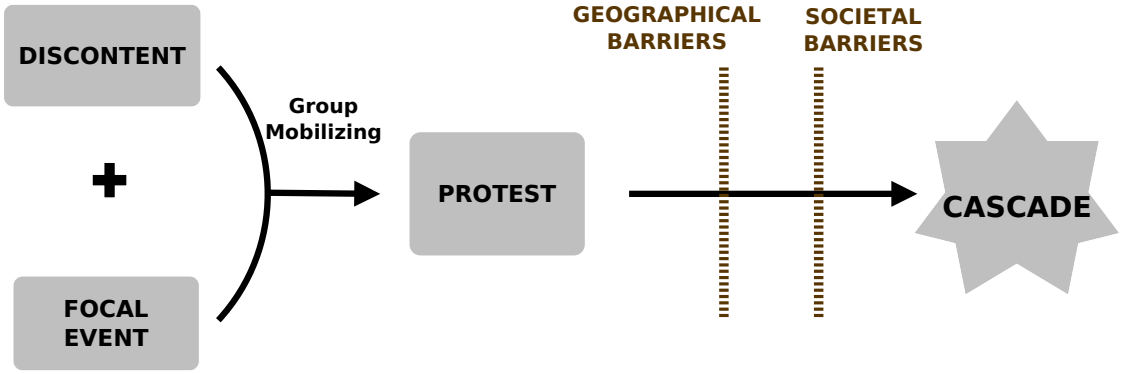
Fortunately for regimes, cascades tend to be rare events. To begin, cascades require a spark: a focal event that upsets or angers the public, in the presence of generalized discontent (see Figure 1). Cascades happen when the emotional momentum provided by that event activates protest linkages to coordinate simultaneous protests and inspire new ones. Linkages, which are potential connections between one protest and existing pockets of discontent in the population, represent opportunities for a protest to spread and trigger more mobilization. Potential focal events happen all the time, but will generally have no more effect than a ripple of public disapproval when the existing cascade risk, a composite of structural and strategic factors, is low.

Structural Risk Factors

Structural risk factors consist of geographic and societal barriers, which interfere with the process of cascade formation, and the level of generalized discontent, some of which is necessary for a cascade to develop.

Geographical barriers are aspects of a country's physical landscape that impede, or

Figure 1: A Model of Cascade Development



render more costly, movement and association among different parts of the country. These tend to reduce the audience for a focal point, as well as make it harder for existing linkages to become activated geographically. Even if potential connections exist and a strong focal point is present, both are made less visible by significant geographical barriers. Thus it is less likely that a protest will spread to new areas, and less likely that concurrent protests will be coordinated.

Societal barriers are aspects of a country's sociocultural landscape that restrict broad communication and free association across societal groups. To apply Lipset and Rokkan's (1967) term, societal barriers are cleavages. These interfere with the formation of linkages: protests are less likely to be linked to new groups, and so less likely to see participation beyond the original slice of society involved. For example, protest by a particular ethnic group against government abuses would be less likely to lead to a cascade in a country with high societal barriers. Their protest is more likely to be interpreted by out-groups as efforts by a rival group to claim more, instead of fellow citizens attempting to leverage reform.

Different constellations of geographical and societal barriers, both of which are difficult for regimes to manipulate, lead to considerable cross-national variation among

non-democracies regarding their structural cascade risk.[2] As barriers are both visible and relatively time-invariant, this risk is known.[3] Structural risk also includes the level of generalized discontent, unknown to regimes. For a protest to link to new pockets of discontent, that discontent must be substantially present and general.

Strategic Risk

Strategic barriers pertain to the more dynamic aspects of a country's political landscape: specifically, the incentives for opposing organization(s) to initiate and join cascades. This hinges on several factors, the most important being whether there is one clear "front-runner" organization.

Opposing organizations affect the likelihood of a protest cascade because the choices they make about how to organize a protest shape its future trajectory. In choosing a protest's discourse, participants, and visibility, organizers can increase or decrease linkages and thus the potential for a protest to cascade.

Most importantly, protest organizers create the political discourse of the protest: its stated goals and justifications. The nature of these statements powerfully affects whether the protest event has many linkages or very few. Broad or ideological goals, such as calls for more democratic institutions or human rights protection, create high potential for connections, while stated goals that are limited in scope or targeted to a specific, non-ideological purpose have much less potential. Organizers also increase linkages by recruiting participants from different sectors of society, and by choosing highly visible locations, e.g. the central downtown of the capital.

Although opposing organizations cannot create cascades with certainty, their ef-

[2]Policies magnifying existing social cleavages or leaving wilderness untouched can certainly be imagined, and would maximize barrier effect. Paul Biya's regime, for example, has designed strategies for maximizing the salience of societal barriers, which are reflected in Cameroon's 1996 constitution. Having acknowledged this, in general these strategies are very limited and entail a trade-off for other important regime goals, such as nationalism or economic growth. In the Cameroonian case, national integration has suffered (Konings & Nyamnjoh 2000).

[3]Domestic levels of discontent, which vary over time and provide the explosive power of focal events, are however unknown to regimes.

forts are a crucial part of the process and without them cascades are more unlikely. However, not all opposing organizations will choose to pursue cascades.

Cascade Costs and Frontrunners

Although they create a great deal of leverage against the regime and greatly increase the scope of demands, cascades are also costly and unpredictable. Even a cascade that is successful at ousting the incumbent could pave the way for a worse regime, a series of unstable and weak regimes, or no regime at all.[4] There is no guarantee that the new incumbent will represent an improvement in the eyes of most groups. If the former incumbents reassert control, the post-cascade reprisals are likely to be brutal. Coupled with the possibility of domestic or foreign military involvement, generating political change via cascade is a risky undertaking that will not appeal to many otherwise intransigent groups.

This uncertainty of outcome is substantially reduced if there is one actor (individual or organization) who has an overarching superiority in popular support relative to all other opposing groups: a "frontrunner." When an opposition frontrunner exists, there is much less uncertainty about the likely direction of post-cascade political changes. The frontrunner in particular faces dramatically reduced costs over possible cascade outcomes, because it can more readily expect to benefit from any forthcoming changes. Any incumbent replacement carries a fairly high likelihood of installing the frontrunner in the executive branch and reaping the policy and rent rewards entailed. Moreover, the costs of post-cascade reprisals are lower for frontrunners: in their position of relative strength, repression tends to increase their legitimacy and visibility. While cascades remain risky, the cost-benefit calculus of initiating or joining a protest cascade is dramatically improved when there is a frontrunner. For this reason, incumbents with opposition frontrunners face a greater risk of cascade.

[4]The recent Arab Spring protest cascades offer examples of all of these outcomes.

Regime Response: Information Control

The first priority of a regime response to protest conditions must be cascade avoidance. While low-level protests are costly but useful, cascades are only destructive. Cascades are one of the more dangerous situations a regime will face, second only to a coup. In this, regimes have a valuable tool: information control.

The process of cascade creation is greatly facilitated by a flow of information to and among the public.[5] Without such information flow, cascade development is obstructed (Hardin 1990). Potential focal events, which provide the momentum for cascades, are much more likely to go unreported and unnoticed, as are any coordinated high-linkage protests.[6]

As cascades are critically dependent on information flows, regimes can prevent and stymie them with information control: tactics by the state or its agents designed to systematically bias media content available to the public. Information control prevents or impedes widespread knowledge of focal events, robbing them of much of their potential momentum for cascade creation. As an example, a small 2001 protest in a regional city in Cameroon left three protesters dead after police violence; this potential focal event was noticed by international agencies, but was not reported in any major Cameroonian media and led to no further demonstrations.[7] Information

[5]The literature on social movements has long identified information flows as a key dimension of political opportunity (see, e.g., Schock 1999.)

[6]As a perfect example of this, 1998 corruption scandals that led thousands of Zimbabweans to protest in front of parliament for two days were not covered by state media, nor were the protests. Media coverage only began several days later when the protest turned violent, at which point stories highlighting the damage were used to "provide an opportunity for the authorities to justify police tactics and the need for new security legislation." The Zimbabwe Independent, "Good evening: There was no news today," 5 June 1998. www.allafrica.com/stories/199806050193.html This example, while illustrative, is hardly unique; in a more creative example of information control, the government-critical All Anglophone Conference of Cameroon saw its upcoming conference canceled on state-wide television via an announcement purportedly written by its own directors. The group's denial, to the effect that the conference was indeed scheduled, was rejected for broadcast.Cameroon Post, 29 April - l May 1994, p.2. Cited in Konings & Nyamnjoh (2000, p. 16).

[7]Country Reports on Human Rights Practices for 2001, Bureau of Democracy, Human Rights, and Labor, March 4, 2002, Washington, DC, www.state.gov/j/drl/rls/hrrpt/2001/af/8285.htm; and Cameroon: Three Killed in Opposition Protest 3 October 2001 by IRIN Humanitarian News and Analysis, allafrica.com/stories/200110020344.html

control additionally reduces protest visibility, which makes it more difficult for opposing organizations to mobilize supporters. When information is limited, knowledge of focal points or high-linkage seed protests stays local, failing to spread.

Choosing How Extensively to Control

There are trade-offs in implementing highly extensive information control. Extensive information control exacerbates a regime's information problems. Tightly limiting published content further decreases the flow of information to regimes about their support, potential focal events, and their performance. This is a problem because non-democracies lack many of the feedback loops common to democracies that deliver information about governmental performance, popularity, and policies. Even though regimes know their structural and strategic risk, cascade development includes randomness and unpredictability. Incumbents cannot predict or control when a powerful focal event may arise.[8] Incumbents are also uncertain about the potential momentum a focal event might have at a given time due to underlying discontent.

In balancing this trade-off between reduced cascade likelihood on the one hand, and higher-quality information on the other, regimes select a level of information control according to the severity of their known risk: their geography, society, and opposition characteristics.

Choosing What Type of Control

Regimes also choose how to implement that level of control. When applied to media such as newspapers, radio, and television, information control is easily identifiable as censorship: the suppression of content that "express[es] views in opposition to those of the current government," including content on human rights, free expression,

[8]For instance, focal events may be intentionally created by opposing actors (e.g. scandal revelations, self-immolations); they may also derive from exogenous circumstances outside of anyone's control (economic shocks, natural disasters).

Table 1: Expected Information Control Type Based on Regime Institutions

	Traditional Media	**Social Media**
Non-electoral	Public Censorship	Public Censorship
Electoral	Private Censorship	Skew

minority rights, and religious movements (definition adapted from Diebert et al 2010, 112). Censorship may be implemented either publicly or privately, for similar results through slightly different processes.

Public censorship involves regime officials creating and promulgating formal standards of acceptable political content. All citizens, whether in the journalistic community or not, are aware that codes of acceptable political content exist, and are given advance notice of consequences for violations. In Saudi Arabia, for example, publishers are warned directly by the Culture and Information Ministry when their reports stray into unacceptable territory; transgressions often lead to public dismissals, as in the case of journalists Fawaz Turki and Kinan ben Abdallah al-Ghamidi and editor Battal Alkus, all fired from different papers at different times in 2006.[9] Public censorship is justified by state representatives as not only legitimate, but necessary. Meanwhile, clarifying expected standards and their consequences decreases the pool of citizens who are likely, whether by design or by accident, to create disapproved content, leading to widespread self-censorship.[10]

Private censorship, on the other hand, is hidden from citizens beyond the content-producing community. Regime agents charged with enforcing censorship interact with journalists on an informal basis, offering less regular inducements, threats, or ad-hoc punishments to incentivize desired behavior. State representatives delivering threats or carrying out punishments may not even announce themselves as such but instead

[9]Reporters Without Borders Annual Report 2007 - Saudi Arabia, 1 February 2007, available at www.unhcr.org/refworld/docid/46e692ccc.html.

[10]The OpenNet Initiative confirms that self-censorship is a common practice in Saudi Arabia. See "Country Profile on Saudi Arabia," 06 Aug 2009, available at opennet.net/research/profiles/saudi-arabia

as independent and anonymous citizens, allowing the state to distance itself from the censorship. Punishments through private censorship may also take the form of unrelated or exaggerated lawsuits by the state against opposing media sources, as the National Agenda of Malawi experienced in September 1998 after publishing reports critical of the government.[11] Like public censorship, private censorship is designed to convey incentives for compliance with a certain standard, but in this case the audience of that standard is strictly limited to the journalistic community. The larger public will likely infer that some type of information control is occurring, but the regime does not acknowledge its role in the process.

The reason for this difference in implementation of information control is that this policy must be sensitive to the regime's competitive institutions. Regimes take one of two institutional forms: they either internalize competition, in which no formal challenges to the incumbent are permitted, or they may externalize competition and allow elections with challengers.[12] If the regime has adopted electoral competition, openly public censorship damages the necessary pretense that challenging incumbents is a valid activity.

Variance in institutional competition leads to different choices over public or private censorship for traditional media. Public censorship is only compatible with regime institutions that do not allow electoral challenges to executive officers. An internalized structure of competition, where the legitimacy of the incumbent is not formally contested, is well-suited to the rationale that the incumbent government has a duty to protect the public from dangerous content. Challenges to incumbents, whether in word or action, always constitute illegal and subversive behavior in these

[11] In this case, the state argued that the parent company, Chikonzero Publications, illegally registered their business license using false names. "Journalists and privately-owned newspapers harassed," International Freedom of Expression Exchange Clearing House, 9 Oct 1998. allafrica.com/stories/199810090131.html

[12] This institutional choice of regimes is taken as prior to my argument; which form of competition a regime will choose is the subject of an extensive and well-established literature (see, e.g., Geddes 1999, Levitsky and Way 2002, Acemoglu and Robinson 2005, Gandhi 2008, Boix and Svolik 2013), and is not argued here.

regimes. Internally competitive regimes thus employ public implementation of censorship.

Regimes that allow external challenges to the rule of incumbents via competitive elections for executive power cannot similarly create public bans on all content challenging incumbents (Robertson 2011). Elections open to regime challengers must be infused with at least a modicum of contestation in order to garner participation and yield the benefits noted by the literature on electoral authoritarianism (e.g., Levitsky and Way 2002). Campaigns necessarily entail public discourse that challenges or questions current incumbents and policies. As long as formal challenges for power are legal and vested with some credibility, banning all challenging speech is an incompatible policy. Private censorship is suited to these regimes, which need to be less public in their censorship. As summarized in the left column of Table 1, all nondemocracies use information control on traditional media (print, radio, television), but internally competitive regimes will employ public censorship while externally competitive regimes will use private censorship.

Social Media: Disrupting Patterns of Politics

There is an increasing body of research that social media offer new tools for opposing organizations with respect to protest and mobilizing (see, e.g., Ayers 1999, Benkler 2006, Chowdhury 2008, Diamond 2010, Sreberny and Khiabany 2010, Ortmann 2011, Farrell 2012, Miner n.d.). Decentralized content production, wide audience access, immediacy, and searchability all contribute to improving the cascade likelihood for those groups that pursue them.[13]

Social media render regimes more vulnerable to cascades in another way: they

[13]For example, during 2011 elections, Singaporean opposition parties mobilized sufficient volunteer monitors to staff all polling stations for the first time - an accomplishment possible with social media publicizing (Ortmann 2011). The Young Russia party leadership agrees, crediting the Internet with the development of their party (Semetko and Krasnoboka 2003, 81-82). The authors summarize, "New parties... are better equipped to compete with old parties because of the Internet" (91).

erode the effect of geographic barriers. Information can be sent across physical spaces and obstacles incredibly easily and at very low cost, and the potential audience includes virtually everyone with a cell phone or Internet access.[14] Excepting relatively recent satellite television, social media traverse geographical and physical barriers more easily than traditional media, meaning that such barriers are far less relevant than previously.

The erosion of geographical barriers means that focal events will be more visible, and linkages more perceptible, across difficult terrain and great distances. Barriers such as size or difficult terrain that previously limited protest linkages or impeded their activation have much less import in a society diffused with social media access. Protest linkages will be more easily activated than previously in societies with high geographical barriers.

Importantly, social media are unlikely to erode the effect of societal barriers, if present. Experience and research have shown that whatever opportunities social media afford for meeting and engaging strangers, users strongly tend to talk to the same types of people online as offline.[15] Given a wide choice of content to consume, users also tend to prefer content that supports their pre-existing interests, beliefs, and identities (Graber 2003). Additionally, the highly textual content of cell phone and Internet communication means that any language barriers that apply in the real world will apply in the virtual world as well.

This means that the advent of social media will have a differential impact on country's cascade risk, depending on what barriers were already present. Geographical barriers will erode considerably with widespread use of social media, while societal barriers will be more resilient. Some regimes will see a substantial increase in their

[14]Of course, social media use remains dependent on geographically-dependent ICT infrastructure. Users require the presence of cell towers, satellites, or cable uplinks somewhere in their region for access to a broader audience. However, geographical obstacles are greatly reduced for users of social media relative to users of traditional media (or face-to-face communication).

[15]See McPherson et al 2001 for a discussion of this "homophily principle."

structural cascade risk, while others will see very little change.

Public Content Production: A Challenge for Private Censorship

Social media additionally complicates the main regime response to cascade risk, information control. The high start-up and maintenance costs of newsletters, radio stations, and television stations results in a fairly centralized structure of content production that is amenable to regime control via either public or private censorship (Benkler 2006, Schlozman et al 2012, Shirky 2011). Social media lack this character, and inducing the discreet cooperation of content producers away from public notice (as with private censorship) is not possible when the public *is* the content-producing community.

An alternate form of information control, skew, involves the mass production of content favorable to a regime, designed to overwhelm and discredit any unfavorable content.[16] When using skew, the regime maintains the pretense that media content is politically neutral, while covertly expending resources to bias content in its favor. The same features of social media that complicate private censorship are eminently adaptable to skew: anonymity allows the regime to create content seemingly written by ordinary citizens or even opposing organizations, while digital technology facilitates the rapid and massive proliferation of such messages across many cell phones and computers. For externally-competitive regimes whose private censorship of traditional media is ill-suited to social media, skew provides an optimal substitute strategy.

Internally competitive regimes will continue to rely on public censorship, although this will require greater resources to effect on a decentralized publishing structure.[17]

[16]Such content might be called propaganda; I use a separate term to evoke a more subtle strategy than typically associated with propaganda. Propaganda itself is not incompatible with public censorship, but subtle propaganda will be most effective when combined with the impression that content has not been manipulated by state agents prior to broadcasting.

[17]Regimes using standard censorship of social media may also transmit propaganda using social media, but the absence of a supposedly neutral political space makes it much less effective than skew.

These regimes will extend the existing public standards of appropriate political discourse to new media technology, emphasizing that transgressions will be observed, noted, and punished. Much like traditional media standards, social media standards will be justified to citizens on the basis of security concerns, the regime's duty to uphold decency and morality, or nationalism.[18]

The key distinction between the two types of social media control, skew and public censorship, is that the latter entails no public pretense that the newly created public space online is a neutral fora for political debate - quite the opposite. The regime clarifies that this is *not* a neutral space in order to preempt the production, and deter the consumption, of subversive content (Wang 2009).

