Decentralization, Repression, and Gambling for Unity

Michael Gibilisco, California Institute of Technology

I study a dynamic model of center-periphery relations that endogenizes the periphery's grievance via the legacy of repression. The center's key trade-off is that repression prevents the periphery from mobilizing today but increases grievances and thus the group's ability to mobilize tomorrow, whereas tolerating mobilization diminishes grievances. The model's predictions are path dependent, and a tipping point emerges among grievances. Below, the center tolerates mobilization, dissipating grievances. Above, the center preempts mobilization with perpetual repression or by granting independence, either intensifying grievances or breaking up the country, respectively. Only moderately aggrieved minorities have the opportunity and desire for mobilization. The model reconciles competing accounts of decentralization and secessionist mobilization, as the two have a nonmonotonic relationship; moderate decentralization levels are particularly susceptible to mobilization. Even decentralization optimally chosen by the center can be followed by outbursts of rebellion. The evolution of Basque secessionism helps to illustrate the model's dynamics.

When regional minorities demand greater autonomy, the government's response entails not only immediate costs and benefits but also long-term consequences for intergroup hostilities. During the Second Chechen War, for example, Russian artillery strikes appear to decrease insurgent attacks in the short run but increase insurgency in the long run once avengers flee to and reorganize in other areas (Lyall 2009; Souleimanov and Siroky 2016). In a similar vein, several scholars quantify the dynamic costs of repression in the Israeli-Palestinian conflict, where indiscriminately repressive policies may later encourage Palestinian violence against Israelis (Benmelech, Berrebi, and Klor 2015; Dugan and Chenoweth 2012; Haushofer, Biletzki, and Kanwisher 2010). In Spain, ETA (Euskadi Ta Askatasuna) terrorist activities spiked after Franco's death, and the country democratized even though the new constitution recognized the Basques as a protected community. Only after two decades of protected status did the regional population disavow the ETA, and the group disbanded.

How do the dynamic effects of repression and toleration shape center-periphery relations? What implications do they entail for the evolution of secessionist violence? In this article, I examine these questions by endogenizing the long-term costs and benefits of repression and toleration in an explicitly dynamic model. The model's novel ingredient is that interactions between a central government and peripheral minority are explicitly shaped by minority *grievances*, that is, the minority's latent animosity toward the government that arises from repression and disenfranchisement.

Although grievances arising from repression are central to a sociological literature studying mobilization (Gurr 1970; Hechter, Pfaff, and Underwood 2016; Loveman 1998), they have seen far less attention in political economy that traditionally focuses on grievances arising from the distribution of resources between those in and out of power (Acemoglu and Robinson 2006; Esteban et al. 2018; Shadmehr 2014).[1] Thus, a primary goal of the article is to develop a theoretical framework in which to explicitly study the relationship between grievances and minority mobilization. To do this, I focus on two characteristics of grievance that appear essential for a theory of intergroup conflict. First, policies associated with repression fuel psychological tensions between

Michael Gibilisco (michael.gibilisco@caltech.edu) is an assistant professor in the Department of Political Science at the California Institute of Technology, Division of Humanities and Social Sciences, Pasadena, CA 91125.

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1. Since Gurr (1970) and Horowitz (1985), grievances have a central place in work on rebellion and ethnic conflict, but cross-country regressions generally show little relationship between grievances and civil war onset (Collier and Hoeffler 2004; Fearon and Laitin 2003). As discussed below, more recent analyses demonstrate greater empirical support for grievance-based explanations using group-level or microlevel data.

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the center and the periphery, whereas toleration allows tensions to soften over time (Hechter et al. 2016; Horowitz 1985; Petersen 2002). Second, grievances are politically exploitable, and larger levels of antipathy toward the government imply that the periphery more successfully mobilizes for secession (Bueno de Mesquita 2010; Cederman, Weidmann, and Gleditsch 2011).

The baseline model incorporates these features by treating grievances as an evolving stock in a stochastic game. Within each of a potentially infinite number of interactions, the government first chooses whether to preemptively repress the periphery, grant it independence, or adopt a more hands-off approach. Independence ends the game in a peaceful parting of ways, while repression allows the government to maintain control for one period at some fixed cost. With the hands-off policy, the periphery decides whether to mobilize, and the probability with which mobilization succeeds in secession is increasing in the group's grievances. At the end of the period, if the government still maintains control, then the interaction is repeated. Grievances, however, evolve. Grievances increase in the next period if the government uses repression today but decrease if it refrains from repressing.

This article makes three main contributions. First, the analysis identifies the dynamic trade-offs that relate grievances to the government's treatment of regional minorities. The government wants to secure the region and minimize the probability of secession. It also wants to maximize the benefits of regional control, especially those that arise if grievances dissipate to peaceful levels. Because grievances and the minority's mobilization effectiveness are positively related, which goal the government prioritizes is explicitly determined by the current grievance level. If grievances are not too large, then incentives for peace dominate incentives for security, and the government *gambles for unity*. That is, it tolerates secessionist mobilization in the short run in order to establish enough amity for a stable peace in the long run. In contrast if grievances are very large, then the security effect dominates, and the government preempts mobilization with either repression or independence.

Thus, the government's decision to use repression and repression's effects on minority grievances reinforce each other over time. On the one hand, repression increases the minority's resentment toward the government, magnifying the future security benefits of repression. On the other, the government may reduce intergroup resentment toward peaceful levels by tolerating minority protest, thereby attenuating the future security costs associated with toleration. Most starkly, equilibrium behavior is path dependent, and a tipping point emerges among grievance levels. When grievances initially fall below the tipping point, they remain small, evolving toward zero over time. Above the tipping point, the government either perpetually represses, intensifying grievances, or grants independence, entailing the breakup of the country.

