

# Signaling and Screening in Contentious Politics

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## Abstract

Literature on contention and repression overwhelmingly assumes that contentious politics is a zero-sum game and the goal of repression is to subdue all protests. This approach ignores that contentious action provides information about grievances which are costly to ignore for the government. I develop a formal model of contentious politics where activists use protests to signal their grievances as well as impose costs on the government. The model shows that repression can have a screening purpose. Governments use coercion to set the terms of contention so that they only have to accommodate sufficiently aggrieved and salient groups, while filtering out the rest. The model also demonstrates that decreased cost of mobilization makes repression indirectly cheaper for governments, leading to more repression. Taken together, these findings provide a theoretical explanation for the inconsistent findings in the empirical literature on contention and repression. Finally, the results provide an explanation for why rational governments would resort to repression only to follow it with accommodation.

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# 1 Introduction

Traditional approaches to the study of contention and repression follow a straightforward framework: groups mobilize to challenge the status quo and threaten the government. Because governments always seek to perpetuate the status quo, they resort to repression to eliminate the threat, as it is often cheaper than accommodation (Tilly, 1978; Earl, 2003; Davenport, 2007; Pierskalla, 2010; deMeritt, 2016). Contentious politics are a zero-sum game, where governments never want to accommodate if they can help it, and protesters only “extract concessions” by threatening or inflicting costs on the government (Ritter, 2014; Klein and Regan, 2018). In addition to overlooking, or misclassifying a significant amount of contentious action, this framework obscures key dynamics of protests and government response.

Consider the protests against the US-Based Newmont Mining Corps’s proposed Conga mine in Peru 2011, where activists demanded cancellation of the project citing environmental concerns (Arce, 2014; Ruggie, 2013).<sup>123</sup> The government initially responded with violence, but accepted the demands of the activists and suspended the project — estimated to be worth \$4.8 billion— shortly after. Concession was clearly costly for the government in terms of foregone revenue, and repression failed to subdue the protesters as it often does (Francisco, 1995; Davenport, 2007; Davenport and Loyle, 2012; deMeritt, 2016).

The modal framework focusing on challenging government authority is a poor fit for this context, where protesters called for the government to exercise its sovereign authority over a private actor in order to meet their demands (Steinberg, 2016, 2018). Although concession was costly, it is not safe to assume that the government experienced a net loss by accepting the demands of protesters. President Ollanta Humala had recently been elected on promises of helping the rural poor, and ending conflicts around mineral extraction. While

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<sup>1</sup><http://www.minesandcommunities.org/article.php?a=11291>

<sup>2</sup><http://www.minesandcommunities.org/article.php?a=11342>

<sup>3</sup><https://www.bbc.com/news/world-latin-america-15884119>

his government lost the revenue from the mine, it gained —or avoided losing— the support of people that mobilized against the project. Indeed, scholars of resource conflict have highlighted how governments use protests around resource extraction as way to fuel their legitimacy, often by pressuring firms to accept high levels of “beyond voluntary” corporate social responsibility (CSR) spending (Bebbington, 2012; Arce, 2016; Haslam and Ary Tanimoune, 2016; Haslam, 2018).

The case of Conga is not unique. In fact, more than half of the contentious action in Latin America and Africa was primarily targeted at actors other than the state (Salehyan and Stewart, 2017). Even when contention is targeted at the state, protesters often do not have the intention —let alone the capacity— to directly challenge the state. Rather, activists use mobilization to signal their grievances, with the expectation that the government will take action to respond to their demands (Lohmann, 1993; Holdt et al., 2011; Gause, 2020). Of course, contentious mobilizations do often impose costs on the government. Riots, labor strikes or blockades can directly damage the economic resources of the state unless the government takes action to stop them. But this does not always mean that they succeed *because* they were sufficiently threatening, or disruptive.

While governments use repression as a response to expected costs of contention, they do not always have an incentive to subdue all protests. Accommodation is costly, but ignoring the grievances of citizens is not free either. If a group of citizens is sufficiently aggrieved and politically salient, it can be too costly to ignore them (Lorentzen, 2013; Gause, 2020). In these cases, citizens mobilizing can be beneficial for the government. Collective action provides information about the citizens’ needs and an opportunity to address them before they vote for the opposition in the polls, or withhold their support in other ways. Governments accommodate the demands of activists not because they were too costly to repress, but because they were sufficiently costly to ignore.

Broadening the framework of contentious politics to include the signaling element

of contention helps us better interpret the seemingly inconsistent or even contradictory empirical findings on repression and dissent (Ritter and Conrad, 2016; Hill and Jones, 2014; Davenport, 2007; Davenport and Loyle, 2012; deMeritt, 2016). Despite its common use, evidence suggests repression is at best an uncertain, if not a counterproductive tool. More than a quarter of the non-maximalist protests that were targeted by repression ended up getting concessions (MEC dataset). To paraphrase Davenport and Loyle (2012) either states are crazy, or they are using repression strategically for reasons other than simply subduing all protests.

To examine these dynamics, I develop a formal model with two-sided uncertainty. A group of citizens has a privately known grievance that the government can alleviate at a cost. Citizens can mobilize to signal their displeasure with the status-quo, yet they do not know to what extent the government is willing to accommodate their demands. Unlike common models of repression and dissent, the government might be willing to accommodate the group even if the activists' grievance is high enough (Ginkel and Smith, 1999; Pierskalla, 2010; Ritter, 2014).

To underscore the interaction of signaling and disruption effect of mobilization and the purpose of repression, I first analyze a setting where protests are not disruptive. In this case, contentious mobilization has a pure signaling effect. The government can simply choose to ignore the activists if it turns out that their demands are too costly relative to their political salience. Next, I consider a setting where protests are disruptive enough that the government cannot simply ignore them. This leads the government to use repression in order to deter groups that seek to extract concessions. That is, forcing the government to make transfers that it would not have made under complete information.

Because protests impose costs, and the government lacks information about the level of grievances, it cannot simply let the protests run their course, or perfectly tailor its repressive policy. Consequently, it can end up repressing groups that it prefers to accommo-

date. Similarly, due to uncertainty about government’s preferences, activists do not know the scale of repression that the government will use. This leads some groups to be too optimistic and get demobilized by repression when they protest.

A key insight of the model is that some groups overcome repression and receive concessions because they are sufficiently aggrieved and salient, not because they are disruptive or threatening. Indeed, the government does not use repression severe enough to repress them because they would be accommodated under complete information. Sometimes being able to impose costs on government can encourage these groups to protest, but it is not what makes them succeed. Of course, some groups can extract concessions that they would not have received under complete information. But grievances, and thus the informational effect of mobilization still matter because they indirectly affect the level of repression the government employs.

By relaxing the zero-sum assumption and focusing on grievances, the model presents a better understanding of strategic relationship between the level mobilization and repression in most settings. In particular, the model demonstrates that reduced cost of mobilization also indirectly makes repression cheaper, thus higher. This is particularly important in a period where technological developments have made contentious mobilization easier, but not more successful (Tufekci, 2017; Chenoweth, 2021; Dragu and Lupu, 2021). This is consistent with the empirical record, but not readily explained by previous research on signaling and conflict, where increased *resolve* (i.e. decreased cost of mobilization) (Fearon, 1995; Slantchev, 2005; Hollyer and Rosendorff, 2011; Ritter and Conrad, 2016; Ramsay, 2017) is expected to have a uniform and positive effect.