With skew, social media is presented as a politically neutral space, but the regime overwhelms what unfavorable content exists through superior production of favorable content, and uses covert tactics to undermine the effective use of social media by opposing groups (Alexander 2004, Troianovsky 2009). Given access to far greater resources and human capital, the state is heavily advantaged over its opponents in the quality and the quantity of digital content it can produce (Morozov 2011), and some governments have developed skew tactics to be quite effective at neutralizing opposition presence online (Diebert and Rohozinski 2010).[19]

The effectiveness of skew tactics - spreading rumors discrediting the opposition, creating propaganda - depends critically upon the premise of a politically neutral content space. The fact that citizens may search for opposition groups, and are able to read regime-critical content if they find it, lends credibility to covertly skewed content. If most comments on a news article are pro-regime, the few anti-regime posts imply that the site has not been censored - suggesting powerfully that most

[18]These are not necessarily invalid reasons; most governments censor at least some content for these reasons (e.g. the Anarchist's Cookbook or child pornography).

[19]To return to the Singaporean example mentioned: although the opposition was able to mobilize more volunteers with social media, observers noted that the People's Action Party's flashy, high-tech, interactive website content was likely more impressive to voters (Ortmann 2011).

people really do support the regime. This impression is given even if posts have been artificially created through account-multiplication software or paid trolls. The presentation of online fora as neutral is the critical difference between skew and public censorship.

Implications

My argument on regime management of social media content offers predictions for two choices: the extent of information control, and the form of information control.

First, the *extent* of social media content control chosen by a regime will depend on known structural and strategic risk factors.[20] Since social media decrease the salience of geographical barriers without having a substantial impact on that of societal barriers, how much social media increase the cascade risk will depend upon the existing constellation of barriers in a given nation. Greater increases in cascade risk will correspond to greater use of information control:

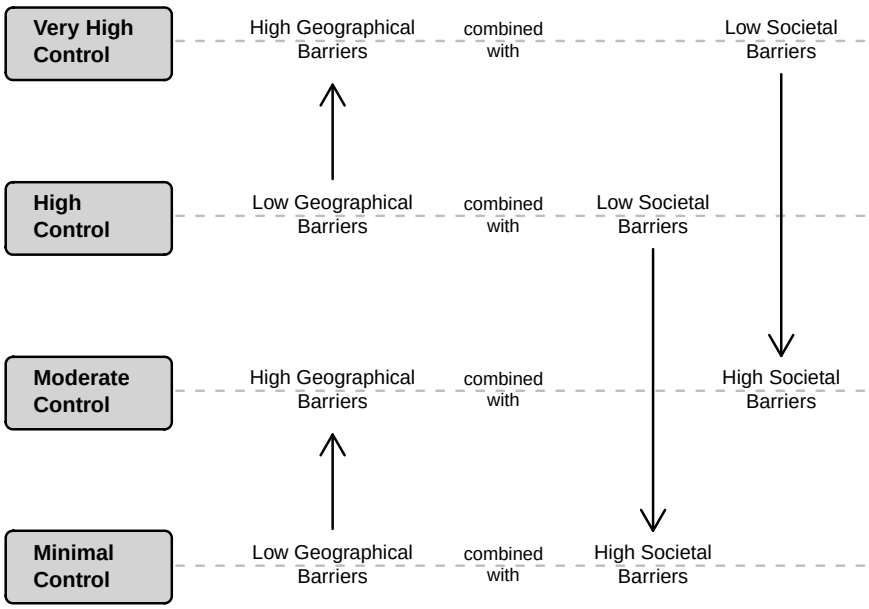
H_1 Regimes with low geographical and high societal barriers are not likely to see a meaningful change in their prior risk of cascade with the advent of social media use in their populations. I expect these regimes will not invest heavily in social media control.

H_2 Regimes with high geographical and low societal barriers will see a large change in their prior cascade risk with social media, resulting in a very high cascade risk. These regimes are expected to develop the *most* extensive social media control policies.

H_3 Regimes with high barriers of both types will see a similar change in their cascade risk, but the result involves a lower risk due to remaining societal barriers. These

[20]These expectations take effect when a substantial subset of the population uses social media.

Figure 2: Theoretical Expectations of Barrier Combinations on Social Media Control



regimes are expected to implement moderately extensive social media control policies.

H_4 Regimes with low barriers for all types will not see a meaningful change in their risk of cascade due to a barrier change. However, these regimes already have the highest possible structural risk, for whom social media will be dangerous simply for its ability to provide opposing organizations with useful mobilizing tools. These regimes are also expected to highly control social media content.

Figure 2 clarifies this dynamic. Each level of social media control, sorted at the left, should correspond with a particular combination of geographical and societal barriers. Regardless of the pre-existing societal barriers, moving from low to high geographical barriers always corresponds to an increase in social media control (indicated by the upward-pointing arrows). Conversely, regardless of the geographical barriers present, moving from low to high societal barriers always corresponds to a decrease in the level of control (indicated by downward-pointing arrows).

Cascade likelihood is also increased by strategic risk factors, specifically whether there is one group or individual who lessens uncertainty about post-cascade outcomes:

H_5 Regimes facing opposition frontrunners will adopt more extensive social media control than regimes without frontrunners.

Second, the *type* of information control depends on the regime's structure of competition. Externally-competitive regimes must allow at least the premise of challenging content, which is incompatible with a public ban on criticism. For internally-competitive regimes, reinforcing public standards of appropriate discourse is well-suited to the justifications of rule:

H_6 Externally-competitive regimes will use skew to control the content of social media, while internally-competitive regimes will use public censorship.

Empirical Analysis

Empirical analysis was conducted on a sample of all non-democracies for which clear data was available for the year 2010.[21] Statistical analysis over multiple years is neither necessary nor feasible for these tests, as they involve fairly static explanatory variables. The geographic and societal features that affect the extent of control (e.g. deserts and ethnic heterogeneity) change little even over a decade, and changes in the political institutions that explain the type of control would suggest broader regime change (and a change in the sample).

[21]The year 2010 was chosen to maximize recent data coverage while minimizing sample volatility. The Arab Spring and contemporaneous political upheaval dramatically changed the political landscapes in a number of non-democracies through 2011-2012, affecting over 10% of the pre-2011 non-democracies for which good data is available. During and just after the upheaval, affected countries did not have sufficiently consistent or stable regimes to extract meaningful scores for regime Internet policy for a given year. Key explanatory variables, such as regime institutions and frontrunning opposing organizations, were moreover in flux over the course of 2011-2013. Thus the year 2010 provides a balance of minimizing volatility while maximizing the recentness and overall coverage of data.

The two dependent variables (extent and type of social media control) were newly created for this project. Extent of Internet control was measured by applying a Bayesian latent variable model to a set of markers, while type of Internet control was determined using a family-resemblance coding scheme on another set of indicators. Details about data collection, coding, and estimation are included in Appendix B.

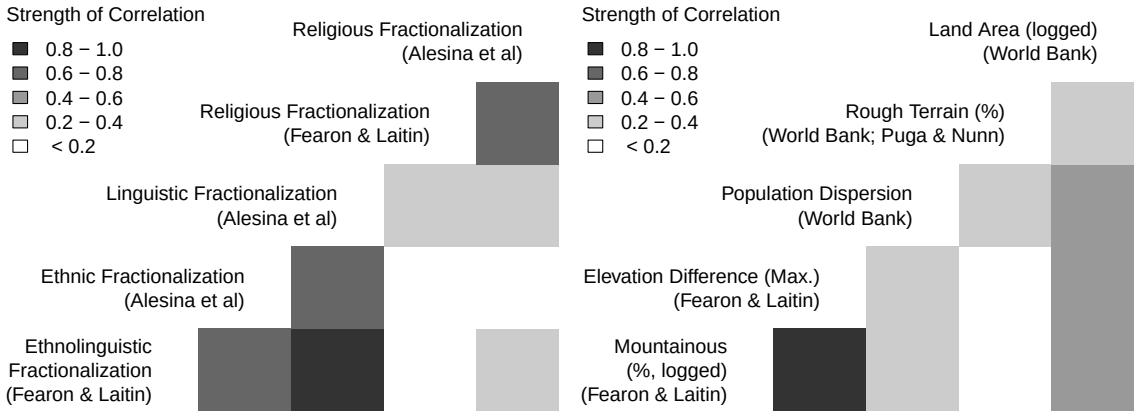
Explaining the *Extent* of Social Media Control

The model above implies that the extent of social media control employed by a regime is due to its domestic combination of structural factors, given by geographical and societal barriers to cascades, and strategic factors, given by whether a frontrunning opposing organization exists. As societal barriers increase the level of social media control should drop, while as geographical barriers increase the level of social media control should rise. As shown in Figure 2, the expected impact of an increase in societal barriers is predicted to be much greater than the expected effect of a similar increase in geographical barriers. With respect to empirical testing using a relatively small ($N = 51$) sample, this makes demonstrating statistical significance of a geographical effect substantially more challenging.

Independent variables: Societal barriers I focused on ethnic, linguistic, and religious fractionalization. Two recent studies provide indicators for these concepts: Alesina, Devleeschauwer, Easterly, Kurlat, and Wacziarg (2003) provide estimates of ethnic, linguistic, and religious fractionalization in 215 countries, including almost all of the relevant sample (50 of the 51 countries).[22] Fearon and Laitin's (2003) research provides highly similar information about ethnolinguistic fractionalization (ELF) and

[22]These estimates are compiled primarily from the *Encyclopedia Brittanica*, supplemented in the case of ethnic fractionalization with data from the CIA Factbook, Mozaffar and Scarrit (1999), Levinson (1998), and national census data. Each measure is calculated by the authors from underlying group proportions and reflects the likelihood that two randomly selected individuals from a population belong to different groups (Alesina et al, 2003).

Figure 3: Correlations Among Societal (*left*) and Geographical (*right*) Indicators



religious fractionlization (see Figure 3, left).[23]

As shown in the left correlation plot of Figure 3, the different indicators for each social fracture correlate highly. The two religious fractionalization scores are highly similar, and the three indicators for ethnic/ linguistic fractionalization even more so with correlations approaching 1.0. This increases confidence that these variables are all measuring the same concept: though gathered via different methods, all arrive at similar results. This high correlation also precludes the possibility of including more than one indicator for either fracture in the same model due to multicollinearity.

Geographical Barriers This concept encompasses two related factors: how difficult is the terrain, and how widely dispersed is the population across it.

While intuitive, the concept of difficult terrain for my sample is not well encapsulated by existing data. The literature on civil war, which includes the concept of difficult terrain to explain war phenomena, typically uses a mountain-based measure, either the percentage of national terrain that is mountainous, or its maximum eleva-

[23]ELF is based on the *Atlas Narodov Mira* (1964), updated and supplemented by the authors using a number of sources including the CIA Factbook, Library of Congress country studies, and local sources; religious fractionalization is calculated from multiple souces, primarily the CIA Factbook. As with the Alesina et al measures, both estimate the probability of two randomly selected individuals belonging to different groups. All fractionalization indicators vary between 0 and 1, with higher values indicating higher levels of societal fractionalization.

tion difference (e.g., Fearon and Laitin 2003). As shown in the right side of Figure 3, these two variables have almost a perfect correlation. Another indicator commonly employed is the percentage of terrain that is forested (World Bank, 2014).

While these provide a good approximation of difficult terrain in much of the world, particularly Central African regions that are of high interest to the conflict literature, my sample includes a disproportionate number of desert nations, for which these measures are all misleading (almost 40% are mostly or partially deserted; see Appendix A, Table 6).[24] Libya, for example, has little mountainous terrain (6.1%), a fairly low maximum elevation change (2.3 km, below the 25th percentile for the sample), and almost no forest (0.1%). Using these measures, Libya would be recorded for the purposes of my analysis as having very minimal geographical barriers, despite being almost half desert (48.2%). While desert can be crossed using pack animals or certain types of all-wheel drive vehicles, it provides for challenging journeys, and ultimately poses no less substantial obstacle to rapid movement and communication among people than does forested terrain.

As desert terrain also embodies the concept of geographical barriers as conceived in my argument, I created a new measure to indicate 'rough terrain' by adding the percentage forest, and the percentage desert (taken from Nunn and Puga 2012). These two types of terrain are mutually exclusive by definition, meaning the resulting value should indicate the percentage of national terrain that is not amenable to easy movement and communication, whether due to obstacles of forest or obstacles of desert.

This measure of rough terrain cannot explicitly include mountains, which may (or may not) have an unknown amount of overlap with other terrain in a given country. Therefore I also include a measure for mountainous terrain in my empirical analysis,

[24]Importantly, 'rough terrain' for the conflict literature encompasses the idea of easy concealment for insurgents, for which mountains and forests are particularly valuable; my argument focuses on the easy movement of ordinary citizens between cities, which would include low-concealment difficult terrain like desert.

while acknowledging that this will yield incorrect scores for geographical barriers in non-mountainous countries.

The second component of geographical barriers entails how widely the population is dispersed. This can be measured by how much of the population lives outside the largest city. When a substantial proportion of the country's inhabitants are all in one place, this results in extremely low geographical barriers and greatly facilitates protests cascading. A more indirect measure of this is the size of the country: the larger the size, the greater the distances among people in different parts of the country.[25]

Control I control for the level of Internet use, taken from the International Telecommunications Union (World Bank 2014).[26] This variable is included to account for any possibility that the extent of Internet control is simply a function of how popular it is among the population.[27]

Analysis

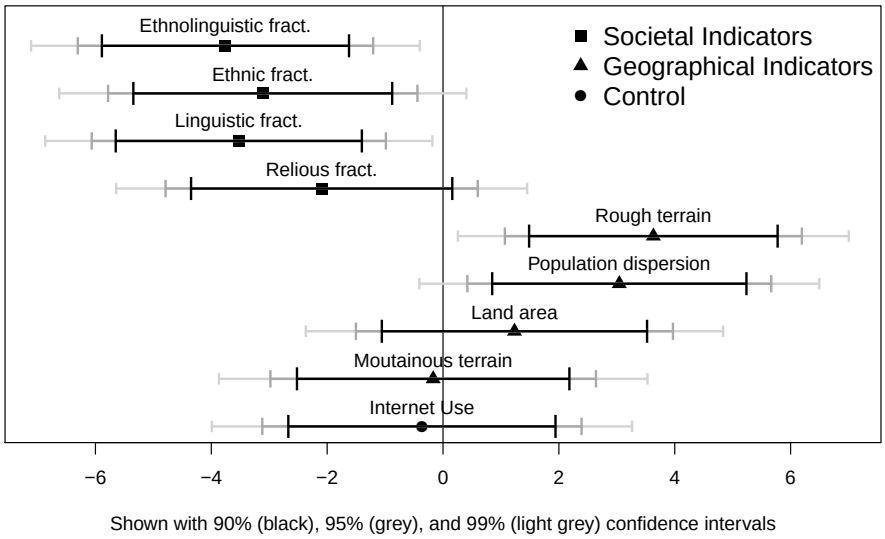
Model predictions were tested on a sample of 51 nations (see Appendix A, Table 6). The dependent variable for this analysis, the Bayesian-estimated scores for the extent of internet control, is unbounded, continuous and roughly normally distributed (see Appendix B, Figure 7). The range of control extent scores varies from roughly -20

[25]The data for both indicators was taken from the World Bank (2013).

[26]Another control that was considered is POLITY, to proxy for the idea of "regime openness." However this index is highly problematic with respect to regression because it includes elements on freedoms of press and expression, which is what the dependent variable is designed to measure (with respect to online content specifically). There is similar conceptual overlap for FH scores and other indices of "openness," meaning there are problems of validity in including such a control. Importantly, the variable for Internet control extent is not a virtual duplicate of POLITY, although the two are highly correlated (-0.68).

[27]While wealth is not suspected to correlate with societal or geographical barriers, and is also not related to the dependent variable, a country's overall level of development is related to the control variable of Internet use. All models reported were thus also tested with an added control for the overall development of a nation, approximated by gross domestic product (GDP) per capita. In no model did the inclusion of this variable affect results.

Figure 4: Separate Effects of Barrier Indicators on Internet Control Extent



Predicted Change in the **Control Extent Score**, Given 1 Standard Deviation Increase

(virtually no information control) to +20 (most extensive information control). A linear model was fitted to the data to estimate the relationships between the various societal and geographical barrier indicators.

Preliminary analysis, in which the dependent variable was regressed separately on each indicator, provides support for a strong negative effect of societal barriers, and a weaker positive effect of geographical barriers.[28] Figure 4 shows the estimated relationships between the dependent variable and the various indicators. Some of the independent variables are unbounded, while others assume values only between 0 and 1; accordingly, Figure 4 compares the predicted change in a regime's control extent score (which ranges roughly from −20 to +20) given one standard-deviation increase in each independent variable.

These preliminary separate regressions predict strong and significant negative effects on control extent given standard deviation increases in each of the various ethnic/ linguistic fracture measures. Similar effects are predicted for religious fractionaliza-

[28]This set of preliminary regressions is useful as the small sample ($N = 51$) limits analysis on many indicators simultaneously, particularly for indicators designed to get the same theoretical concept. The estimated effects will be unbiased for the two different (uncorrelated) concepts.

Table 2: Explaining Social Media Control Extent with Structural Cascade Risk

Concept	1	2	3	4
Ethnolinguistic Fract.	-13.15***	-13.41***	-13.00***	-14.00***
	(4.68)	(4.67)	(4.45)	(5.02)
Religious Fract.	-	-3.20	-	-0.92
		(5.32)		(5.72)
Rough Terrain	0.17**	-	0.13*	0.13*
	(0.07)		(0.07)	(0.07)
Population Dispersion	-	0.17**	0.12*	0.12
		(0.07)	(0.07)	(0.08)
Mountainous (logged)	0.65	-	-	0.00
	(0.92)			(1.00)
Internet use (*Control*)	-	-	-	-0.06
				(0.08)
R^2	0.26	0.25	0.30	0.31
N	*50*	*51*	*51*	*50*

Significance levels are indicated as follows: * 90% confidence, ** 95%, *** 99%. All models include a constant (not shown as it is not theoretically meaningful).

tion, but are sufficiently uncertain so as to fail standard levels of significance.

Significant positive effects on control extent are estimated for increases in rough terrain and population dispersion. Land area, which provides a less direct measure of population dispersal, does not have a significant relationship with Internet control extent, although its effects are estimated to be positive. Mountainous terrain does not have a notable effect on the extent of Internet control. Internet use, the control variable, is also not estimated as having a relationship with the dependent variable.

These separate effects are highly stable in multivariate regressiosn. Table 2 reports the coefficients from four highly similar models, each predicting country scores for Internet control extent. As noted above, the very high similarity of certain measures precludes including more than one for a given concept; the models shown include ELF as the fractionalization indicators, but all three produce highly similar results for effect size, direction, and confidence.