Second, I use the model to study the relationship between secession and decentralization, one of the most prominent tools that governments use to contain secessionism. Despite its importance, there is little scholarly consensus on the effectiveness of decentralization: some theories paint it as a long-term, stabilizing solution to conflict, but others consider it a violent interlude along the path to secession.[2] Reconciling these competing accounts, I find that decentralized institutions may have higher rates of minority unrest than their more centralized counterparts and vice versa. In particular, regions with moderate levels of decentralization are the most susceptible to secessionist mobilization. This result emerges because moderate amounts of decentralization encourage gambling for unity, as decentralization decreases the time required for grievances to reach peaceful levels, thereby making the strategy more attractive. Furthermore, decentralization dissuades the government from using repression to preempt mobilization, as the benefits from controlling the regional territory decrease with greater power-sharing arrangements. In contrast, small decentralization levels encourage the government to use repression, and large ones dissuade minorities from mobilizing altogether.

I also characterize the government's optimal decentralization level and its associated risk of secession. In some cases, the government decentralizes and deters the threat of secession, as in the United Kingdom after devolution in the late 1990s. In other cases, however, decentralization, even when optimally chosen by the central government, does not deter secession and may encourage minority mobilization, as in the Basque Country after the adoption of the Spanish Constitution. Such a dynamic emerges because the government only decentralizes in equilibrium if it expects to tolerate mobilization and temper grievances in the future. When decentralizing, the government therefore faces a trade-off between minimizing the risk of secession in the short run when grievances are large and securing a favorable degree of decentralization in the long run when grievances diminish. The government may risk mobilization today in order to achieve a more favorable decentralization arrangement in the long term if it expects the periphery's ability to mobilize to quickly dissipate

2. To see when decentralization intensifies secessionist mobilization, see Brancati (2006), Cornell (2002), and Lake and Rothchild (1996). To see when it mitigates mobilization, see Horowitz (1985), Siroky and Cuffe (2014), and Tranchant (2016). For mixed effects, see Cederman et al. (2015) and Saideman et al. (2002).

through diminished grievances. Although the government could always decentralize to such a degree that successfully prevents mobilization, it may refrain from doing so to avoid power-sharing arrangements that are overly gracious to the periphery once grievances diminish.

Third, grievances have a nonmonotonic relationship with secessionist violence where only moderately aggrieved minorities mobilize in equilibrium. With small grievances, the periphery has no desire to mobilize. With moderate grievances, the government gambles for unity and minority unrest erupts. At large grievances, however, a selection effect emerges because the government preempts mobilization by the most aggrieved minorities. As such, the government's use of repression or granting of independence masks the effects of enhanced grievances on civil-conflict onset. This matches patterns of secessionist violence associated with Basque independence, where violence immediately spikes after democratization and tapers off over time. Persistent repression in the Franco era would prevent Basque mobilization even though grievances accrue during constant repression. As Spain democratizes, however, repression becomes more costly, which encourages the government to gamble for unity. Thus, greater violence erupts even though grievances diminish over time.

MODELING GRIEVANCE

In this section, I justify two substantive assumptions concerning repression-based grievances that appear essential for a theory of ethnic conflict and underlie the model below. Together they explain the model's law of motion that governs the relationship between repression and the minority's mobilization capacity.

First, grievances arise through government's mistreatment of the minority group (Gurr 1970; Horowitz 1985). In the model, grievances increase when the government uses repression and decrease when it abstains from repression and tolerates potential protest. This dynamic matches studies that find state repression, especially when indiscriminate in nature, increases insurgent support and antiregime sentiments (Lyall et al. 2013; Opp and Roehl 1990). In contrast, more conciliatory actions allow intergroup resentment to reside, although substantial time may be required for peace to emerge. Even with large degrees of economic and political inequality that arise between captains and crew in the British Royal Navy, for example, Hechter et al. (2016) find that abstaining from severe repression reduces incidental grievances and intergroup strife. In the Israeli-Palestinian conflict, actions such as lifting curfews temper Palestinian terrorism (Dugan and Chenoweth 2012). Although repression is costly and increases intergroup resentment, it also entails benefits for the government as it prevents mobilization in the short run. The key tension is that repression secures the region for the government, but it intensifies intergroup antipathy in future interactions.[3]

Second, more intense grievances increase the periphery's ability to rally for secession. Empirically, there is substantial evidence that repression can backfire and incite resistance (Benmelech et al. 2015; Condra and Shapiro 2012; Kocher, Pepinsky, and Kalyvas 2011; Rasler 1996; Zwerman and Steinhoff 2005). In Pinochet's dictatorship, for example, grievances arising from indiscriminate repression intensify personal and collective support for antigovernment causes (Bautista et al. 2021; Loveman 1998). Note that this assumption does not imply that mobilization follows immediately from large grievances. In the model, mobilization will not occur (even with large grievances) if the peripheral elite chooses to stay at home or if the government preempts mobilization with repression or the granting of independence. Rather, if the peripheral elite mobilize their region for secession at more severe grievance levels, then they will have greater support from the local population, thereby increasing the chances of success.