This paper contributes to the study of contentious politics and repression in three ways: it identifies a strategic reason for why governments consistently use repression against public dissent, even when it has seemingly inconsistent or counterproductive results (Dav-enport and Loyle, 2012; deMeritt, 2016). The model analyzes mobilization’s signaling and

disruptive effects together which builds on existing work that studied them in isolation (Pier-skalla, 2010; Ritter, 2014; Lohmann, 1993; Gause, 2020; Bueno De Mesquita and Tyson, 2020). Finally, the model grounds some of the seemingly contradictory empirical findings with regards to state responses to public contention.

The next section examines relevant formal and empirical work on protest dynamics and repression-dissent nexus for the development of the model and its logic. Following that, I present and analyze the model. In the final section, I provide a discussion of the results and relate the findings to existing theoretical and empirical work.

## 2 Signaling, Disruption, and Dissent

Both formal and empirical literature on repression generally equate contentious action with dissent: “collective actions to threaten or actually impose costs on government to change status quo.” (Ritter, 2014; Ritter and Conrad, 2016; Klein and Regan, 2018) This approach leads to the conception that all contentious politics are simply mini-revolutions: a zero-sum game, where the protesters’ victory is necessarily the government’s loss. Yet often times, neither governments or activists approach their interaction in a zero sum way.

A key reason people engage in contention is to make their grievances known (McAdam et al., 2001; McAdam and Tarrow, 2010), as one protester from South Africa put it: “a message to the top...so they know what is going on.” (Holdt et al., 2011) Protests often affect policy outcomes by informing political leaders about the citizens’ preferences (Lohmann, 1993). Governments can gain valuable political support —or at least avoid losing it— by being able learn and alleviate grievances of citizens. This is particularly true where governments have electoral incentives. Gause (2020) presents a formal model where groups can take costly action to communicate their interests to an re-election-minded legislator. Because protests are costlier for groups who lack institutional access to political process, their

protests are more likely to be informative for the officials. Looking at the roll call votes of US legislators, she finds evidence that US legislators are indeed more likely to take action in line with the preferences of low-income and racial-minority groups after protests. Similarly, governments in Latin America often take the side of protesters in firm-community conflicts, because they see forcing firms to fund social programmes as a way to boost their legitimacy, and thus re-election chances (Arce, 2014, 2016; Steinberg, 2016; Bebbington, 2012; Haslam, 2018).

Even a highly authoritarian regime like China often tolerates local protests with narrow goals, and address the demands of the protesters (Lorentzen, 2013; O'Brien and Li, 2006; Li, 2019). As Lorentzen (2013) argues, one can hardly make the argument that small scale protests are extracting concessions from the ruling regime by threatening the government. Indeed, Chinese leaders have made statements that suggested toleration, if not encouragement of these protests with narrow goals (Lorentzen, 2017). Lorentzen uses a model of mechanism design to focus on how the government can preempt revolts by encouraging loyalists protests. His model demonstrates that by conditioning transfers to sufficiently high levels of protests, government can prevent highly aggrieved populations from taking anti-government actions, while also preventing opportunistic protests. Thus, similar to models of protests in democratic settings mentioned above, protests succeed by providing credible information about grievances. These informational models of protests do not feature repression because they assume protests are costless for the government. Thus, the governments can simply disregard the protesters if they choose to.

On the flip side, formal work on repression focuses on zero sum-settings, generally with a bargaining framework (Ginkel and Smith, 1999; Pierskalla, 2010; Ritter, 2014). In these models, disagreement over status quo does not come from incomplete information, but from completely opposed preferences. Governments accommodate only when they are too weak to repress, or when they fail to subdue the protesters through repression. For example, Ritter (2014) models a context where concessions always reduce the likelihood leader's of



survival in the office. Similarly, Pierskalla (2010) assumes that strong governments will always prefer repression to accommodation. While these models highlight the strategic interaction of repression and dissent in direct, often maximalist challenges to governments, these contexts compromise only a small fraction of protests that take place.

Despite acknowledging the strategic process between government and protesters, empirical work on repression and dissent also often overlooks signaling function of protest. Looking at state response to protest, Klein and Regan (2018) assume that protesters' only bargaining power comes from disruption costs: direct and indirect economic costs such as the disruption of business activities. Ritter and Conrad (2016) focus on censoring and selection effects in the observational study of repression and dissent. Using rainfall as an instrument for the effect of dissent on repression, they find that there is no systematic relationship between observed dissent and repression. While highlighting the behavior of protesters in *expectation* of repression, they similarly consider all contentious mobilization as dissent with zero-sum goals. As I discuss in more detail below, by overlooking that protests signal grievances as well as impose costs, these studies miss why and how repression is used.

The model I present here incorporates both the informational and the disruptive effects of protests. Put it differently, protests both provide information about the grievances of activists and impose costs on the government. Unlike purely informational models of protests, governments cannot simply disregard protesters. Government chooses a repression policy with the expectation of costly protests, while also factoring the indirect cost of grievances that lead to the protests in the first place.

### 3 The Model

I model a scenario with two players: an Activist (A, she), a Government (G, it). The activist's utility from status-quo is determined by privately known type  $\theta \in [0, 1]$ , so that

her status-quo payoff  $-\theta$ . Throughout the text I refer to  $\theta$  as A's grievance. The activist also has political salience  $\alpha \in [0, 1]$  for government, which is unknown to A. The parameter  $\alpha$  captures how much the government cares about the grievance of the activist.<sup>4</sup> This interest can be genuine or instrumental and it can vary across issue areas. For example, a government might be less susceptible to public opinion in foreign policy than in environmental issues. Displeased populations matter for the government as they might vote for the opposition, or withhold their support in different ways. Another possible interpretation of the parameter is the quality of the government in political delegation models, where higher values mean greater similarity of interests between the government and citizens (Canes-Wrone et al., 2001; Bendor et al., 2001; Bendor and Meirowitz, 2004).

Activist can choose to mobilize at a cost  $C(m) = cm^2$ , which both signals grievance and causes disruption. If she receives concessions, her grievance is completely alleviated and her payoff is set to  $0 - cm^2$ .<sup>5</sup>

If the activists' grievances are not alleviated, the government loses  $\alpha\theta$  as it loses political support.<sup>6</sup> When the government engages in repression, it chooses its repression level  $r$  before observing the level of mobilization. Repression at a level  $r$  costs  $kr^2$ , where  $k > 0$ . The government succeeds in demobilizing a protest if the level of repression is  $r \geq m$  and fails otherwise. The cost of repression is only realized if the activist mobilizes.

Regardless of repression, government can choose to concede to the demands of the activist  $d \in \{0, 1\}$  at a cost  $0 \leq d \leq \frac{1}{2}$ .<sup>7</sup> If protests are disruptive, conceding to the demands

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<sup>4</sup>Technically, this is the relatedness parameter in the standard Sir Philip Sidney Game. The key finding of the model would not change if the uncertainty was around  $d$  instead.