As proposed, societal barriers are strongly associated with lower levels of Internet control. In all models, ethnic/ linguistic fractionalization is expected to significantly

decrease the level of Internet control, which makes intuitive sense: Incumbents facing more highly fractured societies enjoy a higher barrier to cascades which, importantly, will *not* be affected by the advent of widespread Internet use. Societal barriers that exist offline bleed into interactions among citizens online as well. Accordingly, an increase of 0.1 in the likelihood that two citizens belong to different groups is associated with between a 1.3 and 1.4 point reduction in that country's overall Internet control score, an effect that is significant at 99% confidence. Countries with fairly homogenous populations are clearly expected to employ substantially more extensive Internet control.

Interestingly, the negative effect estimated for religious fractionalization is much weaker, and statistically insignificant (again, results similar using either indicator). This may be due to the fact that societal cleavages expressed through religious differences are more difficult to calculate, being highly sensitive to the level of aggregation employed. While ethnic and linguistic fractionalization measures map fairly well onto salient group cleavages, the religious fractionalization measures may or may not depending on how different religious groupings are measured.

An example taken from the sample illustrates this point. The Gambia is 95% Sunni Muslim, leading to a religious fractionalization score of 0.1, in the bottom 15% of the sample. However this overwhelming majority includes groups ascribing to different Sufi loyalties (most prominently Tijaniyah, Qadiriyah, Muridiyah, and Ahmadiyya), which represent related but distinct traditions within Gambian Islam, cleavages which are highly salient among the population. The 95% majority also includes other non-Sufi Muslim minorities. This means that while technically accurate (the country is almost entirely Sunni Muslim), the Gambia's low religious fractionalization score provides a misleading picture of actual societal cleavages among the population. The ethnic- and linguistic-based measures more clearly detect this heterogeneity, which may explain why these measures more clearly demonstrate the effect expected of

societal barriers. As shown in the left panel of Figure 3, the two measures of religious fractionalization show little to no correlation with any of the other fractionalization measures.

The predicted positive effect of geographical barriers, both in terms of the difficulty of terrain and in terms of population dispersal, is also strongly supported by these models. These indicators are argued to have a consistent positive effect on the extent of Internet control employed: the greater the geographic barriers a regime faces, the more substantial this makes the change brought by social media. These two variables are associated with highly similar effects on the dependent variable, and each demonstrates the strongest support when regressed independently of the other - suggesting that, as expected, they are tapping into the same underlying concept. Every increase of 10% in a country's rough terrain is estimated to result in roughly a 1.7 point increase (1.3 point, independently of population dispersion) in its overall score on control extent; this effect is significant at 95% confidence. An increase of 10% in the fraction of people living outside the largest city also corresponds to a 1.7 point increase (1.2 point, independently of terrain) in the extent of Internet control, also significant at 95% confidence.

As suspected, the percentage of mountainous terrain does not have a strong relationship to the dependent variable. This may be attributed to the fact that this indicator yields artificially low scores for many flat, but heavily forested or desert countries. While highly mountainous countries are argued to need greater Internet control extent, countries with few mountains are theorized to employ either less or more Internet control, depending on the nature of their flat terrain. The consistency of estimated effects for the most analytically valid geographical indicators across different specifications, both when assessed independently and when combined, nevertheless lends weight to the conclusion that there is a genuine geographical element in control extensiveness.

Table 3: Explaining Control Extent With Structural and Strategic Risk Factors

Concept		1	2	3	4
Ethnolinguistic	-	-13.57***	-13.28***	-13.24***	-14.02***
Fract.		(4.47)	(4.39)	(4.24)	(4.78)
Religious Fract.	-	-	-4.10	-	-1.84
			(5.01)		(5.47)
Rough Terrain	-	0.15**	-	0.10	0.11
		(0.06)		(0.06)	(0.07)
Population	-	-	0.16**	0.13*	0.11
Dispersion			(0.07)	(0.07)	(0.08)
Mountainous	-	0.85	-	-	0.23
(logged)		(0.89)			(0.96)
Internet use	-	-	-	-	-0.05
(*Control*)					(0.07)
Presence of a	6.24**	5.69**	6.20**	5.48**	5.60**
FrontRunner	(2.64)	(2.42)	(2.32)	(2.30)	(2.42)
R^2	0.10	0.34	0.35	0.38	0.39
N	*51*	*50*	*51*	*51*	*50*

Significance levels are indicated as follows: * 90% confidence, ** 95%, *** 99%.
All models include a constant (not shown as it is not theoretically meaningful).

The control variable, level of Internet use in a country, is not meaningfully associated with the dependent variable, nor does it have any notable impact on the predicted effects of the other variables.

The Impact of Strategic Factors: Frontrunners

I employ the presence or absence of a frontrunning opposition actor as an indicator of strategic factors explaining variation in the extent of control. This variable captures whether there is an individual or cohesive group opposing the incumbent, whose political strength is clearly superior to any other actor opposing the incumbent.

This variable was coded by hand.[29] For each of the 51 countries in the sample, I measured whether such a frontrunner existed for the year 2010. In each case, I

[29]Sources used include Adam Carr's electoral archive, compiled from any extant official reports and augmented with foreign and domestic estimates; CQ Press's Political Handbook of the World (2011, 2012) for qualitative analyses of domestic political actors in 2010; and local newspapers.

looked for evidence of a clear superiority in one organization's capture of popular support using voteshares (where applicable), accounts of fraud and harassment, and qualitative analyses of different domestic political groupings.[30] Table 8 in Appendix C lists the results of this coding process for all 51 countries, including the name of the frontrunning individidual and/ or organization where present.

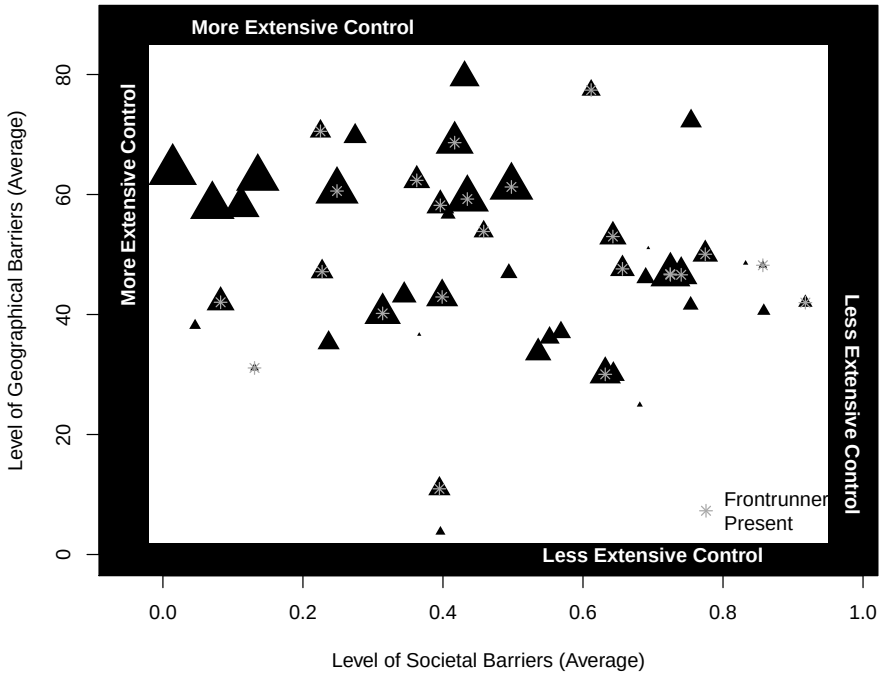
Following the statistical methods above, the scores for extent of social media control were regressed on this new variable. By itself, the simple presence or absence of a frontrunner is estimated to have an incredibly powerful effect on the extensiveness of Internet control: regimes that face frontrunners score on average 6.2 points higher on Internet control extent than regimes that do not, an effect significant at 95% confidence (see Table 3, first column).

When combined with the structural risk models discussed above, the presence of a domestic frontrunner remains associated with roughly a six point increase in a country's control extent (the effect ranges from +5.5 to +6.2). For reference, the total range for control extent scores is -18 to +19, and a six point difference represents over half a standard deviation (sd = 9.8). This political variable moreover has a negligible impact on the direction, sizes, and confidence estimated for the effects of structural variables. Relative to the geographical and societal factors, having a frontrunner is an incredibly powerful variable for predicting social media extent, and is estimated to *independently* explain about 10% of the total variance in Internet control extensiveness (see Table 3, first column).

Figure 5 summarizes the overall fit of regimes into the pattern predicted by my argument by plotting their distribution by barriers. Each triangle represents a regime in 2010, with larger-sized triangles corresponding to more extensive Internet control. The x-axis represents a rough mean of the various indicators for societal barriers, as does the y-axis for the geographical barrier indicators. According to my argument,

[30]For more details on the specific measurement criteria used, see Bridwell (n.d.) which employs frontrunner status as an explanatory variable for a panel of non-democracies.

Figure 5: Distribution of Regimes by Societal and Geographical Barriers



the triangles in the upper left corner, representing regimes with low societal and high geographical barriers, should be the largest, while those in the bottom right, with high societal but low geographical barriers, should be among the smallest (H_{1-4}). With a few exceptions, this is in fact the general trend for triangle size: increasing in geographical barriers, and decreasing in societal barriers. Tunisia, China, Vietnam, and North Korea, all in the top left corner, employ the most extensive Internet control policies of the whole sample, while Uganda, Afghanistan, Guinea, and Kyrgyzstan employ low to minimally extensive control.

The plot also indicates regimes with low strategic barriers, specifically opposition frontrunners, with a grey asterisk. Independently of their structural barrier configurations, these regimes should employ more extensive Internet control than those without asterisks (H_5). Indeed, many of the largest triangles in the right hand of the plot - which use more extensive Internet control than would be predicted by structural barriers alone - represent regimes facing frontrunners. Examples of this phenomenon

include Iran, Ethiopia, Myanmar, and the Sudan.

Explaining the *Type* of Social Media Control

My argument indicates that the type of Internet control should be determined by the nature of a regime's competitive institutions (H_6). Those regimes with externalized competition, characterized by elections contested at the executive level by legal if marginalized opposition parties, should practice skew-type control policies (see Table 1). Those regimes without semi-credible elections, in which competition for positions of power is internalized within the ruling institution, will instead employ public censorship (block-type policies). These predictions were tested on a sample of 43 countries (see Appendix A, Table7).

Key Variables

The dependent variable, type of social media control, was coded using evidence to answer five binary questions on social media policy. A policy of either "skewing" or "blocking" was designated by family resemblance, indicated by majority agreement among the five indicators. Details on this coding process are in Appendix B.

The explanatory variable, structure of institutionalized competition, is distinguished by a key feature of regimes: whether or not electoral challenges to executive incumbents are legal and vested with any credibility. For this to be true requires that genuine challengers are tolerated by the regime, and are given a chance, however remote, at executive power through elections. In short, a country must demonstrate electoral selection for the effective executive of government, and there must be legal opposition parties that exist outside of regime control.

This information is available using the Democracy-Dictatorship (DD) dataset compiled by Cheibub, Gandhi, and Vreeland (2009), which includes variables pertaining

to institutional features of democratic and non-democratic regimes. Four variables were used to determine which regimes both use electoral selection for the effective executive (variable `exselec`),[31] and have multiple legal parties outside the regime front (variables `dejure`, `defacto`, and `defacto2`).[32] Regimes meeting both of these criteria were considered externally-competitive. Regimes failing either the party criterion, or the electoral selection criterion, were categorized as internally-competitive.

As the DD dataset is current through 2008, I updated these four variables for the year 2010 using the same criteria and information provided by the 2010-2012 Political Handbooks of the World (Banks et al 2010, 2011, 2012). Updating resulted in 20 internally-competitive regimes for the year 2010, and 23 externally-competitive regimes (see Table 4). Countries whose designation has changed from 2008 are indicated (†), as are those with any unusual political situations (*).

Relevant political institutions were largely unchanged from 2008; only two regimes exhibited notable changes. Malaysia, coded as internally competitive from 2005 through 2008 due to the lack of parties outside the regime front, saw the emergence of a new relatively powerful opposition grouping, the People's Alliance (PR), toward the end of 2008. By 2010, this coalition of three parties gained sufficient representation

[31]The effective executive of government may be chosen according to three methods: by direct election using popular vote or delegates (`exselec=1`), by indirect election through an elected assembly (`exselec=2`), or non-electorally (`exselec=3`). The latter is a residual category designed to capture regimes where the effective head is a military junta (e.g. Burma), a monarch (e.g. Jordan), or under a state of emergency such that normal executive selection methods have been suspended (e.g. Thailand 2006-2007). When `exselec` is coded as 3, this violates one of the criteria for external competition and the regime-year is considered to be internally competitive, regardless of the party variables.

[32]The three party variables collectively indicate whether parties exist that are both legal and genuinely oppositional. The first of these variables, `dejure`, is coded as 0 when parties are illegal, 1 when there is only a single legal party, and 2 when multiple parties are legally allowed. In practice, competitive parties may not exist even if technically legal (Cheibub et al 2009). Thus a `defacto` score of 0 indicates that no parties exist, 1 indicates there is a single party, and 2 indicates multiple parties exist. Finally, `defacto2` measures whether parties exist that genuinely challenge the incumbent: when 0, there are no parties; when 1, any extant party is part of the regime front; and 2 indicates the presence of parties outside the regime front. Only when a regime earns a coding of 2 on all three party variables does it qualify for the second criteria of external competition, that of genuine legal opposition parties.

Table 4: Regime Competition Type for 2010

Internally Competitive		**Externally Competitive**	
Bahrain	Burma	Afghanistan	Azerbaijan
China	Cuba	Bangladesh	Belarus
Eritrea	Ethiopia*	Egypt	Indonesia
Iran	Jordan	Kazakhstan*	Kyrgyzstan
Kuwait	Libya	Lebanon	Malaysia†
Morocco	North Korea	Nigeria	Pakistan
Oman	Qatar	Russia	Rwanda*
Saudi Arabia	Syria	Singapore	Sudan†
Turkmenistan	U.A.E.	Tajikistan	Thailand*
Uzbekistan	Vietnam	Tunisia	Uganda
		Venezuela	Yemen
		Zimbabwe	
20 regimes total		*23 regimes total*	

† denotes a change from 2008; * denotes an unusual political situation.

in parliament to end the ruling National Front's supermajority.[33] The Sudan also externalized competition for the year 2010 by holding its first multiparty elections for the presidency, a post occupied by longtime military dictator Omar al-Bashir, who resigned from the military to be an eligible candidate.[34]

There were also a few unusual cases: Kazakhstan, although scored as externally competitive, is notable for having almost no actual opposition party presence, especially by the year 2010.[35] This is similarly the case, although much less dramatically, in Rwanda.[36] Conversely, parties in Ethiopia have long participated in the front of the ruling Ethiopian People's Revolutionary Democratic Front; in 2010, however, a new opposition grouping, the Forum for Democratic Dialogue began to coalesce.[37] As

[33] "Malaysia." In *Political Handbook of the World 2011*, edited by Thomas C. Muller, William R. Overstreet, Judith F. Isacoff, and Tom Lansdorf, 882-90. Washington, DC: CQ Press, 2011.

[34] The April 2010 balloting resulted in al-Bashir's election against 11 challengers and was internationally criticized. "Sudan." In *Political Handbook of the World 2012*, edited by Tom Lansdorf, 1359-72. Washington, DC: CQ Press, 2012.

[35] "Freedom on the Net 2011." Freedom House. See also "Kazakhstan." In *Political Handbook of the World 2012*, edited by Tom Lansdorf, 743-49. Washington, DC: CQ Press, 2012.

[36] "Rwanda." In *Political Handbook of the World 2011*, edited by Thomas C. Muller, William R. Overstreet, Judith F. Isacoff, and Tom Lansdorf, 1192-200. Washington, DC: CQ Press, 2011.

[37] "Ethiopia." In *Political Handbook of the World 2012*, edited by Tom Lansdorf, 450-68. Washington, DC: CQ Press, 2012.

contemporary reports continued to agree that Ethiopia remains a "de-facto one-party state," Ethiopia's status as internally competitive was not changed.[38]

Thailand provides a final case worth additional comment: in the face of increasingly violent protests, the government declared a state of emergency in April 2010 which persisted for the rest of the year. As this did not interfere with the method of executive selection (general elections were not scheduled until 2011), Thailand retains a classification of externally competitive.[39]

Analysis

Whether regime competition type and Internet control type are empirically related (dependent) was calculated using cross-tabulation. Since the type of Internet control policies enacted in 2010 cannot plausibly be argued to cause the underlying structure of competition in that regime in 2010 (obviating endogeneity due to reverse causation), statistical dependence between these two variables may be interpreted as evidence of probable causation in the absence of a third common source.

The cross-tabulation of competitive institutions and type of Internet control is shown in Table 5. Subtotals for each are shown at the bottom and right. If countries are randomly sorted into these four cells by chance (i.e., if the two variables are not closely related), the roughly equal numbers of cases for each type of each variable means that all cells should have similar counts of country cases. In contrast, my argument asserts that all or almost all cases should fall in only two cells: either the top left, or the bottom right cells (H_6).

This is largely borne out by the data. With very few exceptions, internally competitive regimes employ block-type tactics, and externally competitive regimes employ skew-type tactics. The observed cell counts (shown in bold in Table 5) contrast

[38] "Index of Democracy 2010: Democracy in Retreat." Economist Intelligence Unit. 6 December 2010. Retrieved at `https://graphics.eiu.com`. p. 18.

[39] "Freedom on the Net 2011." Freedom House. See also "Thailand." In *Political Handbook of the World 2012*, edited by Tom Lansdorf, 1418-28. Washington, DC: CQ Press, 2012.

Table 5: Cross-Tabulation of Competitive Institutions and Internet Control Type

	Block-type Policies	Skew-type Policies	Total
Internally Competitive	*10.7* ; **19**	*9.3* ; **1**	20
Externally Competitive	*12.3* ; **4**	*10.7* ; **19**	23
Total	23	20	43

Expectation given statistical independence ; **Observed count**

sharply with the count expected given independence (shown in slanted typeface), a contrast which is highly statistically significant. Pearson's chi-squared test, designed to verify independence between variables, estimates that the likelihood of seeing such a distribution of cell counts if these variables were not, in fact, related is extraordinarily unlikely - less than 0.001% ($\chi^2 = 25.9, p = 0.0000004$).[40]

Overall, these two variables exhibit a very strong and highly statistically significant association. As a means of explaining variation in the dependent variable, regime type alone perfectly predicts the type of social media control in 88% of cases. With respect to assessing the correctness of my behavioral predictions, the policy choices of 95% of internally competitive regimes and 83% of externally competitive regimes were correctly predicted. The model is slightly more successful at predicting the behavior of internally competitive regimes but, as shown in Figure 6, the difference between the two is not meaningful.