The dynamic that repression increases the future mobilization capacity of the repressed can have several microfoundations, although the model abstracts away from specific mechanisms. Cederman et al. (2011) argue that grievances arising from repression and disenfranchisement serve as mobilization resources because they solidify collective identities and aid recruitment to antigovernment causes. Repression could also increase the regional population's relative benefits of independence via enhanced grievances. As in global games of protests and revolutions, larger benefits of successful collective action increase the proportion of the population willing to engage in costly antigovernment activities (Bueno de Mesquita 2010; Morris and Shadmehr 2018; Tyson and Smith 2018). Finally, outside of grievances, repression could have negative economic externalities that lead to higher unemployment (e.g., Bueno de Mesquita 2005).[4] When unemployment is rampant, regional elites more easily recruit high-quality activists, resulting in more effective mobilization. In contrast, if the government refrains from repression, the local economy could improve, diminishing the periphery's capacity.

Finally, this section elucidates how the current article departs from other dynamic games of conflict that treat the variable measuring the effectiveness of conflict (or mobilization) as exogenous (Acemoglu and Robinson 2006; Esteban

3. Of course, the government may have other tools at its disposal to contain mobilization apart from repression. One such prominent example is decentralization, which I investigate after developing a baseline model of grievance.

4. Dragu (2017), Rozenas (2020), and Tyson (2018) also endogenize the effectiveness of repression.

et al. 2018; Fearon 2004; Harish and Little 2017; Powell 2012). By permitting grievances to evolve endogenously, I study how today's interaction shapes tomorrow's trade-offs via changes in the periphery's ability to mobilize. Thus, the model relates to bargaining when competitors choose divisions of goods that influence future violence capabilities (Fearon 1996; Powell 2013). In these models, actors cannot commit to not increase demands after power changes. In contrast, in an extension to study decentralization, I consider a scenario in which bargaining entails substantial commitment.[5] Before the interaction, the government decentralizes by dividing regional benefits, a division persisting throughout the subsequent game unless the periphery gains independence. I demonstrate that secession can still break out even after the government credibly commits to positive benefits to the periphery.

MODEL

A central government, called the Center and labeled C, and a peripheral elite, called the Periphery and labeled P, struggle to control a regional territory.[6] The two groups interact for a potentially infinite number of periods $t \in \mathbb{N}$ and discount future interactions by $\delta \in (0, 1)$.

Period t's interaction is characterized by a commonly observed state variable $g^t \in \mathbb{N}_0$ that describes the peripheral population's current level of grievance toward the central government. Grievances determine the probability with which secessionist mobilization succeeds if launched by the Periphery. Label this probability $F(g^t) \in [0, 1]$, where F is weakly increasing in g^t and $\lim_{g \to \infty} F(g) = p$. As discussed above, a secessionist movement more likely succeeds as the region becomes more aggrieved. Furthermore, assume that secession is impossible when the local population has no grievances (i.e., $F(0) = 0$) and that there exists one grievance g for which mobilization is not deterministic (i.e., $F(g) \in (0, 1)$). While I focus on secession throughout, mobilization can be interpreted more broadly as an attempt to force concessions from the central government, including protest, violence, conflict, or support for a separatist party.

Once the Periphery gains control over its territory, it retains control in the subsequent interaction. In other words, independence is an absorbing state, essentially ending the game.[7] In contrast, if the Center controls the regional territory in period t, then figure 1 describes the interaction within the period, which proceeds as follows.

1. The Center chooses policy $r^t \in \{\varnothing, 0, 1\}$, deciding whether to grant independence ($r^t = \varnothing$), use preemptive repression ($r^t = 1$), or pursue a hands-off approach ($r^t = 0$).
2.
   a) If the Center grants independence ($r^t = \varnothing$), then the interaction ends with the Periphery gaining control over the region.
   b) If the Center represses ($r^t = 1$), then it retains control of the territory for the period.
   c) If the Center adopts a hands-off policy by neither repressing nor granting independence ($r^t = 0$), then the Periphery decides to mobilize a secessionist movement ($m^t = 1$) or not ($m^t = 0$). With probability $F(g^t)$, mobilization succeeds, and the Periphery gains independence, ending the interaction. With complimentary probability, mobilization fails, and the territory remains under Center control.

Payoffs are as follows. Actor i receives per period benefit $\pi_i^j \geq 0$ when j controls the territory, and I normalize the Center's benefit under Periphery control to zero, $\pi_C^P = 0$.[8] The benefits can include the region's tax surplus or control over its linguistic or cultural policies, which carry their own similarly tangible benefits such as trade, employment opportunities, and so on. Because independence is an absorbing state, if the Periphery gains control over the region, then actors receive total future benefits $\pi_i^P + \delta\pi_i^P + \delta^2\pi_i^P + \dots$, reducing to $\pi_i^P/(1 - \delta)$. Accordingly, figure 1 reports these total benefits after histories in which the Periphery gains territorial control. Repression and mobilization are costly, and they entail per period costs κ_C and κ_P for the Center and Periphery, respectively. I focus on generic cases in which $\kappa_C \neq \pi_C^C$. Finally if the Periphery successfully mobilizes a secessionist movement, then the Center receives a cost $-\psi$, where the parameter $\psi > 0$ captures the Center's preference for Center-initiated independence over a messier secessionist movement.

5. Early theories of decentralization focus on the trade-off between economies of scale and preference heterogeneity (e.g., Alesina and Spolaore 1997; Bolton and Roland 1997). Later theories investigate decentralization's effect on secessionist violence in a static framework without grievances (Anesi and De Donder 2013; Flamand 2019).

6. In Spain, the Center and Periphery would be the central government and Basque secessionist leaders, respectively. The Center and Periphery could also be the Israeli government and a Palestinian liberation faction.

7. This assumption is standard in dynamic models of civil conflict (e.g., Acemoglu and Robinson 2006; Esteban et al. 2018; Fearon 2004).