<sup>5</sup>Outside the baseline model, I assume that protests impose enough disruption costs that they cannot be ignored. To see why this would be the case, suppose a level of repression  $m$  causes disruption at level  $mv$ , unless the activist is accommodated or repressed. The model focuses on the cases where  $v$  is sufficiently high. See Appendix for more details.

<sup>6</sup>This setup is similar to Sir Philip Sidney Game with differential benefits. Typically used in evolutionary game theory (Zollman et al., 2013).

<sup>7</sup>Restricting  $d$  to  $[\frac{1}{2}, 1]$  ensures that the government will never accommodate under guesswork, so that

saves the government the direct that would otherwise be imposed. Similar to the choice of repression, this ensures that the government has a reason to concede in order to stave off disruption costs.<sup>8</sup>

Intuitively, governments concede or repress to mitigate the potential disruption caused by contention. If the government were to wait and let the protest run its course the disruption would be already realized and government would have no incentive to repress or concede unless repression is used for punitive purposes.

To sum up the sequence is:

1. Nature draws  $\alpha$  and  $\theta$  from independent uniform distributions with full support on  $[0, 1]$ .  $\alpha$  is only revealed to G and  $\theta$  is only revealed to A.
2. G chooses a repression policy  $r \geq 0$ , whose cost  $kr^2$  is only realized if  $m > 0$ .
3. If A chooses a level of mobilization  $m \geq 0$  at cost  $cm^2$ .
4. G chooses whether to accept the demands or not  $d \in \{0, 1\}$  at a cost  $d$ .

And the payoffs are:

$$U_A = -\theta(1 - d) - cm^2$$

$$U_G = -d - kr^2 + (1 - d)(-\theta\alpha)$$

The solution concept is Perfect Bayesian Equilibrium (PBE), which specifies: 1) A level  $m \geq 0$  for each type of activist with  $\theta \in [0, 1]$ . 2) A level of repression  $r \geq 0$  and decision to accommodate for each type of government with  $\alpha \in [0, 1]$ . 3) A set of beliefs for the government regarding the type of activist after observing  $m$ . Proofs that do not follow from the main text are in the appendix.

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the Activist will never be accommodated unless she protests.

<sup>8</sup>Such commitment structure is common in policy-making models Bueno De Mesquita and Hafer (2007); Rozenas (2020).

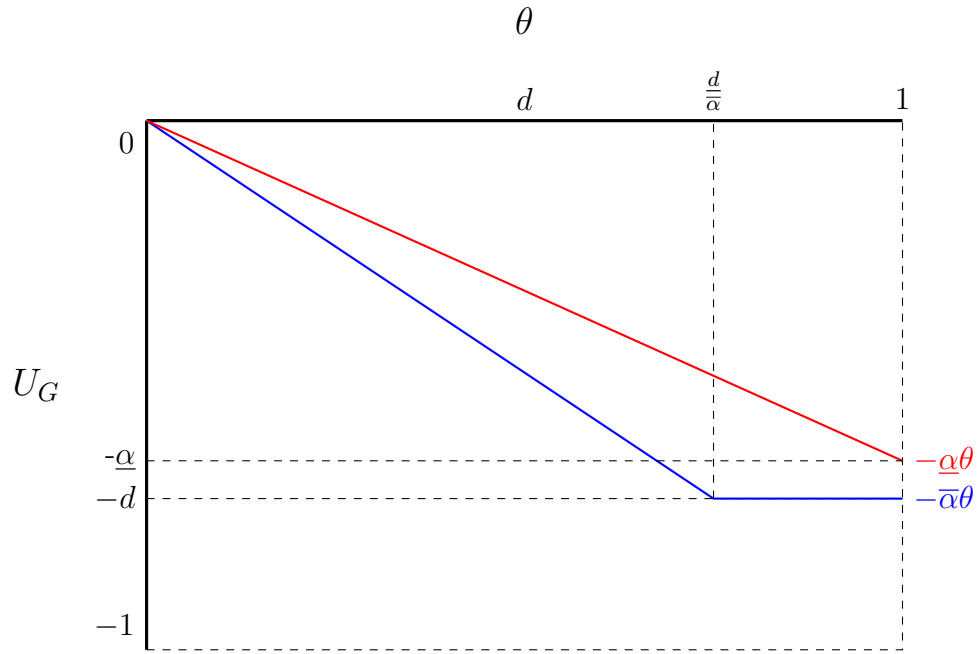


Figure 1: G's utility with no accommodation for two values of  $\alpha$  with regards to A's type  $\theta$ , where  $\bar{\alpha} > d > \underline{\alpha}$ .

### 3.1 No Disruption or Repression

I start with a setting where protests do not impose direct costs to the government. This is not necessarily an analytical benchmark but also a feature of many forms of collective action. Protesters often engage in sit-ins or marches without causing any property damage, or disrupting economic activity in general. Protest organizers can take extra measures to make sure the protests do not result in property damage, and sometimes even work with official authorities by taking permits. In some cases protesters even clean up after themselves by picking up litter and cleaning up graffiti.

Since protests do not impose direct costs to government, activists cannot coerce the government into concessions.<sup>9</sup> However, they can use mobilization to signal their grievances. If the level of protests perfectly reveal the Activist's grievance, the government's choice is straightforward. Under complete information, the government prefers to accommodate if ignoring is sufficiently costly  $\alpha\theta > d$ , or  $\theta > \frac{d}{\alpha}$ .<sup>10</sup> Note that a Government with type  $\alpha \leq d$ , will not accommodate any activist. Similarly, an activist with type  $\theta \leq d$ , will not be accommodated by any government. Figure 1 above illustrates the government's preferences with respect to grievance of  $\theta$  for two values of  $\alpha$ . In equilibrium, a government with type  $1 \geq \alpha > d$  uses a threshold strategy, accommodating the activist when  $m > t(\alpha)$ ,  $E[\theta|m > t(\alpha)] > \frac{d}{\alpha}$  and ignoring otherwise.

Were the government's type  $-\alpha-$  publicly known, A's choice would be simple. Activists whose grievances are sufficiently high  $-\theta > \frac{d}{\alpha}-$  would mobilize just enough to get accommodated  $-t(\alpha)-$  while others would not mobilize at all. Since the activist does not know  $\alpha$ , she does not know whether she will be accommodated or not. While a higher level of mobilization is more likely to be accommodated, it is also more costly. If the activist

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<sup>9</sup>This is not to suggest that unobstructive protests are always trivial events that never pose no danger to the government. There is an extensive literature on informational cascades starting with (Kuran, 1991).

This literature typically focuses on direct, anti-regime protests, which is outside the focus of this paper.

<sup>10</sup>Since  $\theta = \frac{d}{\alpha}$  occurs with a probability 0, G's indifference here is not important.

mobilizes at all, her level of mobilization balances these in order to maximize her utility. Formally:

$$m^* \equiv \operatorname{argmax}_m \theta - \Pr[m \leq t](\theta) - cm^2 \quad (1)$$

where,  $(\Pr[m \leq t(\alpha)]) = 1$  if  $\theta \leq d$  and

$$(\Pr[m \leq t]) = \int_0^1 t(\alpha) - m d\alpha$$

otherwise. So that  $m^*(\theta) = \frac{\theta}{2c}$ . Given the activist's strategy, the threshold for a government with type  $1 \geq \alpha > d$  is  $t(\alpha) = \frac{d}{\alpha^2 c}$ .