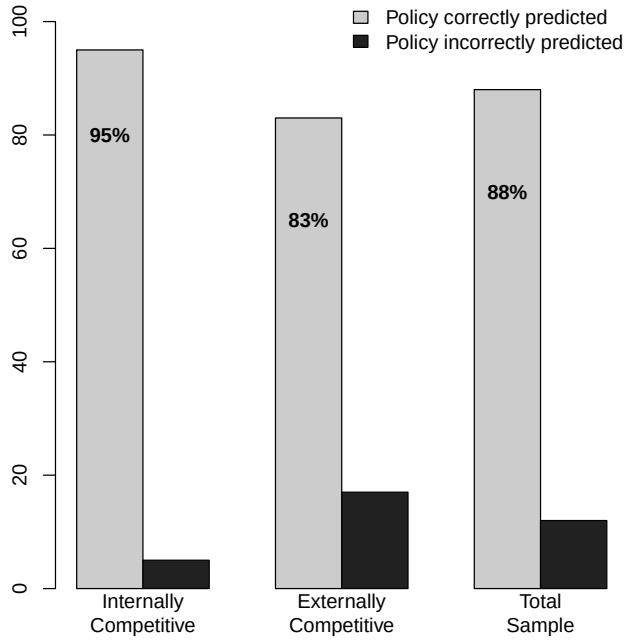
Exceptions and Robustness Checks

This section takes a closer look at the five countries not perfectly predicted as shown in Table 5: Kazakhstan, Thailand, Tunisia, and Yemen, which use block-type tactics despite being externally competitive, and Morocco, which uses skew-type tactics despite being internally competitive.

As already noted above, Kazakhstan's coding is perhaps misleading: technically

[40]Continuity correction is not necessary because the contingency table meets the assumption of adequate expected cell counts (all cells have an expected count over 5); regardless, including Yates' continuity correction does not meaningfully change the results ($\chi^2 = 22.9$; $p = 0.000002$).

Figure 6: Rate of Successful Policy Prediction by Competition Type



externally competitive, yet the regime faced almost no actual opposition for the year 2010. Thus despite its competitive institutions, the de facto political environment may more closely resemble that of an internally competitive regime.

Thailand also provides an unusual case, partly for being a monarchy but particularly because of the state of emergency which began April 7th, 2010 and lasted through the rest of that year. During this time the regime exhibited changed political conditions much more closely corresponding to an internally competitive regime, and because elections were not scheduled until the next year, these changes were not reflected as institutional changes for its 2010 coding. The evidence moreover indicates the regime pursued block-type tactics more after the April declaration than before it.

The Ben Ali regime in Tunisia struggled against mass political unrest for much of 2010, ultimately losing control after the self-immolation of a street vendor in December launched a new protest cascade. Interestingly, the Tunisian regime began to engage in both block- and skew-type tactics over the course of 2010, despite the evidence that the each detracts from the effectiveness of the other, perhaps as a

desperate but unsuccessful bid to retain power.

Conversely, Morocco applies skew-type tactics despite being internally competitive. Morocco's designation as internally-competitive is perhaps unusual, as in all ways save the effective head being a monarch the regime resembles an externally-competitive regime.

Yemen was the only country for whom definitive classification one way or the other was impossible (described further in Appendix B); its classification here as employing block-type policy is not confident. Yemen thus provides a different kind of exception as the only country not to follow a consistent or rational pattern of Internet control. This indeterminism could be related to the ongoing security situation in Yemen, which in 2010 balanced a fragile ceasefire between Huthi rebels in the north with a simmering secessionist rebellion in the south, amid ongoing problems with piracy, al-Qaida, and kidnappings.

It is lastly informative that three of these five exceptions (Tunisia, Yemen, and Morocco), along with Belarus (correctly predicted in the bottom right quadrant), represent the least-confident policy classifications in the sample. For these four countries, an ultimate control type was determined by agreement among only three out of the five possible indicators. The rest of the sample demonstrated unanimous or near-unanimous agreement. However classifying on the basis of 3/5 agreement hinges critically upon every indicator being correctly coded. Therefore the predictions for these four regimes are the least confident of the sample, and if they are exceptions to an overall pattern that is less surprising.

As a robustness check, the above analysis was redone using data that was intentionally altered in several ways to contradict the hypotheses. Four cases that performed as expected but whose social media classifications were based on less data were removed (Afghanistan, Lebanon, Singapore, and Tajikistan), and Belarus was assigned the opposite social media category to allow for the possibility of a miscoding

on any one of the five indicators. Additionally, all 6 of the regimes marked for any reason († or *) in Table 4 were re-classified to the opposite regime type, but only if they were otherwise correctly predicted: Ethiopia was reassigned externally competitive, while Malaysia, Rwanda, and the Sudan were classified as internally competitive. The five initial exceptions were left as-is, although the justification for reclassifying Rwanda (too little opposition strength) should logically also reclassify Kazakhstan (even less opposition strength).

This reassignment brings the total number of exceptions up to 10, and only 70% of the reduced sample is correctly predicted as opposed to 88%. Even with the increased number of exceptions, analysis still demonstrates overwhelming evidence against the null hypothesis of independence between the independent and dependent variables ($\chi^2 = 8.8$; $p = 0.003$). We may thus confidently conclude that the strong and statistically significant association between these two variables is not driven by cases potentially mis-assigned due to relatively less or misleading data. Overall, this empirical analysis provides very strong support for hypothesis H_6.

Conclusion

Our emerging research on social media and politics in non-democracies implies that all autocrats will try to censor social media where they can, yet we have not seen this in practice. We instead observe high variation in how autocrats handle this new technology. The analysis in this article provides an answer to this puzzle of Internet censorship.

I have argued that social media's political impact depends on risk factors that make a single protest more likely to spread, and that a dictator's Internet control is a predictable response to structural, strategic, and institutional features. The extensiveness of that control varies with a dictator's local structural and strategic

risk of protest cascades, whereas the type implemented is determined by the regime's competitive institutions. The model and supporting evidence show that it makes sense that non-democracies seem to approach the universal risks of social media in such varied ways.

Given that social media are not likely to disappear, and non-democracies exhibit some of the fastest rates of Internet adoption, an understanding of how and why these regimes interfere with the Internet has immediate and continuing relevance. An absence of block-type interference with social media - what I have called public censorship - does not, moreover, indicate that information control is not happening, or that the regime is liberalizing. Such regimes are merely adapting existing private censorship to the unusual publicly-production Internet content.

This research also suggests that enthusiasm that social media will break down cascade barriers, and thus empower citizens to oust unpopular rulers, is only partially substantiated. While the geographical barriers to protest cascades are indeed eroded by social media, societal barriers continue to exert their influence. A fractured population offline is likely to be a fractured population online. For regimes with highly heterogeneous populations, the advent of the Internet is not likely to create any popular revolutions.

Appendices

A. Sample Nations

Table 6: Countries Included in the Extent Sample ($n = 51$)

Afghanistan	Algeria	Azerbaijan	Bahrain	Bangladesh
Belarus	Burma	China	Cuba	Egypt
Eritrea	Ethiopia	Gambia	Guinea	Indonesia
Iran	Iraq	Jordan	Kazakhstan	Kenya
Kuwait	Kyrgyzstan	Lebanon	Libya	Malaysia
Moldova	Morocco	Nepal	Nigeria	North Korea
Oman	Pakistan	Qatar	Russia	Rwanda
Saudi Arabia	Singapore	South Africa	Sudan	Syria
Tajikistan	Thailand	Tunisia	Turkmenistan	UAE
Uganda	Uzbekistan	Venezuela	Vietnam	Yemen
Zimbabwe				

Table 7: Countries Included in the Type Sample ($n = 43$)

Afghanistan	Azerbaijan	Bahrain	Bangladesh	Belarus
Burma	China	Cuba	Egypt	Eritrea
Ethiopia	Indonesia	Iran	Jordan	Kazakhstan
Kuwait	Kyrgyzstan	Lebanon	Libya	Malaysia
Morocco	Nigeria	North Korea	Oman	Pakistan
Qatar	Russia	Rwanda	Saudi Arabia	Singapore
Sudan	Syria	Tajikistan	Thailand	Tunisia
Turkmenistan	UAE	Uganda	Uzbekistan	Venezuela
Vietnam	Yemen	Zimbabwe		

B. Measuring Social Media Control

Conducting tests of the above predictions requires an accurate measurement of social media policy for contemporary non-democracies, including cross-nationally comparable values for both the extent and the type of control in place. However, while a number of organizations rate governments on the nature of their social media control, existing scores possess certain features that make them unsuited to the testing my predictions require. These scores, and especially their accompanying reports, nevertheless provide valuable data with which the two dimensions of social media policy were measured.

Data Sources for Measuring Social Media Policy

Three organizations in particular provide systematic information about social media policy in non-democracies: the OpenNet Initiative (ONI), Reporters Sans Frontières (RSF), and Freedom House (FH).[41] The ONI provides detailed and systematic country profiles of Internet tampering for 60 key countries in various years from 2007-2013; ONI research projects also include various reports on these and additional countries.[42]

RSF similarly provides regional and country-specific reports, in addition to their annual "Enemies of the Internet" listing with information about Internet censorship and surveillance in countries where they are most prevalent. The regular "Freedom on the Net" report published by FH also provides a wealth of information on Internet practices around the world through systematic country profiles.

Both ONI and FH additionally score countries on the basis of their Internet policies. With respect to political control, the ONI categorizes countries as exerting "pervasive", "substantial", "selective", "suspected", or no filtering.[43] While useful

[41]Research from each organizations is available at `opennet.net/`, `rsf.org/internet.html`, and `http://freedomhouse.org/`, respectively.

[42]Many of these country profiles are also published in three successive volumes published by the ONI: *Access Denied* (2008), *Access Controlled* (2010), and *Access Contested* (2012).

[43]ONI also categorizes nations on two other dimensions, Social (pertaining to culturally sensitive

for at-a-glance impressions of how countries compare, these categories are too broad to employ for close analysis: many countries with substantively different control apparata have identical scores (such that, for example, China, UAE, Vietnam, and North Korea all employ "pervasive" political control).[44]

FH also uses broad categories to characterize Internet control across nations ("Unfree", "Partly Free", "Free"), based on numerical scores. Each score is a sum of three subtotals pertaining to access obstacles (infrastructural, economic, and governmental), content limitations (censorship and content diversity), and user rights violations (restrictions, surveillance, and punishments).

While each of these categories provides valuable information, these scores are designed to reflect the overall environment faced by Internet users - not the specific features of that environment that are directly manipulated by a media-controlling regime. Accordingly, intentional and government-imposed obstacles to Internet access of interest to this project, such as the ban on private browsing in Cuba, are measured concurrently with structural or economic difficulties like the lack of a national fiberoptic cable connection. The additive nature of the scores moreover means that direct regime interventions (e.g., shutting down regime-critical blogs) are equated with less relevant or structural features (e.g., low diversity of local-language blogs due to developmental factors). A developing country with almost no governmental interference, such as India, thus earns very similar scores to the wealthier but less Internet-tolerant regime of Jordan.[45]

In both cases, the publishing organization is concerned with the broad picture of Internet control in a country, meaning that while much qualitative information is given on specific points of control extent and control type, the scores and categories conflate

topics such as gay rights, pornography, and religious), and Security (pertaining to ongoing conflicts or military information), both of which provide additional information.

[44]The exact criteria by which countries are categorized is moreover not explained, leaving vague why, e.g., Yemen earns a "substantial" designation while neighboring Qatar is only "selective".

[45]Freedom House, "Freedom on the Net," 2011.

extent-relevant information (how much is blocked) with type-relevant information (how is the blocking implemented).

To ensure validity of my dependent variables, Internet control extensiveness and type, I therefore developed new measures for each using the highly detailed qualitative information available from the ONI, RSF, and FH. The country profiles and reports published by each organization are largely mutually corroborative; where information available was inconclusive or conflicting, additional organizations,[46] news articles, and local research were used to supplement these sources.

Extent of Media Control: Measuring a Latent Variable

Using these sources, 51 non-democracies were measured on a number of different questions related to the extent of their control.[47] These questions were designed to reveal how *extensively* the regime attempts to bias internet content, such as:

- How many and how commonly do regime-critical websites experience access difficulties, whether due to blacklisting, DDoS attacks, or periodic blocking?
- Do bloggers ever report receiving repercussions for publishing regime-critical content?
- How much information on controversial news stories is available?
- Is Internet access legally available to the public?

The prose-form answers to these questions were then used to score each country on 20 dichotomous variables such that a 1 corresponds to increased social media control, and a 0 to less.[48]

[46] In particular, I drew upon reports published by the Committee to Protect Journalists, `www.cpj.org`; the International Partnership for Human Rights Coalition, `www.iphronline.org`; the Human Rights Watch (HRW), `www.hrw.org`; and IFEX, a network of 88 international organizations that work to promote and protect free expression `www.ifex.org/censorship`.

[47] African non-democracies are underrepresented in the resulting sample, primarily because exceptionally low rates of Internet use make nations less interesting targets for organizations and reseachers.

[48] This data format is adapted after the NELDA dataset developed by Hyde and Marinov (2012).

These dichotomous variables provided the raw data to generate scores for control extent through a Bayesian measurement model using item response theory (IRT). With respect to political research, measurement models may be best-known for their application to scoring politicians on ideal points (see especially Clinton, Jackman, and Rivers 2001 and Martin and Quinn 2002). IRT models are especially well-suited to situations in which the quantity of interest cannot be directly measured, but is expressed through various observable quantities (such as votes or other political behavior). This latent variable is then estimated from these observable data Y.

Using the two-parameter IRT model, the extent of Internet control was estimated according to the equation

$$Y_{i,j} \sim Bern[logit^{-1}(\alpha_i \theta_j - \beta_i + \epsilon_{i,j})]$$

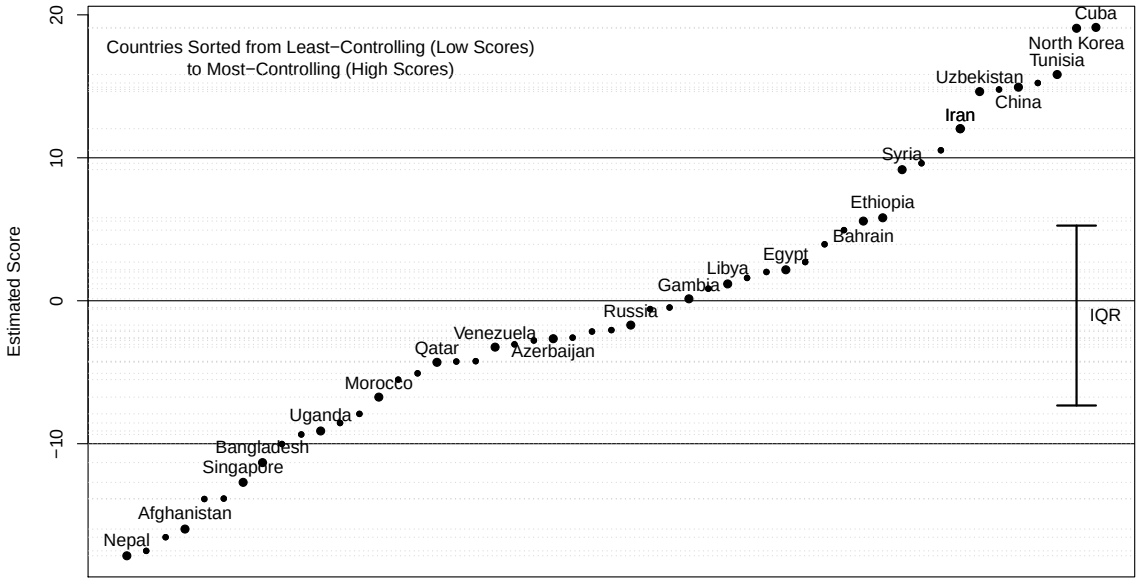
such that $Y_{i,j}$ represents country j's response to the ith item, with θ_j as the ultimate quantity of interest: that country's latent Internet control extent.[49] The ideal points θ are assumed to be normally distributed around a mean of 0 with a standard deviation of 10.

Using software for the R statistical environment,[50] quantitative measures on the extent of Internet control were estimated for 51 non-democracies. These scores are sorted visually in Figure 7 from least extensive (lower scores) to most extensive (higher scores). Half of the sample estimates are labeled by country to indicate general placements without overly crowding the visual; labelled countries are denoted with a larger bullet. As expected, regimes that are well-known for their extensive social media policies, such as China, Uzbekistan, Tunisia, and Iran, fall in the very top of the range, directly below those countries that have closed Internet access almost entirely. At the other end of the scale, the non-democratic regimes of Nepal, Afghanistan, and

[49] Martin and Quinn 2007.

[50] Martin and Quinn 2007, Jackman 2007, R Development Core Team 2007.

Figure 7: Bayesian Posterior Estimates for Intensity of Internet Control (2010)



Singapore are known to engage in much lower levels of Internet control.

The estimated θ_j range from roughly -20 to $+20$ with a mean close to zero (-0.6). The somewhat lower median (-2.1) indicates that this mean was adjusted upwards to compensate for certain high-scorers, especially Cuba and North Korea. Roughly half of the sample is has an estimated score between -7.3 and $+5.3$; this range is shown alongside the scores in Figure 7.

Each of the observable items Y_i are assumed to vary in terms of 'difficulty', denoted by β_i, and 'discrimination', α_i. The concept of difficulty refers to how easily sample subjects score 'correctly' (1) on a given item, which in this case refers to how likely countries are to show positive evidence for a given item of Internet control. An affirmative response to whether a country frequently and commonly employs intermittent blocking of webpages would thus be more 'difficult' than a similar response to whether a country has ever employed any intermittent blocking.

According to the estimation, the most "difficult" item in the dataset is whether a regime disallows public use of the Internet. Only very few regimes in the full sample,

Cuba and North Korea, exhibit this tactic of Internet control and score positively on this item. The item with the lowest value on the difficulty parameter is whether or not the country had earned a FH designation of "Partly Free" for Internet access.

In turn, discrimination refers how clearly a given item distinguishes among regimes on the latent variable. Indicators that are highly discriminatory are more successful at separating out regimes by the extensiveness of their Internet control, while low discrimination items will yield less information. The two-parameter IRT model allows this to vary by item to provide better model fit while imposing fewer assumptions on the data.

In the model, the most highly "discriminatory" item is whether a regime was classified as employing 'substantial' filtering by the ONI. How a regime scored on this item provided the most information about the ultimate estimated extent of Internet control, which makes sense as this item tends to split the sample into higher and lower levels of filtering. The item scoring the lowest on discrimination, providing the least information about the extent of Internet control, is whether or not the regime was reported to harass bloggers, whether legally or extralegally. The fact that a regime harasses online activists does not alone reveal as much information, one way or the other, about its extensiveness of Internet control.

The Choice of Computational Estimation I chose a latent-variable model to measure the first dependent variable because it provides several key advantages over any alternative method.