8. It is also possible to normalize the Periphery's payoff of Center control, π_P^C, to zero as well. Avoiding this normalization makes the decentralization application discussed below more intuitive.

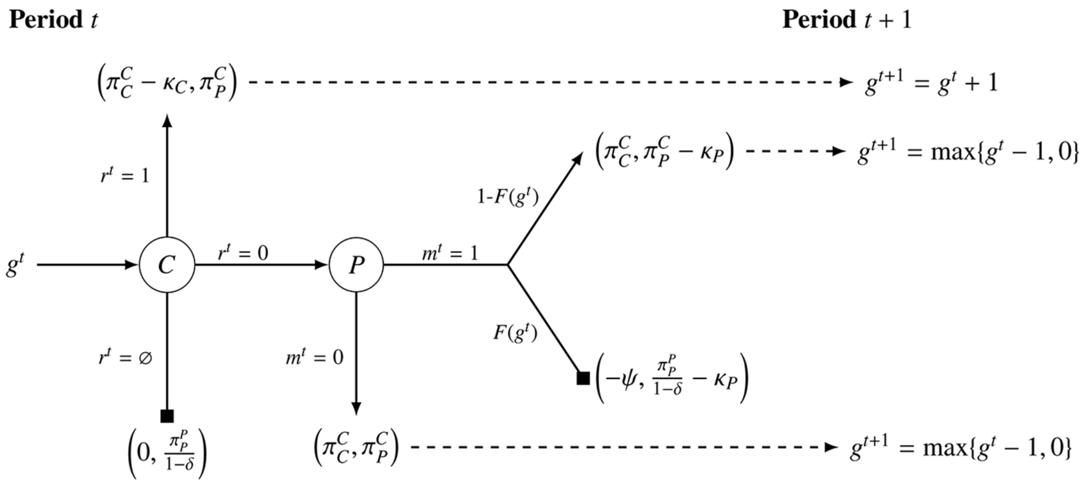

Figure 1. Period of interaction under the Center's control. For the Center, $r^t = \varnothing$ denotes independence; $r^t = 1$, repression; and $r^t = 0$, hands-off policy. For the Periphery, $m^t = 1$ denotes mobilize, and $m^t = 0$, no mobilization. Filled squares reference histories after which the Periphery gains independence, ending the interaction. Grievances, g^t, are commonly observed.

As long as the Center retains control over the local territory, the interaction within each period remains the same. Nonetheless, grievances change endogenously and evolve according to the history of government repression. As discussed in the previous section, repression increases the Periphery's animosity toward the Center in the future, but these grievances depreciate absent such repression. Formally, if today's grievances are g^t and the Center chooses policy r^t, then tomorrow's grievances g^{t+1} take the form

$$g^{t+1} = \begin{cases} g^t + 1 & \text{if } r^t = 1 \\ \max\{g^t - 1, 0\} & \text{otherwise.} \end{cases}$$

Along with the game's extensive form, this formalization has an intuitive interpretation. In the short run, preemptive repression prevents regional protests and mobilization within period t, but in the long run, repression increases regional grievances in period $t + 1$.[9] When the Center refrains from repressing the regional populace, their resentment toward the government depreciates tomorrow although the Periphery may mobilize today.[10] Large grievances result in a Periphery with a stronger ability for protests and mobilization, and smaller grievances diminish this ability.

I focus the analysis on interesting cases, barring certain parameter values leading to trivial interaction. This focus translates into assumptions 1 and 2.

9. It may appear that repression has no persistent benefits on P's potential for mobilization, but this is not the case as repression's benefits persist for an entire period. Because the length of a period is arbitrary, the model captures situations in which repression's security benefits deteriorate more quickly than its effects on regional grievances.

10. Although grievances increase by one unit after repression, this does not rule out the possibility of increasing or decreasing returns to grievances, which could be captured by the shape of function F.

Assumption 1. The Periphery values independence; that is,

$$\pi_P^P - \pi_P^C > \frac{(1-\delta)\kappa_P}{p}.$$

Assumption 1 implies that the Periphery mobilizes if the Center were to never grant independence and the Periphery has capacity that would arise from infinitely large grievances; that is, $\lim_{g\to\infty} F(g) = p$. To see this, note that the Periphery receives a total payoff of $\pi_P^C/(1-\delta)$ if it never mobilizes and the Center never grants independence. If the Periphery were to mobilize once with the largest probability of success p and never mobilize afterward, then its expected payoff would be $p(\pi_P^P/(1-\delta)) + (1-p)(\pi_P^C/(1-\delta)) - \kappa_P$, assuming the Center never grants independence. Assumption 1 holds if and only if the latter payoff is larger than the former. The next assumption says that successful secessionist movements impose nontrivial costs on the Center.

Assumption 2. Secession is sufficiently costly; that is,

$$\psi > \min\left\{\frac{\pi_C^C(1-p)}{p}, \frac{(1-\delta)\kappa_C - p(\pi_C^C - \delta\kappa_C)}{p(1-\delta)}\right\}.$$

The assumption implies that the Center prefers to use repression or grant independence rather than risk secession when the Periphery mobilizes with capacity p. It is satisfied for all $\psi > 0$ when $p = 1$, so the Center's cost of successful secession can be arbitrarily close to zero if $p = 1$. To see the substance behind assumption 2, note that if the Center never uses repression or grants independence and the Periphery mobilizes in every period with probability of success p, then the Center's payoff is $[(1-p)\pi_C^C - p\psi]/[1-(1-p)\delta]$. The second assumption holds if and only if this value is smaller than $\max\{[(\pi_C^C - \kappa_C)/(1-\delta)], 0\}$. Here, $(\pi_C^C - \kappa_C)/(1-\delta)$ is the Center's payoff from repressing in every period, and 0 is its payoff from granting independence.