Finally, activist compares her expected utility with optimal level of mobilization to not mobilizing at all. If she does not mobilize, her payoff is  $-\theta$ .<sup>11</sup> Her expected utility for mobilization is given by the cost of  $m^*$  and the expected probability of getting ignored:

$$\begin{aligned} \theta + \frac{d}{\theta}(-\theta) - c\left(\frac{\theta}{2c}\right)^2 &> 0 \\ \theta > \dot{\theta} &\equiv 2c - 2\sqrt{c^2 - cd} \end{aligned} \quad (2)$$

Combining these results we get the equilibria of the game with no disruption, depicted in Figure 2:

**Proposition 1** *In the baseline model with no disruption and repression, there exists an equilibrium such that:*

*G with type  $\alpha \leq d$  ignores all protests.*

*G with type  $1 \geq \alpha > d$  uses a cutoff strategy, accommodating when  $m > t(\alpha) = \frac{d}{\alpha^2 c}$  and ignoring otherwise.*

*A only protests if  $\theta > \dot{\theta} \equiv 2c - 2\sqrt{c^2 - cd}$ . If she protests the level of mobilization  $m^*(\theta) = \frac{\theta}{2c}$ .*

Proposition 1 points to two key results: First, protests do not need to be impose direct costs on government to succeed. Second, rational activists can take the streets to

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<sup>11</sup>Recall that  $d \geq \frac{1}{2}$ .

protest only to get ignored by the government. Empirically, this is very common. Looking at protests around the world, Klein and Regan (2018) find that simply disregarding protesters is the modal government response. Proposition 1 points to an answer as to why people keep taking the streets peacefully only for their efforts to be wasted.<sup>12</sup>

Key here is two sided uncertainty. If the government had complete information, signaling grievances would be unnecessary, because it could make concessions to sufficiently aggrieved groups in order to avoid losing political support. Similarly, if the activist had complete information, only the activists who knew that they would be accommodated would protest.

While asymmetric information can make the activists too optimistic about their likelihood of success, it can also make them too pessimistic. Expecting to be ignored, some activists  $\frac{d}{\alpha} < \theta < \dot{\theta}$  choose not to mobilize at all even though they would receive concessions off the equilibrium path. This is the orange shaded Region II in Figure 2. Note that this mechanism for lack of contentious action is distinct from coordination or collective action problems. It is not the activists' inability to mobilize sufficient numbers, but rather their lack of information on what the sufficient number is that leads to inaction.

As proposition 1 demonstrates, this lack of information can go both ways: it can lead to both missed opportunity or failed mobilization. When the government's type is sufficiently low, even highly aggrieved activists get ignored. This is the red shaded Region IV in Figure 2.

Although we do not observe the protests that did not happen because of pessimism, there are quite a few examples of protests that were simply ignored by the government. Most notably, the US government's response to protests against the invasion of Iraq on February

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<sup>12</sup>This is not to suggest that all contentious action that does not get a positive government response are complete failures. Protests can still be key in creating new social organization, networks that can further the activists goal in the future see (Tufekci, 2017; McAdam and Tarrow, 2010).

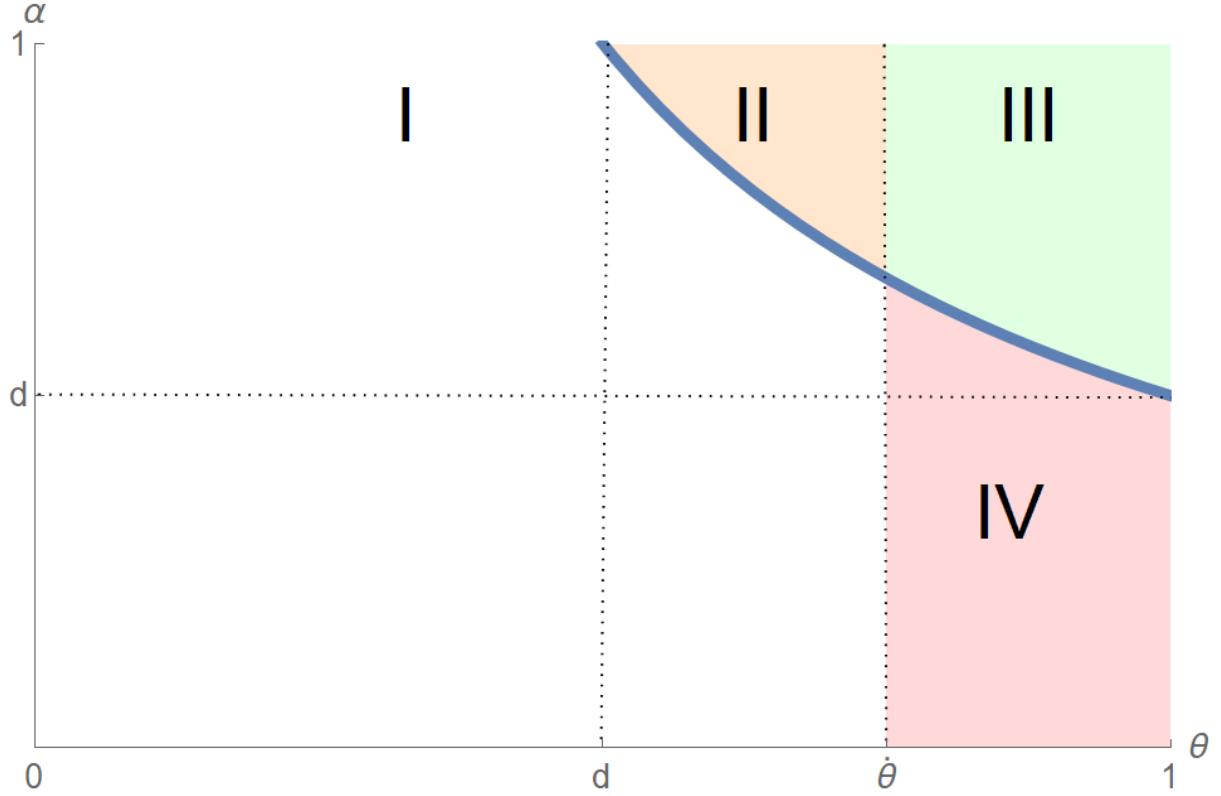


Figure 2: Outcomes under Proposition 1 as a function of A's type  $\alpha$  and G's type  $\theta$ , where the curved line is  $\frac{d}{\alpha}$ . Region I shows the parameter range where there is no opportunity and no protest. Region II, is where A does not protest but would get accommodated off the equilibrium path. Region III and IV show the range of successful and failed protests respectively.

15, 2003 (Tufekci, 2017). While organizers hoped that a significant turnout would sway the government's position in fear of losing political support, the President Bush simply ignored the protesters, which numbered in tens of thousands.