First and most importantly, the measurement model produces highly valid scores of Internet control extent which would be very challenging to create by noncomputational methods. Manual alternatives - additive schemes such as those used by FH, categorization on the basis of necessary/ sufficient qualities, or even the family resemblance coding I use to measure type - are ill-suited to this measurement. As discussed

above, additive codings force unequal items to have equal impact, resulting in unintuitive scores. All criteria used to determine a non-additive categorization would require choosing some qualities over others in advance, and relying on these for regime placement. However, which qualities were chosen would greatly impact the resulting scores, without necessarily conferring greater or less validity to them. Unlike the second dependent variable, control type, there are few clear either-or variables that distinctly point in *either* one direction (block-control) *or* the other (skew-control): the extent of control is rather a gradient, and one to which all variables should meaningfully contribute in some way.

The computational method sidesteps these difficulties with its flexibility, allowing each question to have more or less importance depending on the underlying patterns of control, estimating which questions are most linked to one another. The result is a set of scores that intuitively make sense: North Korea and Cuba, both of which use domestic intranets, are right at the top, while Nepal and South Africa, both of which just dabble in control, come in at the bottom. The rest line up roughly as might be expected. Importantly, creating this index is not dependent on prior assumptions about which qualities should drive the end result, versus which are less important.

Similarly, this method is empirically appealing in that its flexibility does not compromise its consistency. All regimes for which data is available are subjected to the same model simultaneously. To achieve the same level of consistency non-computationally would require rigid criteria, with very clear rules about how all borderline cases or exceptions would be handled. While such criteria should evolve naturally from theory, my argument on control extent does not necessarily prioritize some dimensions over others. Any specific criteria selected would be less theoretically defensible, but for the sake of consistency would nevertheless need be rigidly applied. Latent variable measurement captures the idea of Internet control extent described by my theory, while retaining flexibility and consistency.

Finally, this method is reliable. Researchers interested in following up on this project can very easily replicate this coding, and using the same data will always produce essentially the same scores. This is particularly reassuring as the underlying data (the dichotomous indicators) are in little dispute among different observers - reports from journalists, politicians, organizations and even bloggers themselves are strongly corroborative about what the value for each variable should be.

Type of Media Control: Regime Classifications

Non-democracies were also measured on questions designed to reveal the nature of Internet control. These questions focused not on the *extent* of control, but on the *means* by which regimes pursue their control such as:

- What does a user see when a page has been blocked?
- If they are ever targeted for blocking, are official websites of primary opposition political paries blocked consistently, or intermittently?
- Are all internet cafes required to collect personally identifying information from all customers as a condition of use?
- What kinds of client activity do Internet cafe operators monitor, and how transparent is this monitoring?

Many of the publications used as source material analyze regime policy with the explicit or implicit assumption that all control policies will always aspire to be opaque. Accordingly, reports frequently described Internet control practices as either successfully subtle, or failing subtlety (in which case possible reasons for this failure were speculated). In the face of incontrovertible evidence of regime disregard for the transparency of their manipulation, reports typically expressed surprise.

In contrast with this expectation, I argue that certain regimes do not require their control implementation to appear opaque; in fact, for some regimes transparency will

simplify their task of media control. This is because while censorship is the ultimate goal, self-censorship is the most efficient means to accomplish it. Reports were thus read carefully for evidence that subtlety failures may not, as was often assumed by the writer, have been unintentional.

To classify regimes on their type of Internet control, I adapted five indicators of control type from Table 1, each designed to have an either/ or structure. I then used the qualitative evidence from the sources described above to categorize each regime as pursuing tactics that are consistent with either public censorship or skew censorship, for each indicator. These tactics are referred to as block-type tactics or skew-type tactics.

Regimes were classified on which of these types of Internet control they employ according to a "family resemblance" conceptualization of overlapping similarity (Wittgenstein 2009 [1953]), such that a regime's classification is the one indicated by most or all, but not necessarily all, indicators. This strategy was chosen as it offers more flexibility than a deterministic conceptualization requiring specific characteristics based on necessity/ sufficiency. This flexibility allows for some natural variation among regimes within a given control type category, without loss of reliability or validity.

For each of these five dichotomous items, the first tactic corresponds to a block-type control policy, while the second tactic instead indicates a skew-type policy:

Method of website targeting: permanent, straight block *vs.* Intermittent and inconsistent loss of access

Nature of the blockpage served on targeted websitse: 403 error/ user made aware of regime interference *vs.* 404 error/ technical problems cited

Self-censorship: pervasive among ordinary users *vs.* minimally present, or only described with respect to journalists and news organizations

Repercussions for online political activity: pursued directly and legally, offend-

ers charged *vs.* informal, indirect repercussions, offenders detained but not charged, or charged for irrelevant offenses

Perception of anonymity: policies that damage *vs.* policies that sustain the illusion of anonymity

Definitive information was not always available for all items to determine a country's overall type. In particular, information regarding the nature of served blockpages was rarely specified except in ONI country profiles; where the ONI did not clarify the nature of the blockpage, this item was often unanswerable. This affected just under one-third of the dataset (specifically, 28% of the sample was missing a score for this item). Typically, precise information on the other four items existed and agreed on tactic type, such that an overall classification could still be determined.[51] The other four indicators had little missingness; their coverage ranges from $94 - 100\%$.

Additionally, with respect to some items occasionally regimes were variously reported to have engaged in both types of tactics; this happened most often with the method of website targeting and the nature of repercussions. In such cases, a type was assigned only if different research agreed the regime clearly pursued one tactic type over the other and employed it in almost all relevant cases. For example, Jordan has been known to engage in both types of content removal, but relies much more heavily on informal, intermittent interference than actual permanent blocking. The government does officially block one one website (the US-based *Arab Times*), but much more common is the practice of informally and quietly asking site hosters by phone to remove offending content (Freedom House 2011, 208). Such requests are not official communiques, and may be channeled through party members, other journalists, or even ordinary users, corresponding closely with skew-type Internet control.

On the other hand, Thailand relies much more heavily on permanent blocklists, although the regime has occasionally been described as also using some informal,

[51] Exceptions are discussed in further detail below.

momentary blocking (OpenNet Institute 2012). Close to 75,000 websites have been blocked since 2007, all of them permanently shut-down and officially acknowledged as such. The vast majority of these correspond to content critical of the monarchy (Freedom House 2011, 314). Since the April 7, 2010 state of emergency declaration, authorities have had the ability to immediately and indefinitely block access to any website with politically sensitive information. Users can even view the full blocklist, or submit requests for websites to be added or removed. This form of website blocking clearly corresponds with block-type control.

If insufficient detail existed to clarify one type over the other, that item was scored as "vague" and did not count towards any family resemblance agreement in either direction.[52]

Overall, the indicator with the lowest level of reliability was the method of website targeting. This is perhaps unsurprising as several regimes that pursue consistently block-type tactics, both on website targeting and otherwise, also seem to have engaged in skew-type tactics when targeting websites. This indicator was nonetheless highly reliable: clear dependence upon one tactic over the other was evident in 91% of the sample. All indicators demonstrated 90% reliability or above, research providing clear scores in all but a handful of cases for each. When present, "vague" scores did not contribute to classification: Classification was assigned only if clear data for several other items was available and agreed on control type.

For a family resemblance classification based on dichotomous indicators, statistically most countries are expected to fall in the middle of the spectrum. In other words, given five binary indicators, most of the time only three out of five will match.[53] In this sample, however, almost all regimes (91%) exhibited strong evidence of the same

[52]This was coded as distinct from "missing" data because the lack of data is not equivalent to available data that yields conflicting information. Without data, a given indicator could be block-based, or it could be skew-based; conflicting information suggests that it may be neither.

[53]In multiple simulated datasets of 100,000 theoretical countries, 3/5 agreement occurred in around 63% of all cases. The remainder were almost entirely cases of 'almost-all' agreement, or 4/5; only 6% of theoretical countries showed perfect agreement.

tactic type, consistent across all or nearly all items, indicating that the isolated instances of "vague" or misleading information above did not have a substantial impact on the overall dataset.[54]

The vast majority of regimes therefore fell on either one end or the other of the spectrum, as employing consistently block-type tactics or consistently skew-type tactics. Only three cases of the total sample (Belarus, Morocco, and Tunisia) lay in the middle, such that their resulting classifications were based on agreement across only three of five indicators. To account for the possibility that miscoding one indicator would result in an erroneous classification and bias results, empirical analysis was repeated with these three regimes assigned the control type contraindicated by my theory.

In only one case (Yemen) was definitive classification impossible due to conflicting evidence in favor of both types. For the purposes of providing a stronger test for the theory, Yemen was therefore assumed to employ the opposite type of Internet control than proposed.

As the type of Internet control was measured from far fewer indicators than the extent of control, missingness in any given indicator was less easily overcome. Eight countries were ultimately dropped from the sample because good data could be found on only two or fewer of the five total indicators; unsurprisingly, African countries featured disproportionately among these less-researched countries.

The resulting sample includes 43 regimes for 2010, which are listed in Table 7 in the chapter appendix. Of these regimes, 23 (53%) were classified as using public censorship to control the Internet based on employing predominantly block-type tactics. The remaining 20 (47%) were classified as using skew and skew-type tactics. If those countries with less clear classifications (Belarus, Morocco, Tunisia, and Yemen) are excluded, 21 (51%) use block-type tactics and 18 (49%) skew-type tactics.

[54] 51% of the total sample demonstrated perfect agreement.

Country	frontrunning Group/ Person in 2010
Afghanistan	None
Algeria	None
Azerbaijan	None
Bahrain	al-Wifaq (INAS)
Bangladesh	None
Belarus	Belarusan Popular Front “Revival” (Narodni Front Belarusi “Adradzhennie”)
Burma	Aung San Suu Kyi; National League for Democracy
China	None
Cuba	Martha Beatriz Roque Cabello; Las Damas de Blanco
Egypt	The Muslim Brotherhood
Eritrea	Eritrean Liberation Front (ELF)
Ethiopia	FORUM (“Medrek”)
Gambia	Ousainu Darboe/ United Democratic Party (UDP)
Guinea	None
Indonesia	None
Iran	Mir Hosein Musavi; Green Path of Hope “The Green movement”
Iraq	None
Jordan	Islamic Action FrontIAF (Jabhat al-Amal al-Islami)
Kazakhstan	National Social Democratic Party-Azat
Kenya	None
Kuwait	NDF/ NDA
Kyrgyzstan	None
Lebanon	None
Libya	National Front for the Salvation of Libya (NFSL)
Malaysia	People’s Alliance (Pakatan RakyatPR)
Moldova	None
Morocco	None
Nepal	None
Nigeria	Muhammadu Buhari; ANPP/Congress for Progressive Change
North Korea	None
Oman	None
Pakistan	None
Qatar	None
Russia	None
Rwanda	None
Saudi Arabia	None
Singapore	None
South Africa	None
Sudan	Sudanese People’s Liberation Movement/Army (SPLM/A)
Syria	Muslim Brotherhood (2010 sec gen Riyadh al- SHAQFA)
Tajikistan	None
Thailand	For Thais Party (Phak Puea ThaiPPT).
Tunisia	None
Turkmenistan	None
UAE	None
Uganda	Kizza Besigye; Forum for Democratic Change
Uzbekistan	Birlik Popular Movement Party (Birlik Xalq Harakati Partiyasi)
Venezuela	Democratic Unity Table (Mesa de la Unidad DemocrticaMUD)
Vietnam	Bloc 8406
Yemen	Joint Meeting Parties (JMP)
Zimbabwe	Morgan Tsvangirai; Movement for Democratic Change-Tsvangirai (MDC-T)

Table 8: (Appendix C) Frontrunner Status for All Sample Countries

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Opposition Strategy and Patterns of Protest in Non-Democracies

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Abstract

Do elections, scandals, and discontent lead to protest in non-democracies? This paper argues that mass protest patterns in non-democracies are instead driven by opposing organization strategy, and that the association seen between protest and elections is due to strategic choices by frontrunning groups. Interacted logistic regression analysis confirms that once the presence of a frontrunner is controlled for, elections have virtually no effect on mass protest.

Existing research has indicated the importance of focal points, especially national elections, for citizens in a non-democracy to overcome the collective action problems attending mass protest. Our understanding of this relationship is improved by considering the strategies of opposing organizations, which depend on those actors' traits. In particular, optimal protest strategy will be different for organizations who are clear "frontrunners" relative to the rest of the opposition.

This paper argues that the presence of an opposition frontrunner explains the association between national elections and mass protest. This is because only frontrunners are incentivized to attempt the sorts of high-linkage protests that can spread into protest cascades. The risks and uncertainty inherent in a cascade are less for fron-

trunners, while the potential benefits are substantially greater. When a frontrunner exists, that actor will take advantage of elections attempt protest cascades.

I test this assertion using a sample of 81 non-democracies from 1988 to 2011. National elections are used to proxy for the presence of a potential focal point, while mass protest events provide evidence of cascade attempts. I expect that countries holding elections should be more likely to experience mass protest when a frontrunner is present.

The models presented in this chapter support this contention, finding that whenever a frontrunner is present, cascade attempts are much more likely. Frontrunners increase the risk of mass protest, especially during election years. This analysis finds that elections themselves do not actually have an independent effect on mass protest, once the effect of frontrunners are accounted for. These results suggest that the established link between elections and protest in fact operates through the indirect mechanism of facilitating frontrunner emergence.

Protest Cascades

Opposing organizations are domestic civil society groups whose activities are not directly controlled by the regime, and who hold explicit goals of regime change.[1] Although these groups seek change in the status quo political system, characteristically they are fairly weak, lacking resources and political inclusion. Protest creates leverage for bargaining with powerholders because it imposes costs on incumbents (McAdam 1982): disrupting order, sending negative signals of government performance and

[1]This concept includes all political groups, including political parties both legal and banned. Groups that are created by the regime, but that nevertheless enjoy autonomy in their activities, are also considered opposing organizations if they seek regime change, as these groups can and sometimes do come to challenge the regime. By regime change, I mean a change in the structure of government, its principal incumbents, its extension of legal benefits, or its effective protections of civil rights.

legitimacy to important actors, and requiring security expenditure.[2]

Some protests can serve as a seed for a *cascade* of serial protests, which are rare but which impose exceptional costs on incumbents when they do happen (Hale 2013). Cascades occur when multiple urban areas, or the capital over an extended period of time, host protests which are linked by referencing a common idea and which specifically challenge incumbents or the structure of governance.

Cascades develop when a focal event in the presence of generalized discontent provides the necessary emotional momentum to activate protest linkages, resulting in the rapid spread of protest. The focal event, or discrete occurrence that triggers unusual anger in the population, is necessary to translate that existing discontent into targeted protest (Hardin 1995). As Kuran (1991) emphasizes, some catalytic event is required to overcome the problem of conditional support for mobilization.

Linkages, which are potential connections between one protest and existing pockets of discontent in the population, represent opportunities for a protest to spread and trigger more mobilization. Linkages are increased by using broad, ideological discourse, by recruiting participants from different sectors of society, and by increasing protest visibility. Visibility, which is a function of location and size, facilitates making connections between one protest and existing discontent elsewhere. Large protests, and protests in major cities, necessarily have higher linkages than small ones held further from public attention.

The Costs of Cascades

Cascades carry a complicated set of costs and benefits. Because of their extraordinarily high cost to regimes, they command a great deal of leverage and greatly

[2]Protest is defined as organized or spontaneous events of political mobilization against the status quo. The event component of my definition excludes quotidian forms of anti-status-quo mobilization such as donating to an opposition party, voting for a challenger, convincing friends to support an opposition party, or displaying campaign materials. These are all forms of anti-status-quo political participation.

increase the scope of potential changes that may realistically be demanded. These benefits are highly attractive for opposing organizations. However, cascades are also inherently destabilizing, and therefore costly for organizations. As noted above, violence, whether regime-orchestrated or spontaneous from the crowd, may disrupt business and damage property - including any owned by organizations. All participating groups must anticipate that the target regime will deploy heavy repression, which destroys organizational resources and networks.

Most importantly, cascades are unpredictable and can lead to almost any conclusion (Brownlee et al 2015): they may install a new unstable or unfriendly regime, as in Egypt 2011; they may degenerate into a destructive civil war, as in Syria 2011-12; or they may simply trigger heavy repression that punishes all civil society, as in Iran 2009-10. Even if incumbents yield, it can be difficult to predict who the new incumbents will be, and organizations too closely tied to former leaders may lose any influence and privileges they enjoyed (Przeworski 1991). If incumbents withstand replacement, all groups involved in the cascade will almost certainly face reprisals.

This means that the only instance in which an organization may have confidence that it will benefit from any cascade-induced change is when that group is a clear and obvious "frontrunner" among all potential challengers.

The Strategy of Cascades

Opposing organizations can initiate and guide protest cascades by making strategic choices about protest discourse, participants, and visibility.[3] However, because of the unpredictability of a cascade, doing so is only in the interest of certain groups, namely "frontrunning" opposition groups - individuals or organizations who enjoy a

[3]Even given favorable conditions, opposing organizations cannot simply create a cascade at will; the process entails some randomness and cannot be perfectly predicted by regimes or controlled by groups. A high-linkage protest over a focal event will not necessarily lead to a cascade of protest every time. However, both organizations and regimes know that such a protest substantially increases the likelihood that a cascade will occur, every time.

clear superiority in strength relative to the rest of the opposition.

A substantial part of a cascade's cost for invested groups derives from the uncertainty of outcome: even supposing regime change is effected, there is no guarantee the new government will be friendlier to an organization's goals. Prolonged uncertainty about the identity of the new incumbent while parties jockey for position is also damaging.

When an opposition frontrunner exists, that actor can be relatively confident that they would be the major beneficiary of any regime change. Even if the frontrunning organization anticipates damages from a period of instability, these risks of cascades are worth the potential benefits. Any incumbent replacement carries a fairly high likelihood of installing that organization in the executive branch and reaping the various policy and rent rewards entailed. In the event that the cascade does not effect regime change or deliver benefits, the costs of punishment to a frontrunner are also lower. Because of a frontrunner's relative position, repression is less likely to eliminate them entirely, and may even increase their legitimacy and visibility.

Thus the presence of a frontrunner should substantially increase a regime's vulnerability to protest cascades, and attempts at creating a cascade by holding a high-linkage protest around a focal event. In the event that a high-linkage protest begins spontaneously and spreads organically, frontrunning groups will bandwagon on the nascent cascade early and aggressively. Other organizations will rely upon more controllable and less risky small-scale protest to generate leverage over incumbents for their political goals. However they, too, may bandwagon on cascades, especially when the presence of a frontrunner decreases the uncertainty about post-cascade changes.

Implications

Because being a frontrunner can dramatically change a group's incentives to host cascade-likely protests, I first expect that the presence of a frontrunner increases the

likelihood of such protests, all else being equal.

H_a I expect a greater likelihood of cascade attempts in countries where a frontrunner is present than in those without frontrunning oppositions.