The model is a dynamic game with complete information. As such, I characterize Markov perfect equilibria, that is, subgame perfect equilibria in stationary Markovian strategies (equilibria hereafter). A mixed strategy for the Center is a function $\sigma_C : \{\varnothing, 0, 1\} \times \mathrm{N}_0 \to [0,1]$, where $\sigma_C(r; g)$ denotes the probability of choosing policy $r \in \{\varnothing, 0, 1\}$ at grievance g before the Periphery gains independence. For the Periphery, a strategy is a function $\sigma_P : \mathrm{N}_0 \to [0,1]$, where $\sigma_P(g)$ denotes the probability of mobilization (conditional on C choosing $r = 0$) at grievance g. A strategy profile σ is a pair $\sigma = (\sigma_C, \sigma_P)$. Finally, $V_i^\sigma(g)$ denotes i's continuation value from beginning the game at grievance g when both actors subsequently play according to profile σ. Appendix A (apps. A–I are available online) contains formal statements of expected utilities and the equilibrium definition.

Before proceeding, several remarks on the game's setup are in order. First, the cost of repression enters separably into the Center's payoff rather than multiplicatively (as in Acemoglu and Robinson 2006; Shadmehr 2014). The latter approach effectively constrains the cost of repression to fall between 0 and π_C^C. As I show below, larger costs of repression, $\kappa_C > \pi_C^C$, are necessary for the Center to grant independence and for cycles of repression and mobilization to emerge.

Second, the Center's per period payoff after failed mobilization is equal to its payoff after no mobilization. Instead I could allow the Center to incur cost ψ regardless of mobilization's outcome, in which case ψ would be interpreted as the Center's cost of secessionist mobilization rather than successful secession. With this alteration, the substantive behavior in equilibrium would not change, although the specific functional form of the equilibrium cutpoints would. What is key in the subsequent analysis is that the Center is not indifferent between granting independence today (payoff of zero) and the outcome arising from successful mobilization (payoff of $-\psi$). This strict preference is required for the Center to grant independence with positive probability, and I choose the current specification to best highlight this connection.[11]

Third, grievances decrease after the government abstains from repression even after failed mobilization. As discussed in the "Modeling Grievance" section, this reflects work demonstrating that actions such as lifting curfews in the Palestinian territories or avoiding floggings in the British Navy reduce intergroup resentment. Similarly, if the Periphery stages a secessionist movement but fails because of a lack of local turnout, then regional support for secession could decrease in the future.[12] Finally, the substantive features of equilibria would not change if this assumption were relaxed to some degree; for example, grievances depreciate with probability $\beta \in (0,1]$ after failed mobilization. The main assumptions driving the results are that (*a*) grievances are unlikely to increase after the center abstains from repression and that (*b*) they decrease with positive probability.

EVOLUTION OF GRIEVANCES

To explicate the relationship between grievances and equilibrium behavior, I partition grievances into three levels, small, medium, and large, and detail behavior within each level. Subsequently, I summarize the results and describe the substantive implications.

Small grievances

Grievances are small when successful mobilization is so unlikely that the Periphery chooses not to mobilize regardless of the Center's strategy. Mobilization cannot be optimal at grievance g if its costs exceeds its relative benefits:

$$\kappa_P > \underbrace{F(g)}_{\text{Pr success}} \left[\overbrace{\frac{\pi_P^P}{1-\delta}}^{\text{Value of secession}} - \underbrace{\pi_P^C - \delta V_P^\sigma(\max\{g-1, 0\})}_{\text{Value of union}} \right]. \tag{1}$$

The right-hand side of the inequality denotes the relative benefits of mobilization at grievance g, where the Periphery compares its value of successful secession to its value of remaining in the country and weights this difference by the probability of success. Because the Periphery is always guaranteed at least π_P^C in every period, its continuation value $V_P^\sigma(g')$ at grievance g' is bounded below by $\pi_P^C/(1-\delta)$ in any equilibrium σ. Combining this lower bound with equation (1) means that the cutpoint between small and moderate grievances can be defined as

11. Similarly, the qualitative nature of the equilibria would not change if the Periphery received a cost of secession $\psi_P > 0$ after successful mobilization. This addition would have an effect similar to increasing the costs of mobilization.

12. Notice that diminished grievances can have relatively minor consequences: even though grievance decrease after failed mobilization, the change from $F(g)$ to $F(g-1)$ may be small or even zero.

$$g^- \equiv \max\left\{ g \in \mathrm{N}_0 \;\middle|\; \kappa_P \geq F(g)\frac{\pi_P^P - \pi_P^C}{1-\delta} \right\},$$

which exists when the Periphery values autonomy.[13]

Proposition 1. If grievances are small, then the Periphery never mobilizes, the Center neither represses nor grants independence, and grievances dissipate on the equilibrium path. That is, $g \leq g^-$ implies $\sigma_P(g) = 0$ and $\sigma_C(0; g) = 1$ in every equilibrium σ.

The proof (and subsequent proofs) is in the appendix, but the intuition here is straightforward. At small grievances, there is no desire for mobilization. It is not likely to succeed so the Periphery does not attempt to secede. Anticipating this, the Center adopts a hands-off approach, which decreases grievances and ensures that the peaceful interaction between the two actors is self-enforcing. If assumption 1 fails, then all grievances are essentially small, in which case the proposition characterizes all equilibria.