Of course, the number of participants can be deceptive with regards to the likelihood of success. While the level of mobilization increases with the level of grievance, level of mobilization does not directly translate to likelihood of success. Notice that the government adjusts its threshold for concessions  $-t(\alpha)$  according to the cost of mobilization  $c$ . As the cost of mobilization decreases, for example due to pleasant weather, increased transportation,



or internet access the government accordingly expects the activist to mobilize at higher level for a given level of grievance. Put differently, the government understands that 1000 people protesting on a rainy day or in an area with poor transportation is different than 1000 people protesting on a sunny day or somewhere easy to reach with public transport (Bueno De Mesquita and Tyson, 2020). Consequently, the government adjusts its threshold for accommodating the demands of protesters.

**Proposition 2** *If protests are not disruptive.*

*Conditional on protesting,  $c$  has no effect on the probability of success:  $Pr(m^*(\theta) \leq t(\alpha)) = \frac{d}{\theta}$   
As  $c$  decreases, protests become less likely:  $\frac{\partial \theta}{\partial c} > 0$ .*

The insight of Proposition 2 is particularly important in a period when social media and similar communication technologies have made collective action easier, but not more successful (Tufekci, 2017; Chenoweth, 2021). One key reason is that governments are also aware that the cost of mobilization has decreased, and expect even higher numbers before they decide that a group of protesters is too aggrieved to be ignored. Conditional on protesting, an activist succeeds only when the government’s type is sufficiently high  $\alpha > \frac{d}{\theta}$ , which has a probability  $1 - \frac{d}{\theta}$ . This is the green shaded Region III in Figure 2.<sup>13</sup> Gause (2020) makes a similar case, where she argues that legislators pay attention to resource constraints of protesters. She finds that US legislators are more likely to pay attention to protests by low-resource groups such as ethnic minorities, even when the size of protests are similar. The model here shows the opposite is true as well: governments pay attention to reduced costs of mobilization and adjust their expectations accordingly.

The second part of Proposition 2 might seem paradoxical at first. After all, if cost of mobilization goes down, one would expect it to become more likely. However, this result has an intuitive explanation following from the first part of Proposition 2. As the marginal cost of mobilization decreases, the activist has to mobilize at higher levels to credibly signal

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<sup>13</sup>Recall that an activist with type  $\theta \leq d$  never protests in equilibrium in the baseline model.

the level of her grievance:  $\frac{\partial m^*(\theta)}{\partial c} > 0$ . The increase in the level of necessary mobilization means that success is no more likely, but failure is more costly. It is more costly to be ignored after mobilizing 100 people than 1000. As the organizers of protests against the invasion of Iraq found out, thousands of people will be equally easy to ignore if the government is not responsive. Consequently, decreased cost of mobilization can have a paralyzing effect on non-disruptive protests.

Having examined how the strategic interaction between the government and the activist would play out if contention did not impose costs, I now turn to the case where protests force the government to respond.

### 3.2 Disruption and Repression

Taking stock of the dynamics of non-disruptive protests, we can see more clearly how disruption and repression fit into contentious politics. When mobilization imposes sufficient costs on the government, it has to use repression to subdue the protesters. Failing that, it has to offer concessions in order to avoid disruption costs. While this dynamic is similar to zero-sum models of contentious politics, the goal of repression is not necessarily to subdue all protests, but to minimize the range of activists that seek to extract concessions through disruption. That is, those that the government would not want to accommodate under complete information.<sup>14</sup>

The government's final decision is the same as the baseline model. By now the government has observed the level of mobilization and outcome of the repression has already materialized. If repression was successful, government simply has to compare the cost of ignoring the activists' grievance and concession. So that its choice is exactly the same as above: Regardless of the outcome of repression, the government concedes if  $E[\theta|m] > \frac{d}{\alpha}$ . If

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<sup>14</sup>I assume that all protests can be disruptive enough such that without repression, all type of activists  $\theta \in [0, 1]$  would mobilize. See appendix for details.

repression was not successful in demobilizing the activist, the government concedes to avoid disruption costs.

The activist's mobilization decision is also similar to the baseline model, except here she has to consider the level of repression. Her optimal level of mobilization given her type  $m^*(\theta)$  maximizes:

$$\theta - Pr[m \leq r](\theta) - cm^2 \quad (3)$$

So that  $m^*(\theta) = \frac{\theta}{2c}$ .

Turning to government's repression policy  $r(\alpha)$ . The governments level of repression is constrained by two factors: direct cost of repression — $k$ —, and the cost of ignoring the grievance of the activist even after successfully subduing the protest — $\theta\alpha$ —. Government's optimal repression policy balances these marginal costs and the marginal benefit:

$$\underbrace{2kr}_{\text{Cost of Repression}} + \underbrace{\alpha 2cr}_{\text{Cost of Ignoring}} = \underbrace{d}_{\text{Benefit}} \quad (4)$$

So that,  $r^*(\alpha) = \frac{d}{2k+2\alpha c}$ .

The first expression on the left hand side, and the right hand side are straightforward. The second expression on the left hand side bears explanation. As the level of repression increases, it can subdue higher levels of mobilization. However, because more aggrieved activists mobilize at higher levels, increased repression also means higher costs of ignoring for the government. Each marginal increase in repression means an additional indirect cost  $\alpha 2cr$  for the government. Repression can subdue protests but it cannot alleviate the grievance that led to them in the first place. Consequently, the government factors in the informational content of mobilization when choosing its repression policy. Note that when  $r = m > t(\alpha)$ , repression has no benefit because the government prefers to accommodate the activist that would mobilize at this level.

Intuitively, as the direct cost of repression — $k$ — decreases,  $r(\alpha)$  approaches  $t(\alpha) = \frac{d}{2\alpha c}$ . A government with type  $d < \alpha$  has no incentive to subdue any mobilization above

$t(\alpha)$ , because any activist mobilizing at this level is sufficiently aggrieved to be accommodated. Similarly, as  $\alpha$  decreases,  $r(\alpha)$  approaches  $\frac{d}{2k}$ , which is the level of repression that the government could employ if the direct cost of repression was the only constraint i.e.  $\alpha = 0$ .

More importantly, government's repression policy is directly related to the cost of mobilization: As the cost of mobilization— $c$ — decreases, government's equilibrium level of repression also increases. In choosing its repressive policy, the government factors in the cost of mobilization similar to Proposition 2. As the cost of mobilization decreases, an activist with a given level of grievance can mobilize at higher levels. This means that the indirect cost of subduing a given level of mobilizations— $\alpha 2cr$ — decreases when the cost of mobilization goes down. Succinctly put, lower cost of mobilization means lower cost of repression.

**Proposition 3** *G's equilibrium level of repression increases as the cost of mobilization decreases.  $\frac{\partial r^*}{\partial c} > 0$ .*

Finally, activist has to decide between mobilizing at  $m^*$  and not mobilizing at all. Activist only mobilizes if:

$$\begin{aligned} \theta + Pr(m \leq r(\alpha))(-\theta) - c\left(\frac{\theta}{2c}\right) &> 0 \\ \theta > \ddot{\theta} \equiv 2(c + k) - 2\sqrt{c^2 - cd + 2ck + k^2} \end{aligned} \quad (5)$$

Combining these results we get the equilibria of the game where government has to respond with accommodation or repression.