While years with a frontrunner should generally see more protest than years without one, frontrunning organizations should strategically focus their greatest efforts on potential focal events - i.e., national elections. The irregularities typical of non-democratic elections provide convenient focal events for groups looking to mobilize, which means that any organizations seeking cascades can make strategic use of them. Moreover, campaigns may confirm the frontrunner status of an opposition party or candidate. Frontrunner candidates have an incentive to attempt cascades, since they stand most clearly to benefit from any resulting political changes and may experience legitimacy and visibility bumps from direct repression responses by the regime.

H_b When a frontrunner is present during an election year, I expect a greater likelihood of cascade attempts than during elections when no frontrunner is present.

The literature on elections and protest - namely, that national elections offer a useful focal point for overcoming collective action problems - would suggest that mass protest will be more likely in election years than ordinary years, even without a frontrunner (Tucker 2007). Conversely, I would argue that when no frontrunner is present, the incentives for a cascade are greatly diminished. No single actor among opposing groups, campaigning or otherwise, can know that they would benefit even if the cascade resulted in direct political change. The temptation for any group to attempt a cascade is therefore low.

H_c I expect little or no increased probability of a cascade attempt in election years, relative to non-election years, when there are no frontrunners.

In short, I expect that organizations will strategically use elections as focal events for cascades if they are frontrunners, but not otherwise.

Data

To test these hypotheses, data was collected on all available non-democracies for the period from 1988 to 2011. The length of the panel, 24 years, was maximized subject to the available data.[4] To qualify for inclusion in the sample, a country must have a regime that:

1. is non-democratic by the criteria laid out by Cheibub et al (2010)
2. holds national elections at least occasionally, and
3. retains control over a majority of its national territory during a given year.

The first rule is designed to exclude democratic country-years, which fall outside the theoretical scope of my argument. The one exception to this condition is that years in which democratization occurs are also included in analysis. Cheibub et al (2010) assign the dichotomous coding of "democratic" for each country-year based on the political conditions extant on December 31st of that year; such country-years include many months of political activity under a non-democratic context that remains relevant to my argument. I thus include the observations of Kenya in 2002 and Kyrgyzstan in 2005, e.g., while excluding Kenya in 2003 and Kyrgyzstan in 2006.[5]

As my hypotheses compare outcomes among electoral and non-electoral years, the second criterion - that a country hold national elections at least occasionally - guarantees that the sample has the necessary variation. Considering that the electoral schedules of many non-democracies are highly irregular (e.g. Haiti) or subject to long

[4]This time period reflects all relevant non-democracies starting with the dramatic global political changes of 1988-1989; many former Soviet countries enter the sample in 1991.

[5]Occasionally a democratic transition is completed at the very beginning of a year, in which case that year is *not* included in the sample. Georgia in 2003-4 offers an example: November elections announcing the victory of incumbent Shevardnadze led to massive protests in favor of Saakashvili, widely believed to be the actual victor; the incumbent resigned in December, and new elections in early January led to Saakashvili's inauguration. According to these events, Georgia 2003 is coded as non-democratic and Georgia 2004 is coded as democratic, and the year of transition. The former year demonstrates clearly non-democratic political patterns and belongs in the sample, but it would not make sense to include the transition year of democratic politics as well.

interruptions (e.g. Liberia and Angola during periods of civil war), countries are included if they hold any national elections within the above time period. There is no expectation that the elections held meet any minimum standard of freedom or fairness, simply that they occur at the national level - providing domestic opposition forces with a national-level focal point. This rule excludes non-electoral countries like China and Libya, while including highly restrictive or irregular electoral non-democracies like Uzbekistan and the Sudan.

The third requirement, that of territorial control, is a pragmatic solution to the difficulty of assessing the relative political strengths of different opposing organizations during periods of intense civil war. As many countries experience long-running insurgencies that may be more or less intense in a given year, I chose the standard of whether the regime retains territorial control over most of the country to approximate whether some semblance of normal political activity, including opposition activity, can occur. Thus Afghanistan in the mid-1990s is excluded from the sample when the regime loses a majority of its territory to Taliban insurgents; normal political activity cannot be said to occur for the years 1995-7. On the other hand, Morocco's Western Sahara insurgency has not prevented regularized politics at the national level, and Morocco remains in the sample for the entire 24-year period. This rule takes maximum advantage of information from the many electoral non-democracies experiencing low-level civil wars, while eliminating those years in which information on opposition activity is unavailable, unreliable, or both.

These criteria produce a sample of 81 countries with a mean presence of 20 years, for a total of $1,593$ country-year observations. Almost half (37 countries, 46%) have complete coverage over the 24-year panel, while seven countries are available for a decade or less.[6] Countries dropped out of the panel due to democratization and civil war. Panel years typically have complete data for 65-70 countries (mean of 66); all

[6]These countries are Benin (5 years), Ghana (5 years), Madagascar (8 years), Malawi (7 years), Mali (5 years), Mongolia (3 years), and Nepal (8 years).

years have complete data for at least 62 countries.

Distinguishing Front-Running Organizations

The key independent variable, the presence or absence of a frontrunner among the opposition, was hand-coded. Using encyclopedic and periodical sources, I collected information on opposition activity for each country in the panel.[7] For each year, I looked for information on whether there was one group or individual that clearly offered the most obvious single point of political resistance to the incumbent regime. Such an actor would anticipate particular benefits from a protest cascade, and would thus have unique incentives to attempt one.

The criteria for a group or individual to be front-running has four components, individually necessary and jointly sufficient. It must be (1) a *political* actor, (2) in *opposition* to the incumbent, that constitutes (3) a *cohesive* unit with (4) clear superiority *relative* to the rest of the opposition (see Table 1). A frontrunner can be a group with stable or dynamic leadership, or a particularly high-profile individual who operates through different groups. Thus both the Communist Party of the Russian Federation, and Anwar Ibrahim who has been politically active with multiple parties in Malaysia, qualify as frontrunners for various years in their respective countries.

To determine the presence or absence of these four components, I looked for several types of evidence:

- Only one non-regime political actor is consistently mentioned in accounts of political activity
- One political actor is described as presenting the only viable challenge to the regime

[7] The sources most heavily relied upon were CPI's Political Handbook of the World, articles from the Associated Press, newspapers available through AllAfrica.com, Adam Carr's Electoral Archive, and the CIA World Factbook.

- In the event of an election, the voteshare of one non-regime political actor is larger, by a substantial margin, than the voteshares of every other non-regime actor (barring major boycotts)
- All prominent dissidents are associated with the same organization
- There is one actor who is most aggressively harassed by the government with law suits, house arrest, and extrajudicial means
- Areas described as highly supportive of a popular opposition actor experience special harassment or fraud during elections or other focal events

In looking for this evidence, a conservative approach was employed: unless the *clear superiority* of one group or individual was fairly obvious, a coding of "no frontrunner" was assigned.

Each piece of evidence was considered in concert to construct a more complete picture of the relative ranking of opposition actors. For instance, huge voteshare leads are a highly informative indicator of a likely frontrunner, but does not mean that no frontrunner is present. That information needs to be considered in conjunction with other available information. A genuinely frontrunning political party may boycott an election but nevertheless remain on the ballot and garner votes comparable to a much less popular party, or a frontrunning group with geographically concentrated support may see particularly high levels of electoral fraud in their strongholds. Neither situation is unusual in the sample, and either can result in a frontrunning group earning a reported voteshare not dramatically above that of other opposition actors. In reviewing this and other evidence, no single detail could alone determine a coding, each being compared with all other available information to ensure more accuracy.

It should be emphasized that these characteristics are all designed to distinguish whether there is one actor who possesses a clear superiority in political strength, *relative to other elements of the opposition*. In other words, a group may be quite weak relative to the incumbent, but if it offers the only meaningful political resistance

	Special Cases		
Key Criteria: Clear superiority of one cohesive political opposition actor, relative to other opposition actors	**Civil War** Exclusively political means for exclusively political goals?	**Coalitions** Credible agreement over future rival benefits?	**Political Changes** One group still clearly dominant, and still in opposition?
Observations With Frontrunners:			
Vietnam 2009 Bloc 8406 offers weak oppositon, but is cohesive, political, and much stronger than rest of the opposition **Cuba 2007** Martha Roque is the central figure of political opposition	**Sudan 2010** The politically dominant SPLM operates as an independent unit from the military SPLA	**Kenya 2002** NARC has a power-sharing MoU in the event of electoral victory	**Algeria 1992** FIS remains in opposition to the new military government post-coup **Zimbabwe 2008** MDC continues to oppose the incumbent ZANU-PF
Observations Without Frontrunners:			
Morocco 1997 Koutla, Wifaq, and centrist bloc have roughly equal strength **Burkina Faso 2003** Herman Yaméogo's dispute with the leading ADF/RDA leads to rival UNDD formation	**Afghanistan 1988** The mujaheddin demonstrate their political opposition through a renewed military offensive	**Tajikistan 1999** The Consultative Council cooperates only towards a shared non-rival goal	**Guinea-Bissau 2003** PAIGC supports the new military government post-coup **Cambodia 2000** Sam Rainsy's dominance erodes to Prince Ranariddh
In the absence of clear supporting evidence, frontrunner status was not accorded.			

Table 1: Criteria and Examples for Designating Frontrunner Observations

it would qualify as a frontrunner. For instance, Bloc 8406, an illegal organization of pro-democracy dissidents in Vietnam in the late 2000s, presents the only opposition to the ruling party that is consistently mentioned in multiple accounts, is described as the only resistance to the regime, and claims the membership of the most prominent political opponents jailed by the regime (Banks et al 2015). By these qualities, Bloc 8406 qualifies as a frontrunner, and Vietnam is coded as having a frontrunner during the panel years in which this group is active (2009-2011), despite the fact that it does not represent a strong, well-established organization, and in fact wields little power relative to the regime.

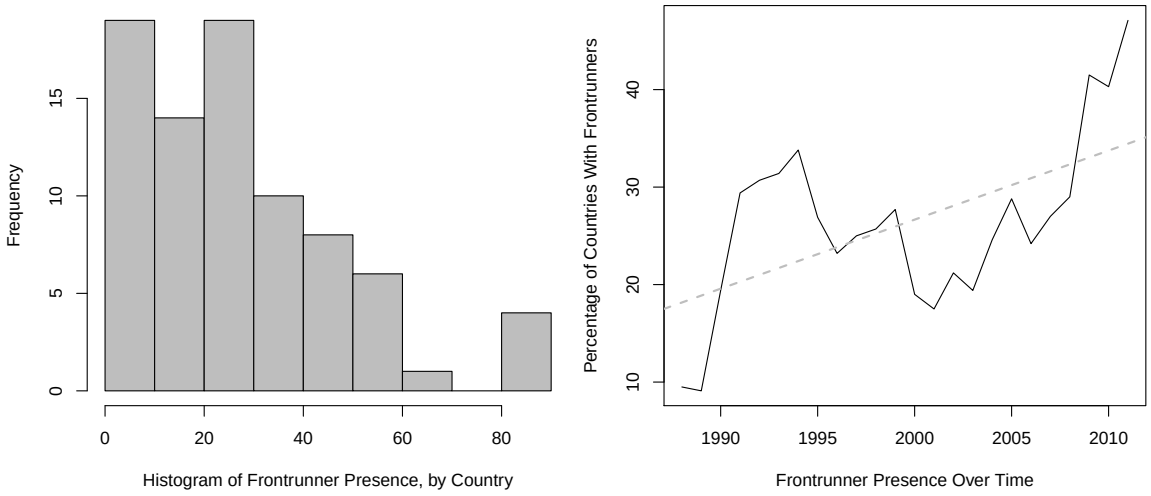
Conversely, there may be several large groups contending for political power against the regime; if they are roughly matched in political strength, there is no frontrunner. Absent a clear superiority, no single opposition actor, even if well-known and well-organized, could attempt a protest cascade with easy confidence of commanding any subsequent political benefits. An example of this can be seen in Morocco, where 1997 elections revealed roughly equal political strength between the Koutla, Wifaq, and a centrist bloc, each of which won roughly one-third of legislative seats.

Similarly, despite its prohibition on formal political parties, Kuwait in the mid-2000s possesses a number of political 'groupings' which, although not calling for the explicit removal of the royal family, do challenge the regime on points of policy and basic law. However none of the most prominent of these -neither the Ummah Party, the Islamic Constitutional Movement, the National Democratic Forum, nor the Kuwaiti Democratic Forum - exhibit the *clear* dominance associated with frontrunner status as described above.

These rules, as well as example cases, are summarized in Table 1. The Appendix includes a more detailed discussion on how frontrunners were coded in the special cases of ongoing insurgencies, electoral coalitions, and transfers of power.

Roughly a quarter (26.4%) of the country-years in the sample are coded as "fron-

Figure 1: Frontrunner Presence



trunner years' due to the presence a group meeting the criteria for frontrunner status. Most countries (66, 81.5%) have a frontrunner for at least a few years. No country has a frontrunner for the entire panel, although two (Russia and Myanmar) have frontrunners for over 85% of the panel (see Figure 1, left). On average, a given country has a frontrunner for 26.9% of the years that it appears in the sample.[8]

Although there is not a great difference in frontrunner presence by year, the percentage of countries with a frontrunner in a given year has steadily trended upwards over the last two decades (see Figure 1, right). I return to this phenomenon at the end of the chapter. In the average year, 26.3% of countries have a frontrunner. Most years demonstrate roughly this proportion of frontrunners, with a minimum of about 10% (1989) and a maximum of 47% (2011).

Election Versus Non-Election Years

The second key independent variable is whether a given observation represents a national election year. This is taken from the National Elections Across Democracy

[8]The slight difference with the overall sample average (26.4%) is an artifact of varying panel lengths among countries.

and Autocracy (NELDA) data set (Hyde and Marinov 2012). As this data set ends in 2010, the incidence of national-level elections for the year 2011 (and January 2012: see below) was extended using CPI's Political Handbook of the World (2013) and Adam Carr's Electoral Archive.

NELDA includes highly specific information on each electoral 'event', with legislative and executive elections, and subsequent rounds of either, recorded as separate events. Since my argument focuses on the presence or absence of a national election in a given year, this information was collapsed into a dummy variable representing whether any national election event occurred in that country-year (1) or not (0). This includes executive and legislative elections, as well as follow-up rounds continued from the year prior, and first rounds of elections that would be completed the following year.

My argument imposes no requirement regarding the minimum legitimacy or fairness of elections; on the contrary, the sample excludes democracies based on a definition that depends on legitimate elections. The electoral events included here are accordingly expected to be somewhat or wholly illegitimate and unfair. This means that even if the electoral results were stalled, criticized, canceled, or ignored, the event is still considered an election for that country-year. As long as the national election event is actually held, it provides the crucial focal opportunity for elements of the opposition to attempt a cascade, and is included in the dummy variable.

Elections are predicted to have a temporal effect on protest: both the weeks leading up to polling (during which candidates campaign or boycott), and the weeks afterwards (during which results are announced and validated) provide extant frontrunners with focal point material.

In most cases, elections take place sufficiently before or after the start of the calendar year that the associated data point fully captures this entire election "season." Each observation in the data frame pertains to events between January 1st and

Table 2: Cross-Tabulation of the Independent Variables

	Frontrunners		
Elections	*Absent*	*Present*	
No Election Events	**897** (56%)	**267** (17%)	1164 (73%)
Election Years	**275** (17%)	**154** (10%)	429 (27%)
	1172 (74%)	421 (26%)	1153 (100%)

December 31st of one year, and for most cases, this includes a month-long window before, and month-long window after, any electoral event.

However, for 53 observations with electoral events in January or December (3.3% of the sample), the theorized protest bump may materialize only, or additionally, in the year before or after.[9] To allow for this possibility, I created an additional variable to indicate proximate focal events, flagging otherwise non-electoral years that conclude just before (for January elections) or begin just after (for December elections) a national electoral event. Data analysis was conducted both on the standard sample, and on another that considered these 53 flagged observations as election years.

Of the 1,593 country-year observations, 429 are election years (26.9% of the sample, see Table 2); this total rises to 482 when counting proximate elections (30.3%).

Dependent Variable: Cascade Attempts via Mass Protest

The dependent variable, attempts to incite a protest cascade, is proxied with a measure of mass protest as recorded by the international press. While the strategic intention of a protest - i.e., whether it is begun in pursuit of a cascade - cannot be directly measured, using foreign records ensures that only those protests that have high visibility (and thus high linkages) will be captured in the data. Specifically, foreign observors are most likely to notice large protests, especially those in major cities. This provides a good indication that the events recorded represent cascade

[9]There are more than 53 country-years that have January or December election events, but only 53 in which the relevant year before or after is coded (perhaps misleadingly, for the purposes of this argument) a non-electoral year.

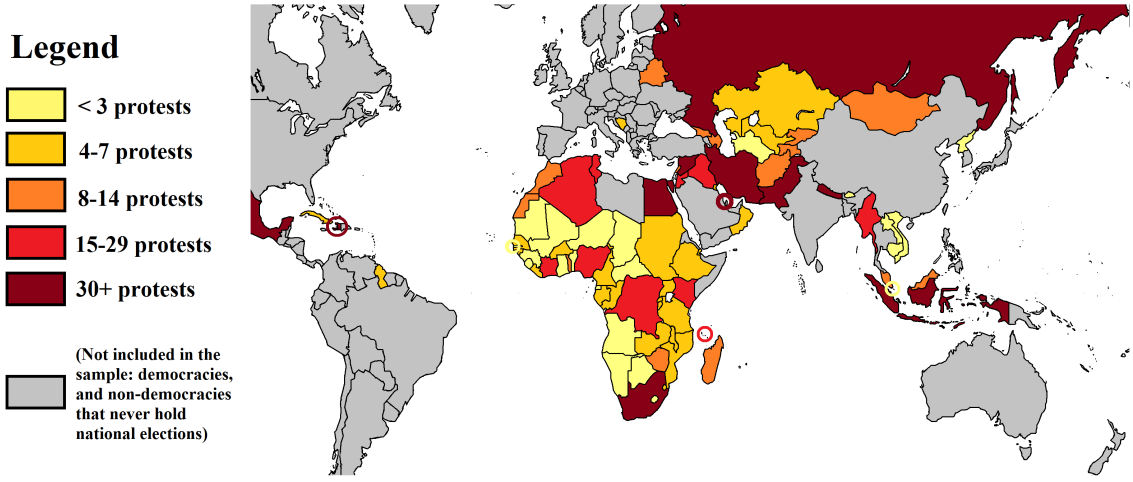
attempts, as visibility is a key ingredient for instigating a cascade.