Moderate grievances

When grievances are larger than g^-, the probability of successful mobilization is substantial enough that the Periphery may rally for secession. When the Center expects mobilization, it faces a dynamic trade-off. On the one hand, the Center wants to achieve the long-term benefits of small grievances and a lasting peace by allowing grievances to diminish to peaceful levels below g^-. On the other hand, the Center aims to minimize the security risks that occur when the Periphery mobilizes and potentially secedes from the country. The risk of secession is short term in the sense that, if the Center tolerates mobilization for a finite number of periods, then (with positive probability) secession will not occur, grievances will dissipate to peaceful levels, and national unity will emerge.

The magnitude of this trade-off depends on current grievances, specifically, on the number of periods required for grievances to dissipate to peaceful levels. To quantify the trade-off, consider the Center's continuation value, $\tilde{V}_C(g)$, from beginning at grievance g and continuing to neither repress nor grant independence in all future periods while the Periphery mobilizes if and only if $g > g^-$. Thus, $\tilde{V}_C(g)$ takes the form

$$\tilde{V}_C(g) = \begin{cases} \dfrac{\pi_C^C}{1-\delta} & \text{if } g \leq g^- \\ \underbrace{-F(g)\psi}_{\text{Mobilization succeeds}} + \underbrace{(1-F(g))(\pi_C^C + \delta \tilde{V}_C(g-1))}_{\text{Mobilization fails}} & \text{if } g > g^-. \end{cases} \tag{2}$$

In other words, $\tilde{V}_C(g)$ denotes the Center's expected utility from *gambling for unity* at grievance g, that is, from tolerating secessionist mobilization until grievances reach peaceful levels. This expected utility is strictly decreasing in the current level of grievance when $g \geq g^-$ because larger grievances imply that the Center will need to wait additional periods before a lasting peace emerges, thereby raising the risk successful mobilization in the gambling for unity dynamic. Under assumption 2, $\lim_{g\to\infty} \tilde{V}_C(g) < \max\{[(\pi_C^C - \kappa_C)/(1-\delta)], 0\}$, which is the Center's payoff from choosing between indefinite repression or granting independence. Thus, there exists a cutpoint $g^+ \in \mathrm{N}_0$ such that

$$g < g^+ \text{ if and only if } \tilde{V}_C(g) > \max\left\{\frac{\pi_C^C - \kappa_C}{1-\delta}, 0\right\}. \tag{3}$$

Equation (3) says that when grievances are moderate ($g^- < g < g^+$), the Center's desire for a lasting peace dominates its security concerns about short-term mobilization. Although it always has independence or repression as a potential recourse, the Center refrains form using these tactics in order to reduce grievances to peaceful levels. For large grievances ($g \geq g^+$), however, the Center would prefer either repressing indefinitely or granting independence to the gambling for unity dynamic.

Proposition 2. If grievances are moderate, then the Periphery always mobilizes, the Center neither represses nor grants independence, and grievances dissipate on the equilibrium path. That is, $g \in (g^-, g^+)$ implies $\sigma_P(g) = 1$ and $\sigma_C(0; g) = 1$ in every equilibrium σ.

Thus, (g^-, g^+) denotes the gambling for unity interval where the Center tolerates some secessionist mobilization in hopes that grievances will dissipate to peaceful levels before losing control of the region. Furthermore, lemma 3 in the appendix demonstrates that if assumption 1 holds but assumption 2 does not, then all grievances are either moderate or small, in which case propositions 1 and 2 characterize all equilibria.

Large grievances

Grievances are large above g^+. In this case equation (3) says that the Center prefers to either use indefinite repression or grant independence rather than gamble for unity with the

13. When defining g^-, I am implicitly considering generic cases in which $\kappa_P > F(g^-)[(\pi_P^P - \pi_P^C)/(1-\delta)]$; otherwise, the Periphery is indifferent between mobilizing and not at g^- if the expression held with equality.

Periphery. This creates a selection effect at large grievances where the government preempts secessionist mobilization, and the Periphery may not have the opportunity to mobilize precisely because it has large grievances.

How the Center avoids gambling for unity depends on whether it can effectively repress the regional minority. To distinguish two cases, say the regime has high (low) repression capacity if the cost of repression is small (large); that is, $\kappa_C < \pi_C^C$ ($\kappa_C > \pi_C^C$). The cost of repression varies across countries depending on a host of factors including the Center's military capabilities or the country's regime type, as autocrats may more easily repress than leaders of democracies because of lower executive constraints. The next proposition characterizes equilibrium behavior in both high- and low-capacity regimes at large grievances.[14]

Proposition 3. If grievances are large ($g \geq g^+$), then the following items hold.

1. With high repression capacity ($\kappa_C < \pi_C^C$), the Center always represses, the Periphery always mobilizes, and grievances grow on the equilibrium path. That is, $\sigma_C(1; g) = 1$ and $\sigma_P(g) = 1$ in every equilibrium σ.
2. With low repression capacity ($\kappa_C > \pi_C^C$), the Center grants independence with positive probability on the equilibrium path, the equilibrium path never transitions to small or moderate grievances $g' < g^+$, and the Periphery eventually gains control over its territory in every equilibrium.

With high repression capacity, the Center uses indefinite repression to prevent mobilization at large grievances, increasing grievances and ensuring repression is used in subsequent interactions. Notice that the Periphery certainly mobilizes, but mobilization occurs off the equilibrium path. That is, the Periphery has the desire to mobilize but not the opportunity because of repression.