**Proposition 4** *When protests are disruptive,*

*A chooses  $m^*(\theta) = \frac{\theta}{2c}$  if  $\theta > \ddot{\theta}$ , and  $m = 0$  otherwise.*

*G chooses a repression policy  $r^*(\alpha) = \frac{d}{2k+2\alpha c}$ , and accommodates if  $m^*(\theta) > r^*(\alpha)$ .*

Figure 3 shows the equilibria of the game with disruption as a function of  $\theta$  and  $\alpha$ . The parameter space of Proposition 4 expands the strategic context of the baseline model.

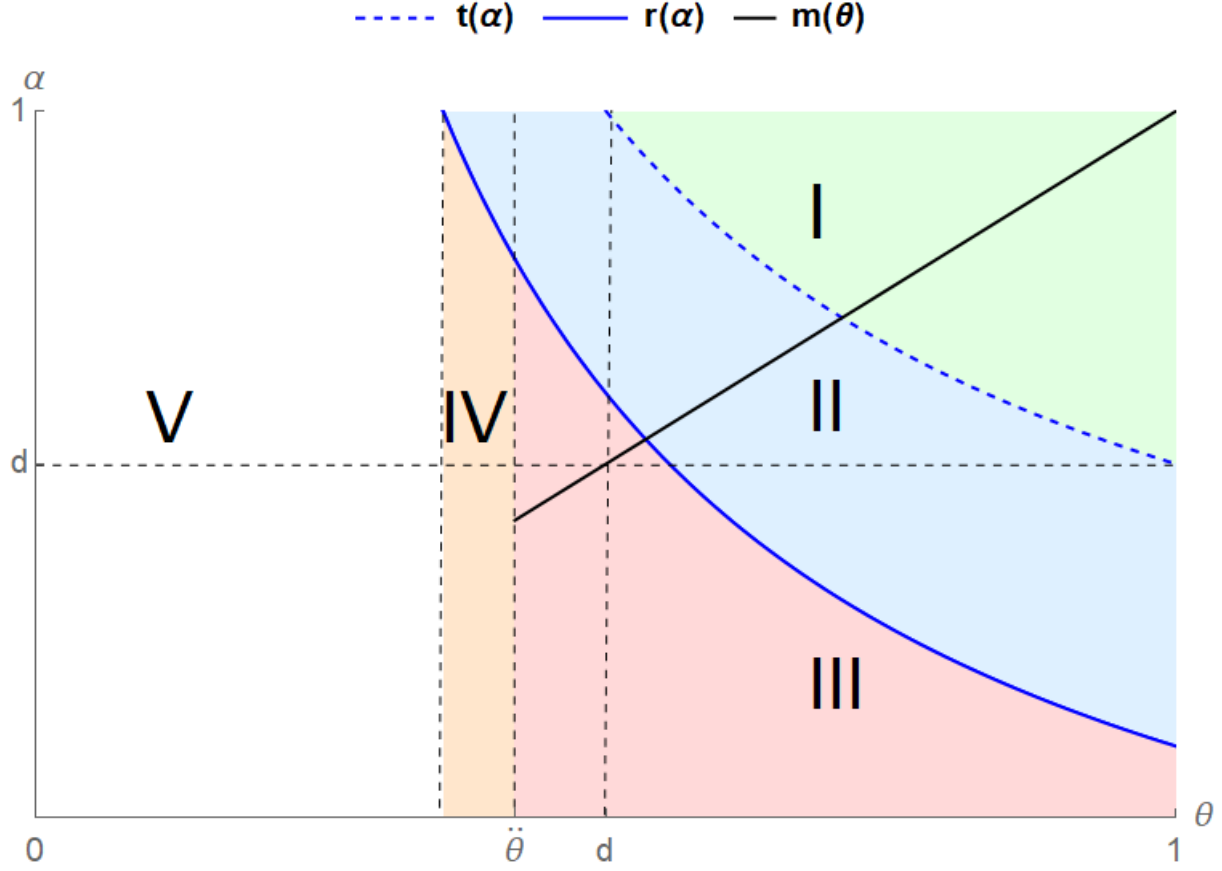


Figure 3: Outcomes with no disruption as function of A's type  $\theta$  and G's type  $\theta$ , where  $c = 0.5$ ,  $d = 0.5$ ,  $k = 0.2$

Just like in the baseline model, asymmetric information can lead to some activists foregoing contentious action, even though they would be accommodated off-the-equilibrium path. This is the orange shaded Region IV in Figure 3. Similarly, asymmetric information can also lead to failed disruptive contentious action. However, in this case the protesters get demobilized by repression rather than ignored. This is the red shaded Region III.

Of course, repression will not be always severe enough to subdue protests. Due to incomplete information, activists that would be accommodated under complete information— $\theta > \frac{d}{\alpha}$ —do get targeted by repression when they engage protests. They are not subdued by repression precisely because repression is intended to filter out less aggrieved groups. Regardless of direct cost of repression— $k$ —, governments have no incentive to use repression

severe enough to subdue groups that they want to accommodate.<sup>15</sup> This is the green shaded Region I.

As the cost of repression increases, lower types of activist can extract concessions from the government. The government does not want to accommodate these activists— $\ddot{\theta} < \theta \leq \frac{d}{\alpha}$ —but it is forced to in order to end the protests. The activists receive concessions because they can impose costs on the government and subduing them is too costly. If the cost of repression were low enough, these activist would either be deterred from protesting, or be subdued by repression. This is the blue shaded Region II in Figure 3. This result is more inline with conventional zero-sum models of contention and repression with an important caveat.

Even when the government would rather not accommodate a particular activists, the salience  $-\alpha$  still matters because it constraints the limits of repression. As described above, the cost of subduing a population through repression is not simply the direct costs associated with repression  $k$ , but also the cost of ignoring their continued grievance  $-\alpha\theta$ . Ignoring this aspect of costs is one reason that previous work (Davenport, 2007; Klein and Regan, 2018) has failed to adequately asses the costs of repression. A government can subdue a protest of 1000 people, but this does necessarily not mean that it will repress AND ignore the same number of people.

Being able to impose direct costs on the government can encourage more groups to protest as long as repression is costly. That is:  $\ddot{\theta} < \dot{\theta}$  as long as  $k > 0$ . Furthermore, unlike the case of unobtrusive protests, marginal cost of mobilization  $c$  does change the likelihood of disruptive contentious action:  $\frac{\partial \ddot{\theta}}{\partial c} < 0$ . As the marginal cost of mobilization decreases (or the marginal cost of repression increases), the range of activists that government can subdue decreases. While the government does not necessarily want to subdue all protests, the more cost of mobilization decreases relative to the cost of repression, the less it is able to set the terms of contention. Knowing this, more types of activist mobilize expecting to be overcome

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<sup>15</sup>Recall that a government with type  $\alpha \leq d$  does not want to accommodate any activist.

repression.