Data on mass protest is taken from the Cross-National Time Series (CNTS) Data Archive (Banks and Wilson 2013), whose `domestic8` variable records the frequency of any and all mass protest events reported internationally for a given country-year. While the CNTS offers excellent cross-national and cross-temporal coverage for the sample described above, there is a subtle bias on the quality of coverage depending on the geopolitical importance of a nation. As shown in Figure 2, countries of strategic relevance to the United States - such as Mexico, Haiti, and Egypt - are likely coded by a more sensitive process than those with less immediate relevance, like Namibia or Malawi. While CNTS records protest counts as high as 74 (for Syria in 2011), countries of less international stature are consistently unlikely to show any years with multiple protests, and generally exhibit more zero years than geopolitically critical nations. A particularly revealing example is Afghanistan, which has zero counts for every single panel year until 2001, and protest counts of 1-3 almost every year thereafter. While mass protest may have genuinely increased after the U.S.-led invasion, and throughout the war against the Taliban, it also seems likely that these events focused much more international attention on domestic Afghan political affairs (including protest).

Extending this pattern, African nations in particular are less likely to report more than 1 or 2 protests in a given year than other countries in the sample (see Figure 2). As African nations represent a huge portion of the sample (46 nations total, 57%) a consistent, patterned divergence in data on Africa is not easily ignored as random noise, or only affecting to a few isolated cases.

While this pattern could theoretically be explained as true - e.g., a country's relevance to the United States may have a stimulating effect on domestic protest activity, resulting in genuinely greater levels of protest - it seems much more likely that the international press rationally pays the closest attention to nations occupying

Figure 2: Geographic Distribution of CNTS Protest Reporting for Sample

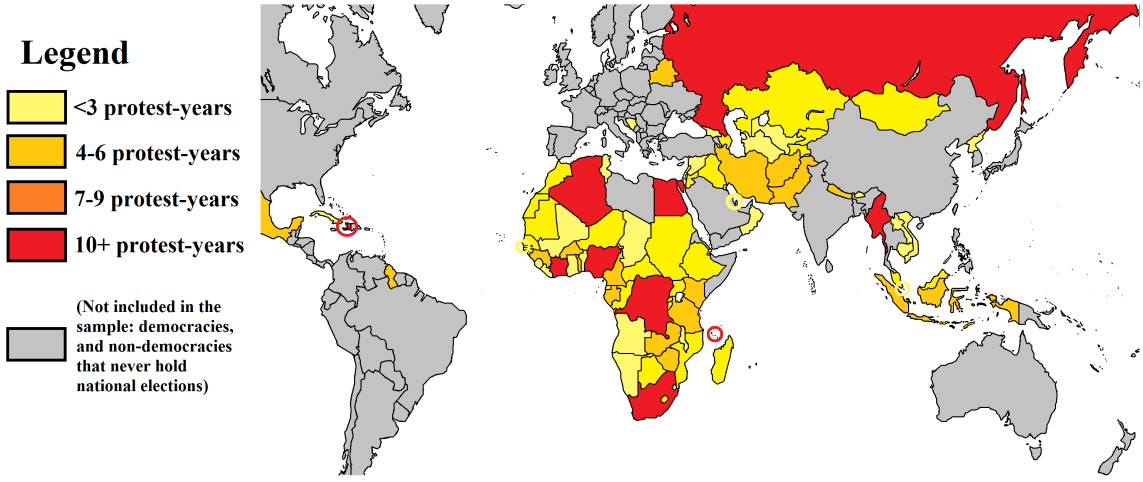


a large role on the world stage, and much less attention to smaller, less-developed, less internationally-involved nations. This scenario would inevitably result in more information about protests in some countries than others, even assuming protest activity to be roughly equal across all. Data is still available for nations in the latter category, but is almost certainly more accurate in a dichotomous sense ("Was there mass protest this year") than in a quantitative sense ("Exactly how many mass protest events occurred this year").

I corrected for this sensitivity bias in two ways. First, I reduced the level of measurement of the mass protest variable from a count to a dichotomous indicator. While this entails a loss of information, the result is a substantial lessening of the data-sensitivity bias just described. By using a less-sensitive indicator of protest, the sample countries are placed on a more equal footing that is independent of geopolitical status.

This transformation has the additional benefit of sidestepping an empirical difficulty associated with the count structure of the data: as with most count protest data, the original CNTS variable is extremely right-skewed with pronounced overdispersion (mean = 6.96, variance = 0.57). Working with a heavily overdispersed variable as the

Figure 3: Geographic Distribution of Supplemented Protest Reporting in Sample

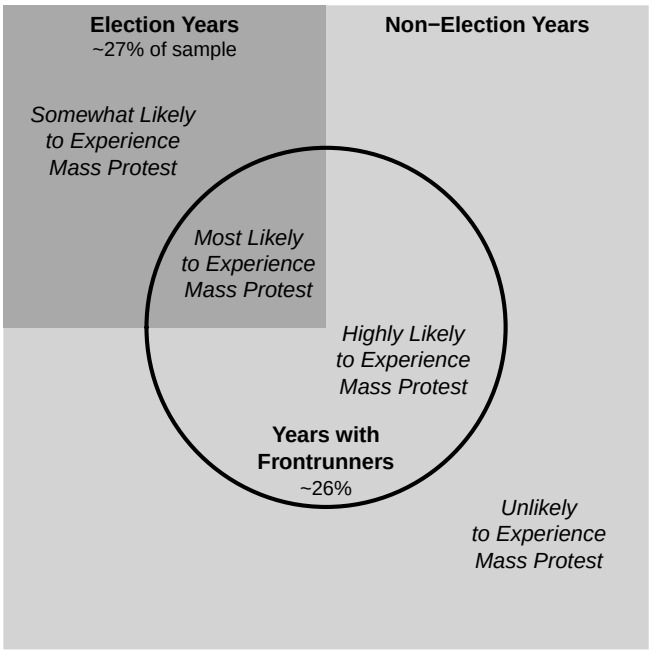


regressand typically requires the use of a zero-inflated (ZI) model, despite the lack of any theoretical justification in this case for the dual process envisioned by ZI models.

To correct for remaining protest sensitivity bias, evident in the unusually high number of zeroes in non-strategic nations, the transformed dummy variable was supplemented when available information indicated that a large protest had been omitted. In the event of large protests reported for a country-year by the Political Handbook of the World, but not reflected by CNTS, this information was added to the relevant country-year observation. This resulted in minor additions to the variable for observations that appear to have been mis-coded, and tends to equalize the chances of every internationally-reported protest, regardless of geopolitics, to enter the dataset.

The adjusted dichotomous variable demonstrates a more even spread of protest globally; the largest countries continue to record the most years of protest, but smaller and less internationally prominent countries appear more regularly relative to countries with similar populations (Figure 3). In total, 406 country-years demonstrate evidence of internationally-recognized mass protest, while the remaining 1,187 lack this level of activity. This corresponds to a 25.5% incidence of mass protest in the data set.

Figure 4: Expected Likelihood of Mass Protest, Based on Elections and Frontrunners



Model Selection

I expect that the dummy variable for mass protest, representing cascade attempts, is the result of strategic opposition behavior. According to my argument, this variable should be strongly influenced by the two independent variables, frontrunners and elections. The existence of a frontrunner should increase the chances that a cascade attempt happens, *particularly* in the presence of a potential focal point like a national election event.

I argue additionally that in predicting the likelihood of mass protest in a given country-year, simply having a frontrunner is a more powerful predictor than simply having an election. Nevertheless, I expect to see that, all else equal, years with elections are more likely to exhibit a mass protest than those without. Thus mass protest is to be most expected in those country-years where a frontrunner is present *and* has a focal point opportunity in the form of an election, and least expected in

Table 3: Estimated Coefficients for Interactive Logit Model

	Standard Sample		Proximate Elections	
	β	*Std. error*	β	*Std. error*
Elections	0.03	(0.23)	0.11	(0.22)
Frontrunners	2.80	(0.17)	2.73	(0.17)
Elections x Frontrunners	0.53	(0.32)	0.63	(0.31)
Intercept	-2.21	(0.11)	-2.23	(0.11)
N	*1583*		*1583*	

years where neither is present (see Figure 4). The observations that are second most likely to experience protest are non-electoral years with frontrunners, followed by electoral years where no frontrunner is present.

These expectations are tested on the data described above using a logistic regression model to calculate a probability for the dependent variable, which is expected to explain the variance in the observed values of 0 or 1. Since the effect of having a frontrunner is argued to be much more powerful in the shadow of a focal event, and elections are predicted to be more important for protest when a frontrunner is present, these two variables are interacted for the following model:

$$logit(Protest) = \beta_0 + \beta_E Election + \beta_F Frontrunner + \beta_{FE} Election * Frontrunner$$

The estimated coefficients are then used to calculate relative likelihoods of protest, given the four possible scenarios.

Analysis

This interacted logit model was run for two nearly identical samples, one that considers years with proximate elections as election years as described above ("Proximate Elections"), and one that does not incorporate this modification ("Standard Sample"). The coefficients for both models are reported in Table 3, although these

Table 4: Predicted Likelihood of a Cascade Attempt in Varying Conditions

	Standard Sample	*Proximate Elections*
Non-election-years without Frontrunners	9.9%	9.7%
Election-years without Frontrunners	10.2%	10.7%
Non-election-years *with* Frontrunners	64.4%	62.3%
Election-years *with* Frontrunners	76.0%	77.6%

values are not immediately interpretable. The quantity of interest, the comparative likelihoods of cascade attempts under different conditions, is calculated from these coefficients according to the equation

$$P(MassProtest|Conditions) = e^{\beta_C}/(1 + e^{\beta_C})$$

in which β_C depends on the presence or absence of a frontrunner and election. For each of these four possibilities, β_C comprises a subset of the interacted coefficients reported in Table 3:

When there is no electoral event or frontrunner, $\beta_C = \beta_0$

For years with an electoral event but no frontrunner, $\beta_C = \beta_0 + \beta_E$

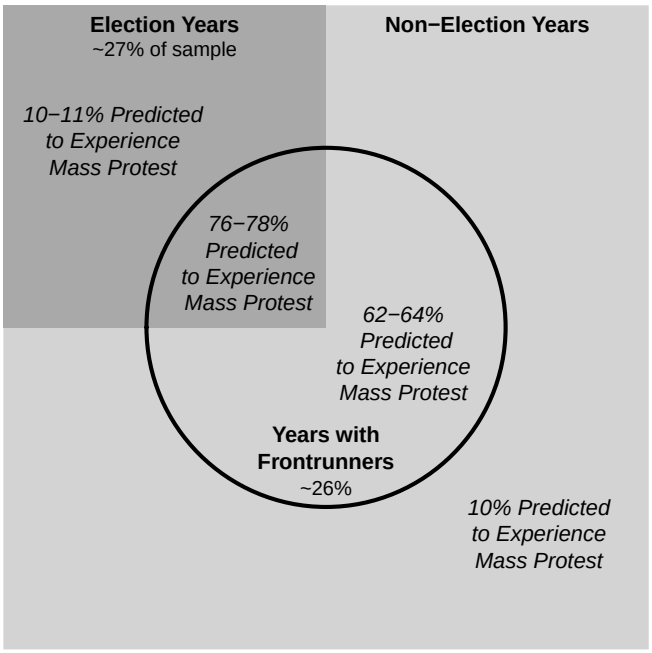
For years with a frontrunner but no electoral event, $\beta_C = \beta_0 + \beta_F$

When there is a frontrunner and an electoral event, $\beta_C = \beta_0 + \beta_E + \beta_F + \beta_{EF}$

The likelihoods calculated for these four scenarios are reported in Table 4, for both the standard sample (first column) and the sample including proximate years as election years (second column). The results for the two samples are functionally equivalent. Figure 6 illustrates these predicted probabilities, given the presence or absence of a frontrunner in an election or non-election year. In all cases, the model predicts dramatic departure from the baseline *a priori* likelihood of a cascade attempt (26.4%), all else being equal.

As expected from the theory outlined above (see Figure 5), mass protest is much more likely when a frontrunner is present, *ceteris paribus*: the presence of a frontrun-

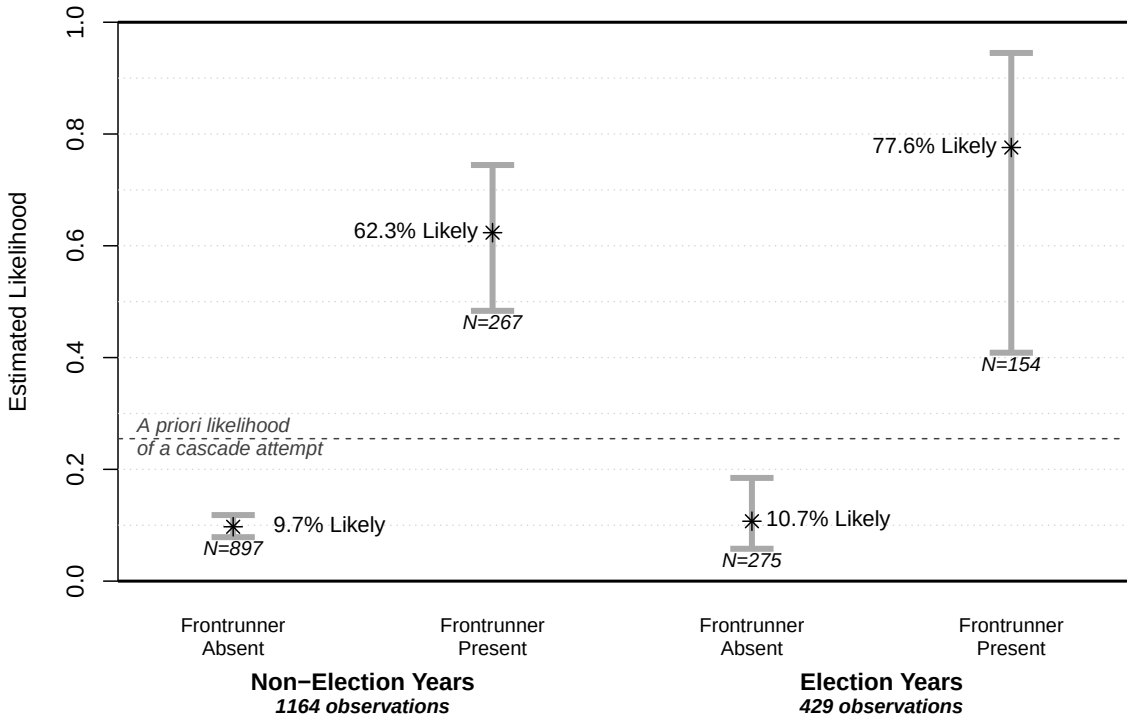
Figure 5: Predicted Probability of Mass Protest, Based on Elections and Frontrunners



ner increases the prior likelihood of mass protest by over 50%. More importantly, the increased likelihood of mass protest associated with a frontrunner group is particularly dramatic during an election year: simply adding a frontrunner to the electoral mix increases the likelihood of mass protest by over 65%. The vast majority (78%) of election years with frontrunners present are predicted to experience at least one mass protest event, even though only about a quarter of the data set have protest.

These likelihoods offer support for the claims made above, that frontrunners enjoy greater benefits and fewer risks from otherwise risky mass protest and should thus pursue that route much more than other groups. Moreover, in hosting mass protest events frontrunners should especially take advantage of focal event opportunities, like national elections, whenever possible. Given the existence of a frontrunner, mass protest is over 15% more likely in election years than non-election years, although the uncertainty on the smaller number of observations that fall into this category prevents assigning significance.

Figure 6: Confidence Intervals for the Predicted Probability of a Cascade Attempt



As suggested by the hypotheses above, the protest-increasing effect of an election disappears when no frontrunner is present. For countries and years that do not have frontrunners, the expected likelihood of mass protest is about 10%, a figure that changes little depending on whether there is an election or not. Elections are associated with an increase of less than 1% using either sample; this tiny increase is not statistically or substantively significant (see Figure 6). In other words, the protest-promoting effect of elections is wholly driven by frontrunners - and will only emerge if one is present.

These likelihoods correctly predict the dependent variable in 84.4% of all cases (see Table 5). This is an extraordinarily high rate of success for such a parsimonious model - knowing only whether there is an election and a frontrunner yields accurate predictions about whether there will be a cascade attempt, most of the time. An additional measure of goodness of fit adjusted for successful predictions by chance

Table 5: Model Success at Individual Case Prediction

Cases With No Protest		Cases With Protest	
Correctly Predicted	*Type I Error*	*Correctly Predicted*	*Type II Error*
1,055	132	289	117
Proportion of No-Protest Cases ($N = 1187$)		*Proportion of Protest Cases* ($N = 406$)	
88.9%	11.1%	**71.2**%	28.8%
Proportion of the full sample ($N = 1583$)			
66.2%	8.3%	**18.2**%	7.3%
Overall success rate: **84.4**%; 15.6% *incorrectly predicted.*			

confirms that 38.7% of cases are successfully predicted over what chance would indicate (the null expectation being that few or no additional cases will correctly be predicted).[10]. Type I errors (false positive, predicting protest when there is none) and Type II errors (false negative, missing protest) are roughly equally infrequent at 7-8%.

Parsing Out The Effects of Elections Versus Frontrunners

This evidence offers new intuition on the mechanism behind the link between elections and protest. Perhaps surprisingly given the literature on protest and elections, these results find no evidence for a direct link. However, elections and frontrunners are themselves linked, meaning that the mechanism between elections and frontrunners is likely more complex. This evidence suggests that the effect of elections with respect to protest behavior is in fact indirect, operating through the mechanism of frontrunner-emergence.

[10]Goodness of fit may be indicated by the measure $r = C/N$, in which C is the number of cases correctly predicted by the model and N is the total number of cases ($C = 1344$, $N = 1593$). The more conservative adjusted measure is calculated as $r_{adj} = (C - f)/(N - f)$, in which f is the frequency of the dependent variable mode, 0 ($f = 1187$).

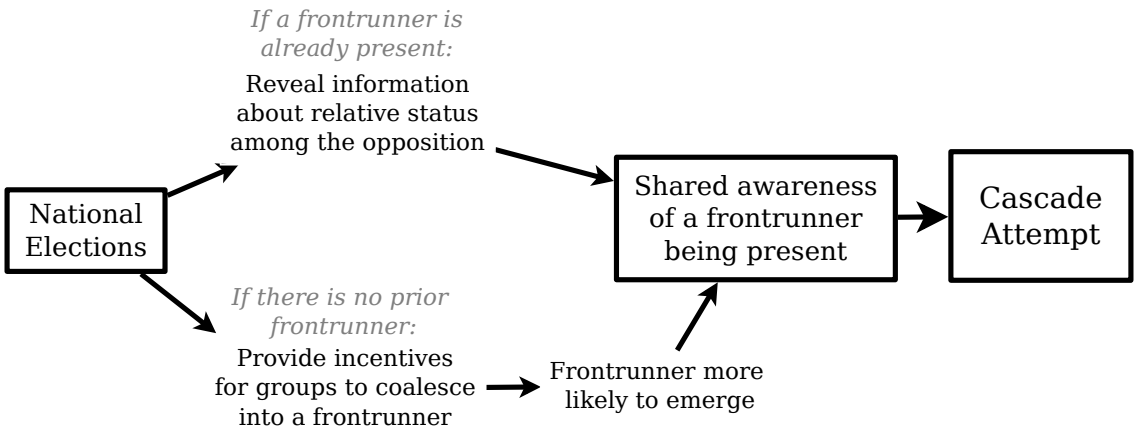
The data demonstrate that frontrunners are more likely in election years. In an off-year, there is a 22.9% chance of a frontrunner, but election years are 36.1% likely to have frontrunners. This difference is both significant and substantively meaningful: frontrunners are an relevant force only once in a given five year period between elections, but play a role in over a third of all elections.