When the Center has higher repression costs, equilibrium behavior is more complicated, however. Notice that there is some indeterminacy in proposition 3.2, and the Periphery may be mobilizing on the equilibrium path with positive probability depending on specific parameter values—I examine this possibility below. Nonetheless, proposition 3.2 still produces clear substantive predictions. With low repression capacity and large grievances, the equilibrium path never transitions to moderate or small grievances. The Center must grant independence with positive probability, and the Periphery ultimately gains control over its own territory, although it may arise from secessionist mobilization or Center-granted independence.

Dynamics and implications

There exists considerable path dependence in center-periphery relationships. To see this, figure 2 summarizes the dynamics of the baseline model. Its horizontal axis denotes the exogenous cost of repression, and its vertical axis denotes the endogenous grievance levels. The remaining lines carve out the state and parameter spaces, where the solid line represents the cutpoint g^+ as a function of repression's cost. The labels describe behavior emerging under their respective area. As described above, there is some indeterminacy in the region labeled by independence, which corresponds to low repression capacity in proposition 3. In this region, the Periphery will ultimately gain independence, but it can be peacefully granted by the Center or won through successful mobilization.

Small changes in initial grievances can have large effects on the long-term evolution of grievances and the Center's treatment of the regional minority.[15] The cutpoint g^+ demarcates two basins of attraction. When grievances are initially small or moderate, they evolve toward zero in equilibrium as the Center tolerates mobilization. If initial grievances are moderate, then the Center gambles for unity even though the dynamic entails losing the region with positive probability. In contrast, when grievances are large, they remain large and never dissipate to peaceful levels. Perpetual repression, which eliminates the possibility of secession, emerges in regimes with high repression capacity, whereas the Periphery ultimately gains independence in regimes with low capacity.

The relationship between grievances and secessionist conflict can be nonmonotonic. This is seen in figure 3, which graphs the equilibrium path in high-capacity regimes. Notice that the probability of secession is only positive when grievances are moderate and the government gambles for unity. When grievances are small, there is no desire for mobilization from the Periphery even though the government tolerates the possibility. When grievances are large, the Center represses, suppressing the opportunity for mobilization. This matches patterns in Lacina (2014, 733), who investigates ethnic violence in India and concludes that "a

14. As with small grievances, the result is stated for the generic case when $\tilde{V}_C(g^+) > \max\{[(\pi_C^C - \kappa_C)/(1 - \delta)], 0\}$.

15. There are several sources of grievances apart from repression because they reflect policies of past regimes, the success of nation-building exercises, and the strength of the regional identity, for example. These factors vary across countries and regions within countries, and this variation can be captured in the model with initial grievances, g^1.

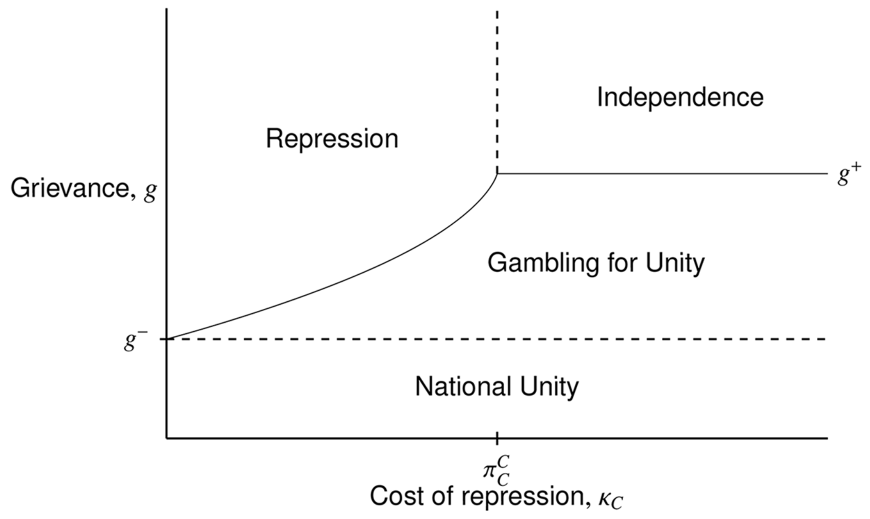

Figure 2. Summary of the dynamics in the baseline model

linear relationship between objective measures of grievance and militancy is therefore thwarted by governments' credible threat of repression against the most marginal, aggrieved interests."

More broadly, this relates to the elusive empirical relationship between grievances and civil conflict (Collier and Hoeffler 2004; Fearon and Laitin 2003). Although others have illustrated that macromeasures of grievances have empirical shortcomings (Cederman et al. 2011), the analysis here suggests that reduced-form correlations would generally underestimate the effects of grievances on secessionist conflict even if grievances were perfectly observable. When grievances are small or moderate, grievances are essentially positively correlated with the risk of secessionism. Below g^+, smaller grievances decrease the Periphery's mobilization capacity, and it becomes less likely to mobilize in equilibrium. If grievances are large, then the relationship is more complicated, as the Center's equilibrium strategy generally prevents mobilization with repression or independence. Here, these observations have minority groups with considerable grievances and mobilization capacity, but the opportunity for mobilization is limited. The correlation between grievances and civil conflict is attenuated when data fall above the gambling for unity interval.