**Proposition 5** *Disruptive mobilization becomes more likely as the marginal cost of mobilization  $-c$  decreases, and the marginal cost of repression increases:  $\frac{\partial \ddot{\theta}}{\partial c} < 0$ ,  $\frac{\partial \ddot{\theta}}{\partial k} > 0$ .*

Imposing direct costs on the government is an important part of contentious action (Luders, 2006; McAdam, 1982), but its true impact might be less significant than touted. Even activists who extract concessions—those that the government would ignore under complete information—, still benefit from the signaling aspect of contention. For sufficiently aggrieved groups  $-\theta > \max\{\ddot{\theta}, \frac{d}{\alpha}\}$ —disruption makes contentious action possible, but it is not what makes contention succeed. Indeed, possibility of disruptive protests will be beneficial for the government if it encourages mobilization by activists whom the government prefers to accommodate.

**Proposition 6** *Potential for disruption is beneficial for the government if  $\max\{\ddot{\theta}, \frac{d}{\alpha}\} < \theta < \dot{\theta}$ .*

Recall from Proposition 2 that if disruption is not possible, the activist becomes less likely to protest as the cost of mobilization decreases. When the costs are low enough, no type of activist will mobilize if disruption is not possible:  $\dot{\theta} \geq 1$ . For example, with the values depicted in Figure 3, where  $\dot{\theta} = 1$ , mobilization would not take place if disruption was not possible. For high type governments, this is not ideal because it prohibits them learning about the grievances that they would prefer to address. Possibility of disruptive action can encourage these groups to mobilize, providing a boon for the government.

## 4 Discussion

Having presented the key results of the model that incorporates both the signaling and disruptive aspect of the protests, I now turn to examine how these findings help us interpret existing empirical findings on contention and repression. First general conclusion from the model is that accommodating contentious action is not necessarily a loss for the government. The scale of collective action provides useful information about the grievances of participants. Governments can use this information to address the needs of their population in order to avoid losing support.

Even when protests are disruptive and aim to extract concessions from the government, the informational aspect of mobilization is relevant for government's response. Indeed, as Proposition 6 demonstrates, potential for disruption through contention can actually be beneficial for the government. Consider the case protests in Mozambique in January 2012, where approximately 500 families blockaded a railway that delivers coal (Steinberg, 2016). While being able to impose costs by blockading the mine certainly helped the protesters, its role in their success might not have been as important as a zero-sum approach would lead us to believe. 500 families letting their grievances known by costly protest was equally, if not more important than the potential disruption. As Steinberg (2016) points out, Mozambique's ruling party was particularly keen on not losing support, because it was campaigning for elections later that year. Of course, as the model demonstrates, it is possible that the protest would not have taken place without the possibility of disruption.

Factoring the informational content of mobilization is particularly important in interpreting the cross-sectional, observational findings. Klein and Regan (2018) argue that protests that threaten disruption are more likely to receive concession. However, because they approach protests as a zero-sum game, they conceptualize the number and location of participants solely as a potential sources for disruption. According to their argument, 1000 people protesting peacefully in a city receive concessions because they are potentially more



disruptive. Clearly, this is rarely the case.

As the model demonstrates, activists can receive concessions by signaling their grievances. Put differently, 1000 people protesting in a city are more likely to receive concessions because the government wants to avoid losing political support of high number of participants, especially if they are politically salient—as urban populations tend to be—. More importantly, it is unlikely that rural protesters can always increase their bargaining power by protesting in the city. Future empirical work should go beyond predicting outcomes and focus on disentangling these distinct mechanisms.

The expectation that governments will response to dissent has been so well accepted that it has been called “Law of Coercive Responsiveness” (Davenport, 2007; Earl, 2011). However, the findings on the effect of repression on mobilized protesters has been inconsistent leading to what has come to be called “The Punishment Puzzle” (Davenport and Loyle, 2012; deMeritt, 2016). Proposition 4 provides a possible explanation. Being able to impose costs on the government encourages more protests against the government, at times—but not always— by those that the government does not want to accommodate. The government’s use of repression is to discourage only these protests. When the government does not know the full extent of grievances, it cannot tailor its repression policy to each individual protest. In some cases, the government will repress activists that it would accommodate under complete information.

This dynamic is different than the traditional backlash hypothesis (Francisco, 1995, 2004; Pierskalla, 2010; Aytaç et al., 2018) used to explain government concessions after repression. According to backlash hypothesis, repression fails because it mobilizes bystanders to join the protesters thereby making the protests even stronger. Here, repression is followed by accommodation because protesters are sufficiently aggrieved and salient, which only becomes apparent after the decisions to mobilize and repress have been made.

The model also provides insight to the contexts where overt repression is not ob-

served. Examining the punishment puzzle, Ritter and Conrad (2016) point out that the inconsistent findings are due to selection effects: government repress preventively, and groups who survive the initial round of repression are systematically more likely to be highly resolved. Using rainfall as an instrument, they argue that once these effects are accounted for, the expected relationship between observed protests and repression disappear.

While selection effects are certainly important, focusing on resolve borrowed from literature on conflict in zero-sum settings (Fearon, 1995) overlooks the informational effect of protests and the purpose of repression. Even when used covertly and preemptively, repression can be used to screen protesters, and it can succeed precisely because it deters less favored by the government, while still leaving enough space to protest for others. Groups whose grievances are high, and can be accommodated with relatively low costs to the government will still protest, especially if they can credibly demonstrate they intend to be non-disruptive through their choice of location and tactics. Furthermore, as Propositions 2 and 3 demonstrate, increased costs to mobilize through external factors such as rainfall not only influence the level of mobilization, but also the government's expected response to a given level of mobilization (Bueno De Mesquita and Tyson, 2020).

The case of contentious politics in China is a good example, but it is far from the only one. Despite being a highly repressive and authoritarian regime, the Chinese government faces a relatively high number of contentious action. As scholars of China have highlighted, (O'Brien and Li, 2006; Lorentzen, 2013, 2017; Li, 2019) relatively high number of contentious action does not demonstrate a weakness of the regime. Activists in rural China have high costs for mobilization but succeed with relatively low levels of mobilization (Lorentzen, 2017). While they often engage in deliberative disruptive actions, they expect harsh government response if they challenge the regime's legitimacy (O'Brien and Li, 2006). Consequently, they rely on using protests to signal their grievances, often with very patriotic and pro-government framing. Unlike the traditional approach to repression and contention, they do not force the regime to make concessions, indeed they cannot. However, protests still serve

to provide information that the government lacks and often lead to accommodation.

## 5 Conclusion

Both formal and empirical work on contention and repression have predominantly focused on mobilizations against the government with a zero-sum framework. This focus has not only left the literature with little to say on a significant portion of contentious politics, but has also undermined the understanding of dynamics and purpose of both contention and repression. In this paper, I have suggested a broader framework to understand these dynamics. Rather than assuming the goal of the government is to deter all protests and demobilize them as is common in the literature, the model presents an alternative explanation. The formal model presented here demonstrates why activists would mobilize only to be ignored or demobilized by repression. Similarly, it provides an explanation for why rational governments would resort to repression only to follow it with accommodation.