This association indicates that having an election tends to facilitate the emergence of a frontrunning group or individual. It is, in theory, possible that the causality runs in the other direction, i.e. that frontrunners lead to election years, perhaps because they can more effectively demand elections. However the costs of holding an election with a frontrunner present are so much greater than the cost of an election without one, that any increase in domestic pressure for elections (due to a frontrunner) faces increased incumbent resistance to elections (because of that frontrunner). The two countervailing forces mean that while a frontrunner may occasionally successfully demand new elections, and an incumbent may successfully cancel them in the face of frontrunner threat, a *consistent* frontrunner effect on election incidence is unlikely. Moreover, the majority of electoral events in the sample are held either exactly or roughly accordingly to a previously determined schedule, offering only limited flexibility in calling for (or cancelling) elections.

The link between elections and frontrunners is therefore almost certainly that the former contribute causally to the latter. Theoretically and empirically, this makes sense. Frontrunners need to know, with some confidence, they are in fact frontrunning among the opposition. Similarly, other groups need to know if there is a flagbearer in their midst who can reliably coordinate and bargain before they join a risky cascade. However, the informational environment of non-democracies is typically unreliable and low-quality.

The virtue of elections as an informational device has been well established by the literature on authoritarian elections (see, for example, Magaloni 2006, Landry 2008, or

Figure 7: Mechanism by which Elections Lead to Protest



Blaydes 2011). Such an informational device is invaluable for confirming the presence of a frontrunner, which needs to be obvious, and creating shared awareness of that status among that actor, the incumbent, and the rest of the weaker opposition. Pre-electoral campaigns and post-electoral voteshares, even if biased, provide information locally that helps create this shared awareness. Electoral information confirming or discounting who among the opposition is really a frontrunner provides especially important information to local actors under changing political conditions.

Elections also facilitate the emergence of frontrunners directly, by providing incentives for opposing organizations of roughly equal strength to join forces (see Figure 7). In the frequently "winner-take-all" structure of elections, the most valuable benefits are only available to those who collect a minimum threshold of voter support. This creates strong incentives for sufficiently similar actors and groups to combine their groups. Simply agreeing to support one another, as very frequently happens, is not, however, a credible indication of future power-sharing. As discussed above, strong opposition actors created by pre-electoral coalitions are effectively frontrunners only if their components have made costly commitments to sharing future rival benefits.

The actual effect of elections on mass protest, therefore, is entirely indirect. Be-

cause they create conditions conducive to the emergence of a frontrunning actor who will anticipate fewer risks and greater benefits from a transformative protest cascade, and because they provide information about relative strengths, elections are likely to be associated with greater protest. The ultimate cause, however, is whether or not a frontrunner is present: elections have little or no independent effect once the presence or absence of frontrunners is accounted for. Moreover, frontrunners that emerge independently of elections consistently have a strong effect on mass protest, as confirmed by the model results in Tables 3-4 and Figure 6. A frontrunner emerging by itself increases the likelihood of a mass protest event that year from quite unlikely (10%) to probable (78%).

Could Protests Create Frontrunners?

As a robustness check, I address the possibility of endogeneity in the form of reverse causality. It seems possible that sufficiently large protest could be a catalyst for the formation of a frontrunning group or individual, as in the case of a previously ordinary group propelled to greater national significance over protest-associated events. Large and internationally recognized protests that occur for reasons other than frontrunner strategy may promote the coalescence of multiple oppositional groups into one large clear frontrunner. If so, the very large effect seen in this data would not be exclusively due to the strategic protest choices of frontrunning groups as I claim.

To address the possibility that this theoretical pathway is driving the results above, I employed a two-stage least-squares (2SLS) approach as a robustness check. I used the presence of a politically active former ruling party to instrument for the potentially endogenous independent variable, frontrunners. To be effective, an instrument must be a significant and strong predictor of the endogenous independent variable, but have no independent effect on, and be wholly exogenous to, the dependent variable (Cameron and Trivedi 2005). Whether a former ruling party exists and is still

politically active roughly meets these criteria: this variable has a weak correlation with the potentially endogenous independent variable (presence of a frontrunner), but no other theoretical or empirical connection to the dependent variable.

A former ruling party is a natural candidate for a frontrunning group. Such a group is well-positioned to become a frontrunner due to having a previously existing institutional apparatus and support network. Even if highly unpopular, former ruling parties nevertheless retain high name recognition and do not therefore have to overcome the obstacle of obscurity faced by a group starting from scratch. Former ruling parties are moreover able to claim actual experience in power, and inevitably present a natural alternative to the incumbent when the new incumbent runs into trouble.

The presence of a former ruling party is clearly exogenous to rest of the system: whether protest happens in a given year cannot "cause" a former ruling party to emerge through any plausible mechanism. Nor can elections cause a former ruling party to emerge. Former ruling parties are also not linked with causing protest after their fall from power by any separate mechanism. The only means by which these variables are theoretically linked is through the mechanism that the ruling party behaves as, or promotes the emergence of, a frontrunner opposition group (which in turn foments protest).

This instrument is, however, a very slow-moving variable, and for most countries it is perfectly stationary over the full sample.[11] This lack of temporal variation on former ruling parties complicates application to panel data.

To accomodate stationarity, two different years with high data availability, 1993 and 2010, were chosen to offer a scaled-down version of the full sample upon which to test for reverse causality using 2SLS. These two years combined have data for 75 out of the 81 countries (93%), of which 57 countries appear in both years. As these years are at opposite ends of the sample, values for the instrument are sufficiently different

[11] This is true for almost all of Africa and the Commonwealth of Independent States.

Table 6: Coefficients for the Abbreviated Sample (1993 and 2010 Only)

	Standard Model		2SLS	
	β	*Std. error*	β	*Std. error*
Elections	-0.83	(1.10)	0.16	(0.52)
Frontrunners	2.27	(0.56)	2.15	(0.68)
Elections x Frontrunners	1.77	(1.28)	-0.90	(1.17)
Intercept	-2.11	(0.40)	-0.38	(0.20)
N	*131*		*131*	

that stationarity is not an issue (correlated at $r = 0.55$).

I first repeated the original analysis on this scaled-down sample to verify that it replicates those findings (Table 6, left column). With less than 10% of the data in the full sample, the coefficients yielded from repeating the analysis are much more uncertain. The same patterns are, however, present: countries without frontrunners are not expected to witness much protest, whether during election years or otherwise ($5-10\%$ likelihood of mass protest). The emergence of a frotnrunner in a non-election year increases the likelihood of mass protest by over 40%, and the emergence of a frontrunner in an election year causes it to jump almost 70%: 75% of such years will see mass protest. We may therefore expect that if these results are robust to instrumenting, the effect seen in the larger sample enjoys similar robustness.

Table 6, right column, reports the results of the 2SLS model on the 1993/2010 sample. Again, the reduced sample size increases uncertainty about the predicted effects, but the instrumented predictions bear out the same expectation that frontrunners are associated with $30-45\%$ more protest when they are present, whether or not there is a concurrent election (see Table 7). Elections do not make a significant difference in either case. While the confidence intervals for predictions of the four categories overlap in some areas, the predicted increase in protest likelihood due to frontrunners is significant at 95% confidence.

The smaller sample size ($N = 131$) limits the specificity of inferences that may be

Table 7: Predicted Likelihood of a Cascade Attempt, 1993 & 2010 Sample

	Original Model	*2SLS Instrumented*
Non-election-years without Frontrunners	10.8%	40.6%
Election-years without Frontrunners	5.0%	44.5%
Non-election-years *with* Frontrunners	57.0%	85.5%
Election-years *with* Frontrunners	75.0%	73.7%

drawn from this robustness check; instrumenting generally entails a loss of efficiency for the sake of consistency (Newey 1987, Antonakis et al 2010). However the main effect seen above and predicted by my argument, of the centrality of frontrunners to cascade attempts, remains supported. This offers evidence that the more confident results above are not simply an artifact of reverse causality.

Conclusion

The results of the analysis in this chapter have provocative implications for both non-democratic incumbents and the researchers who study their tenure. From the perspective of a ruler seeking to minimize costly cascade attempts, elections are nowhere near as dangerous as certain highly publicized instances would seem to suggest - Zimbabwe in 2008, Moldova and Iran in 2009 offering some vivid examples from the sample. The protest danger of elections is only indirect, and operates exclusively through the mechanism of a frontrunner among the opposition.

This relationship is so pronounced that if an incumbent isn't facing a frontrunning group, elections make virtually *no difference* in whether they can expect a cascade attempt that year. In any given year, any cascade attempt is fairly unlikely - roughly 10% - unless a frontrunner emerges.

Frontrunners make the possibility of holding an election much more dangerous. Having a frontrunner means that, in a given year, the regime can expect a cascade attempt more often than not. Adding an election to that year bumps that likelihood

upwards by an additional $10 - 15\%$. For autocrats facing frontrunning opposition groups, elections just make a bad situation worse.

This does not mean that elections are risk-free for incumbents without frontrunning opposition groups. If this were true, we should expect elections to happen much more frequently among non-frontrunner country-years. However national elections have their own effect on frontrunners. They provide the information necessary for the larger opposition to identify whether a frontrunner exists, which directly affects the protesting strategies of all groups. Without elections to deliver this information about relative strengths, opposition groups face the poor information environment attending less-free media.

Given the strength of this relationship, an additional pattern borne out by the data is both explicable and suggestive. As shown in the right side of Figure 1, the percentage of countries who have a clear frontrunner has tended to increase over time, especially over the last decade. Increased use of national multiparty elections and improved access to new media sources mean that opposition groups have better information about their relative positions than formerly. While they may still be powerless relative to the incumbent, frontrunners can use this increased information to update about their likely costs and benefits in attempting a protest cascade. It makes sense that members of the opposition will increasingly coordinate their efforts towards behaving as a frontrunner in an effort to capture protest gains.

These results confirm that when it comes to high-cost cascade attempts, the key variable is an opposition frontrunner. For the protest-wary incumbent, elections are risky because they provide a dangerous combination of ingredients: the information necessary for a frontrunner to confirm relative status, incentives for non-frontrunners to coalesce into a frontrunner, *and* a convenient focal point opportunity for an emerging frontrunner to launch a cascade attempt.

Appendix

Coding Frontrunners In Special Circumstances: Insurgencies, Electoral Coalitions, and Transfers of Power

Insurgent Groups With respect to countries experiencing some level of civil war, powerful insurgent groups cannot be accorded frontrunner status. As my argument refers to the strategic use of political activity for political goals, only those actors who use *exclusively* political means - e.g., strikes, protests, campaigns, rallies, boycotts - to accomplish *exclusively* political goals - e.g., increased representation in the legislature, new constitutions, term limits, incumbent replacement - will be considered as possible frontrunners.

Oppositional groups such as the Islamic Unity of Afghanistan Mujahideen, a military alliance formed by political groups in resistance to Soviet occupation in the 1980s, and Les Forces Nouvelles of Côte d'Ivoire, are therefore ineligible for consideration as frontrunners. While these two groups both represent alliances among political groups, hold political goals, and employ some political tactics, they rely at least in part on the use of military means, namely guerilla warfare and the occupation of territory, to pursue these goals.

In the case of military groups with separate political wings, the political wing is eligible for frontrunner status if it operates with some autonomy and according to the 'exclusively political' rule. The Sudanese People's Liberation Movement (SPLM), the separate political wing of the Sudanese People's Liberation Army, is therefore eligible for frontrunner status, although SPLA military commander John Garang is not.

Electoral Coalitions Organizations and individuals were usually considered independently for potential frontrunner status, but under special circumstances, electoral coalitions were also considered as potential frontrunners. The key criteria to meet

for these cases is cohesiveness of the coalition. Since the theoretical logic hinges upon the facts that (a) a frontrunner can reasonably expect to be the beneficiary of any cascade-prompted political change, and that (b) the presence of such a frontrunner decreases uncertainty about a post-cascade political environment, coalitions were considered potential frontrunners if their behavior indicates a prior agreement on the division of any future political benefits.

A classic indication of sufficient coalescence is the backing by multiple parties of a single candidate for executive office: these parties demonstrate clear agreement on the ultimate benefit, occupation of executive office. A similarly clear indication involves presenting a single party list with combined candidates for legislative elections. In both cases the various actors involved have established among themselves how to share future political benefits, reducing or eliminating uncertainty about the beneficiaries of a radically changed political environment. Because occupation of public office is rival (one party leader's holding a post means no other party leader can), the agreement involved is not costless, indicating credible commitment to cooperation in the present for potential future benefits to be shared.

A clear case of an electoral coalition that by these criteria qualifies as a potential frontrunner, and boasts the political dominance necessary to earn that designation, is Kyrgyzstan's United People's Movement (UPM). For July 2009 elections, this group of opposition parties jointly and cohesively endorsed the presidential candidacy of Almazbek Atambayev, albeit without success. As the UPM enjoyed the backing of all leading opposition parties, this coalition meets the superiority criteria for a frontrunner, and Kyrgyzstan 2009 is classified as a frontrunner year. Kenya's National Alliance of Rainbow Coalition (NARC) of 2002, whose joint candidate Mwai Kibaki succesfully defeated incumbent Daniel Arap Moi's handpicked successor in presidential elections, offers another example of a frontrunning coalition. Participating parties signed an explicit Memorandum of Understanding (MoU) regarding the division of

executive power and cabinet positions in the event of electoral success.

When two or more opposing actors simply happen to share a particular political goal, prompting their agreement to combine efforts towards its realization, this alone does not indicate that the parties involved have any agreement about benefit-sharing. Without that agreement, uncertainty about the distribution of any cascade-driven benefits remains, decreasing the incentives to pursue, even collectively, such a risky endeavor. Thus a coalition of political parties who are roughly matched, which promises to work collectively towards a non-rival political goal, such as defeating a term limit amendment, does not by that promise qualify as a potential frontrunner. There is no indication that the coalition members have a similar understanding about how any additional rival benefits would be shared. Whether the non-rival goal is reached or not, each coalition component will rationally continue the individual pursuit of their separate interests.

An example of such a non-frontrunning coalition is the Consultative Council of Political Parties formed in June 1999 by most of Tajikistan's important opposition elements; the Council campaigned against constitutional changes proposed by the incumbent People's Democratic Party of Tajikistan, but was unable to agree on any shared candidates, and did not effectively operate as an electoral coalition during legislative elections the following year.

Importantly, it is not necessary for frontrunner status that an electoral coalition stay united after achieving political change. A frontrunning coalition may in fact dissolve into infighting quickly after realizing political benefits, as was the case with NARC within a year of its taking power in 2003. This does not obviate their status as frontrunners beforehand, however: their costly prior agreement reduces uncertainty about cascades, and creates real expectations of benefits among all coalition members that change the incentives to cascade.

Changing Political Conditions The final special circumstance of note for coding frontrunners involves the treatment of country-years under changing or unusual power arrangements. These include three scenarios: a military coup, inclusion of opposition in government, and changes in the relative power status of political groups.

When an incumbent is deposed by a military coup, an extant frontrunner retains that designation provided it continues to belong to the opposition. This is most frequently the case when the coup is internal, such that the occupant of executive office is replaced without meaningfully changing the government's relationship to oppositional forces. Accordingly, the 1992 "soft-gloved coup" of senior military leaders in Algeria in response to the 1991 electoral success of the frontrunning fundamentalist Islamic Salvation Front (FIS) did not alter the FIS's status as oppositional, even as it replaced the incumbent executive, President Bendjedid.

For coups that produce a more substantive transformation of executive power, the reconstituted government necessarily assumes a new role relative to formerly oppositional groups. A new regime translates to a new political landscape, and the post-coup political status of political groups, whether coup-supportive, coup-opposed, or neutral, becomes more ambiguous. Often, longstanding opposition groups welcome the new incumbents, as the former opposition African Party for the Independence of Guinea and Cape Verde did the military government established in Guinea-Bissau after President Yala's ouster in 2003. For such cases, even if an opposition actor clearly possesses the type of political dominance over the rest of the opposition required for frontrunner status, it fails to qualify as a frontrunner unless, or until, the actor can be established to be in opposition to the government.

A second type of dynamic political change is the inclusion of an opposition group in government. A particularly important opposition figure may accept a post in a government to which she is otherwise hostile, or a group may negotiate a share in executive authority subordinate to the executive. Importantly, these extensions of power

are limited in that they do not involve the actual yielding of power by the incumbent, who retains executive authority. Even extensive power-sharing arrangements, such as those negotiated by opposition frontrunner Morgan Tsvangirai and the Movement for Democratic Change in the wake of Zimbabwe's disputed 2008 elections, do not indicate that the former frontrunner has acquired incumbency status. Importantly, Robert Mugabe retained the presidency, and his Zimbabwe African National Union - Patriotic Front has not lost de facto governing authority.

As accepting such positions does not require adopting a positive stance relative to the incumbent, simply holding posts in the government, or seats in the legislature, does not remove such groups from the opposition. In fact, quite frequently their acceptance is temporary, with resignations and walk-outs to be expected over major or minor policy issues. Provided the individual or group continues to challenge the government and agitate for incumbent replacement, they remain in opposition and eligible for frontrunner status.

The final type of political change relevant for coding frontrunners involves changes in the relative ranking of various opposition actors. This can lead to loss of frontrunner status in two ways. First, the emergence or rise of another opposition group may mean that the newer group comes to rival the original, in which the latter no longer possesses the clear dominance necessary to retain frontrunner status. Alternately, even in the absence of a rising rival, a former frontrunner may fade to obscurity after political setbacks, or dissolve into factions of rough parity due to infighting.

Examples of groups losing their frontrunner status in both ways are present in the sample. With the rise in popularity of Prince Ranariddh in 2000, former Cambodian frontrunner Sam Rainsy sees his Sam Rainsy Party (SRP) come to lose the clear dominance it had possessed among the various opposition elements from 1997 through 1999. Similarly, Cameroon's Social Democratic Front (SDF), which enjoyed clear political dominance through most of the 1990s, succumbs to intense infighting in 1998

as a quarter of the party's legislators defect to protest behavior of leader John Fru Ndi. The loss of strength occasioned by the party split renders doubtful SDF's continued superiority relative to the other leading opposition parties, the National Union for Democracy and Progress and the Cameroonian Democratic Union, resulting in the loss of frontrunner status through the rest of the panel. Accordingly, Cameroon is coded as having no frontrunner from 1998 onward.

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