Key to the argument presented with a formal model is that contentious action has a disruptive and an informational element, and protesters sometimes have enough political salience and organizational capacity that makes ignoring their grievances too costly for the government. When this is the case, governments would rather these organized communities mobilize and express their grievances. However, since protest can also impose costs on the government, less salient or aggrieved groups can use it to force government to make concessions. In these cases, the government will choose a level of repression that is enough to deter the less salient groups that must rely on disruption, but not ones that would be too costly to ignore. Although from the conventional standpoint, it looks like the repression fails in these cases, it can be working as intended: Deterring concessions when the government does not prefer them, and forcing only the most aggrieved groups to self-select into contentious action.

Finally, the model presented here highlights the importance of the need for under-

standing the different channels and purposes of contention and repression. While different channels of contention are often complimentary—for example when highly aggrieved communities are also prohibitively costly to repress—this is not necessarily the case. Governments that care little about the citizen’s discontent will find suppressing protests much cheaper, even when the underlying grievances are high. Similarly, governments will be more willing to repress a higher number of protesters when the cost of mobilization is lower.

The strategic relationship between contention and repression is less straightforward than zero-sum frameworks expect. Even when the observed number of protesters and level of repression and outcome look similar, the underlying contention-repression dynamic might be different. Consequently, researchers should be wary of making causal arguments from observational data without addressing the observational equivalence of different, often competing data generating processes of repression and contention. Finally, future empirical research should go beyond predicting outcomes and focus on disentangling distinct dynamics between contentious mobilizations and their outcomes.

## 6 Appendix

### 6.1 Benchmark with No Disruption

The equilibrium is a **Perfect Bayesian Equilibrium** (PBE) which specifies:

1. A level of  $m \geq$  for each type of activist with  $\theta \in [0, 1]$ .
2. A threshold strategy for each type of government with  $\alpha \in [0, 1]$ , where  $t(\alpha)$ , where it accommodates only if  $m > t$ .
3. A set of beliefs for the government regarding the type of activists after observing  $m$ .

and actions are sequentially rational strategy given and beliefs are consistent with strategies and updated via Bayes rule whenever possible.

**Proof of Proposition 1:** Because  $d \geq \frac{1}{2}$  is there is no accommodation when  $m = 0$ .

G only accommodates  $E[\theta|m] > \frac{d}{\alpha} \equiv t(\alpha)$ . Consequently, a G with  $\alpha \leq d$  never accommodates. Similarly, no type of G will accommodate A with a type  $\theta \leq d$ . G uses a threshold strategy, accommodating if  $m > t(\alpha)$  and ignoring otherwise. A's net expected utility for mobilization is:

$$\begin{aligned} Pr[m \leq t](-\theta) + (1 - Pr[m \leq t])(-\theta)0 - cm^2 &> -\theta \\ \theta - Pr[m \leq t](\theta) - cm^2 &> 0 \end{aligned}$$

where,  $(Pr[m \leq t(\alpha)]) = 1$  if  $\theta \leq d$  and

$$(Pr[m \leq t]) = \int_0^1 t(\alpha) - m d\alpha$$

otherwise. The first-order condition is:  $\theta - 2cm = 0$ . The second-order condition is satisfied because  $\frac{\partial m(\theta)}{\partial m^2} < 0$ . So that  $m^* = \frac{\theta}{2c}$ . Given A's strategy, the equilibrium threshold for a type  $1 \geq \alpha > d$  is:

$$t(\alpha) = \frac{d}{\alpha 2c}$$

In equilibrium, the ex-ante probability of failed mobilization for  $\theta > d$  is  $\frac{d}{\theta}$ . Incentive compatibility requires that, A only mobilizes if:

$$\theta + \left(\frac{d}{\theta}\right)(-\theta) - c\left(\frac{\theta}{2c}\right)^2 > 0$$

$$\theta > \underline{\theta} \equiv 2c - 2\sqrt{c^2 - cd}$$

**Proof of Proposition 2:** Follows from above.

## 6.2 Disruption and Repression

Why protests are too costly ignore: If repression has failed to demobilize A, G accommodates only if letting disruption happen is costlier than conceding:  $mv + \alpha m^{-1}(\theta) \geq d$ . Rearranging gives  $mv + \alpha 2cm \geq d$ ,  $m \geq \frac{d}{v + \alpha 2c}$ . So that  $t_v(\alpha) < t(\alpha)$  as long as  $v > 0$ .

A's next expected utility for mobilization is similar to above. She maximizes disruption and signaling components. So that  $m^* = \frac{\theta}{2c}$  as above. Without repression, the threshold for mobilization would be  $\theta > \underline{\theta} \equiv 2c - \sqrt{2\sqrt{2c^2 - 2cd} + v}$ . Where  $\underline{\theta}$  clearly, decreases as  $v$  increases. I focus on cases where  $v$  is sufficiently high so that  $\underline{\theta} \leq 0$ .

The equilibrium now consists of:

1. A level of  $m \geq$  for each type of activist with  $\theta \in [0, 1]$ .
2. A level of repression  $r$  and a decision to accommodate or ignore  $d \in \{0, 1\}$  for each type of G.
3. A set of beliefs for the government regarding the type of activist after observing  $m$ .

**Proof of Proposition 3&4:** Similar to baseline model, G perfectly infers A's type after observing  $m \geq 0$ , and  $m^* = \frac{\theta}{2c}$ . Regardless of the outcome of repression G accommodates if  $\alpha > \frac{d}{\theta}$ .

Turning to G's repression decision, because it will accommodate whenever  $m > \frac{d}{2\alpha c}$  regardless of the result of repression, there is no incentive to choose  $r > \frac{d}{2\alpha c}$ . The expected utility of  $r = m$  for a G of type  $\alpha$  is:

$$EU_G(r; \alpha) = -d + r(d - \frac{\alpha}{2}2cr) - kr^2$$

$-\frac{\alpha}{2}2cr$  because the indirect cost for repression at a level  $r = m$  is,  $-\frac{\alpha}{2}m^{-1}\theta$  which follows from the fact that  $m^{-1}(\theta) = 2cm$  and:

$$\int m^{-1}(\theta) d\theta = 1m^{-1}(\theta) - (1 - \frac{1}{2})(m^{-1}(\theta)) = \frac{1}{2}2cm = \frac{1}{2}2cr$$

$$\frac{\partial EU_G(\alpha)}{\partial r} = (d - \alpha 2cr) - 2kr$$

$$r^*(\alpha) = \frac{d}{2k+2\alpha c}$$

A's decision to mobilize:

$$\begin{aligned} \theta + Pr(m \leq r(\alpha))(-\theta) - c(\frac{\theta}{2c})^2 &> 0 \\ \theta + Pr(\frac{\theta}{2c} \leq \frac{d}{2\alpha c + 2k})(-\theta) - c(\frac{\theta}{2c})^2 &> 0 \\ \theta + Pr(\alpha \leq \frac{dc - \theta k}{\theta c})(-\theta) - c(\frac{\theta}{2c})^2 &> 0 \\ \ddot{\theta} \equiv \theta &> 2(c + k) - 2\sqrt{c^2 - cd + 2ck + k^2} \end{aligned}$$

**Proof of Proposition 5:** Follows from the main text and above.

**Proof of Proposition 6:** Follows from the main text and above.

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