A final implication of this discussion is that the Periphery's expected utility has a nonmonotonic relationship with grievances and therefore its mobilization capacity. Assuming the gambling for unity interval is nonempty ($g^+ - g^- > 1$) and high repression capacity, the Periphery's equilibrium continuation value $V_P^\sigma(g)$ is uniquely maximized at grievance $g^+ - 1$ because this level permits mobilization for the greatest number of periods and with the highest capacity on the equilibrium path. Hence, regional activists who attempt to stir up grievances face an important risk in regimes

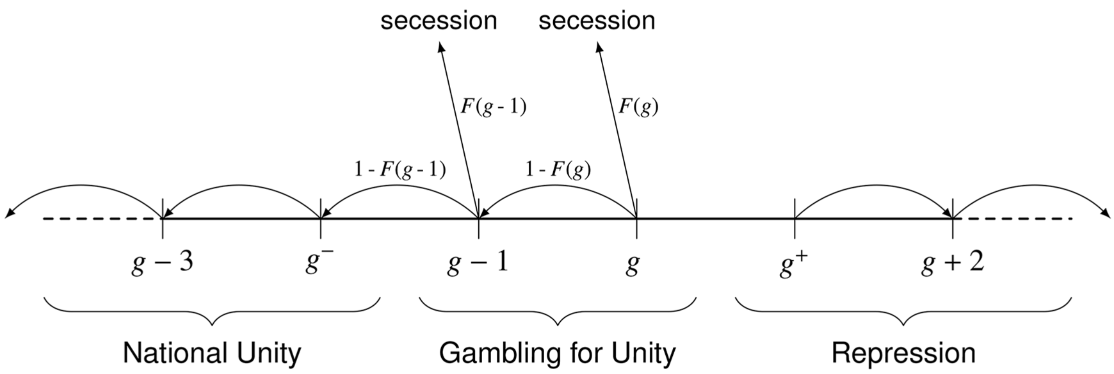

Figure 3. Equilibrium path in regimes with high repression capacity, $\kappa_C < \pi_C^C$

with high repression capacity. There is a window of opportunity for regional grievances to be effective and secession to occur with positive probability. If they create too much resentment in the regional population, then the government represses and eliminates the possibility of independence.

Repression in low-capacity regimes

Can repression occur in regimes even when it is not per period profitable? Say an equilibrium σ *supports long-term repression* if there exists grievance g such that the Center represses with positive probability for all grievances larger than g; that is, $\sigma_C(1; g') > 0$ for all $g' \geq g$. Say an equilibrium σ *supports cycles of repression and mobilization* if there exists grievance g such that (*a*) the Center represses with positive probability at g (i.e., $\sigma_C(1; g) > 0$), (*b*) the Periphery mobilizes with positive probability along the equilibrium path at $g + 1$ (i.e., $\sigma_C(0; g+1)\sigma_P(g+1) > 0$), and (*c*) mobilization can fail at $g + 1$ (i.e., $F(g+1) < 1$). If σ supports cycles at grievance g, then the equilibrium path can alternate between repression at grievance g and mobilization at $g + 1$ for a finite number of periods with positive probability.

Proposition 4.

1. In low capacity regimes ($\kappa_C > \pi_C^C$), no equilibrium supports long-term repression.
2. If $\kappa_C > (1+\delta)\pi_C^C$, then the Center never represses with positive probability in any equilibrium.
3. There exists a set of parameters such that the regime has low capacity, and an equilibrium exists that supports cycles of repression and mobilization.

Thus, long-term repression is not possible in regimes with low repression capacity, but the Center may use more short-term repression in a cycle. Why does the Center repress in equilibrium even when its per period repression payoff is negative? The answer involves mixed strategies. In appendix G, I detail a numerical example in which the equilibrium path of play cycles between grievances g^+ and $g^+ + 1$. At grievance g^+, the Center mixes between repression and granting independence while the Periphery mobilizes with certainty off the equilibrium path. At grievance $g^+ + 1$, the Center tolerates mobilization with certainty, and the Periphery mobilizes with probability strictly between zero and one.

In the appendix, I demonstrate that such behavior is part of an equilibrium under nontrivial parameters, but the intuition for mixing involves intertemporal incentives. The Center mixes at grievance g^+ to make the Periphery indifferent between mobilizing and staying at home at grievance $g^+ + 1$. With positive probability the Center grants independence at g^+, depressing incentives for mobilization at $g^+ + 1$ because the Periphery expects concessions in the future and mobilization is costly. With positive probability the Center represses, increasing incentives for mobilization at $g^+ + 1$ because the Periphery does not expect concessions. The Periphery then mixes at grievance $g^+ + 1$ to make the Center indifferent at g^+. It mobilizes with positive probability, thereby increasing the Center's incentives to cut its losses and run via independence (at g^+), and it stays at home with positive probability increasing the Center's incentive to repress. Although the Center incurs a negative per period payoff by repressing at g^+, tomorrow, at grievance $g^+ + 1$, it expects a positive payoff because the Periphery stays at home with probability sufficiently large.[16]

Substantively, cycles capture patterns between government repression and popular mobilization that emerge in well-documented empirical cases including the Iranian Revolution (Rasler 1996) and the Israeli-Palestinian conflict (Haushofer et al. 2010), among others (Carey 2006). Although these cycles are often attributed to tit-for-tat behavior, they arise in this setting where Markov perfect equilibria exclude punishment strategies. Finally, the model uncovers two necessary conditions for cycles to emerge on the equilibrium path: repression is costly but not overwhelmingly prohibitive, $\pi_C^C < \kappa_C < (1+\delta)\pi_C^C$, and initial grievances are large, $g^1 \geq g^+$.

DECENTRALIZATION AND PROSPECTS FOR PEACE

I now use the model to study the relationship between decentralization and mobilization and illustrate how grievances mediate the relationship. The exercise helps reconcile competing findings in the literature that suggest decentralization both encourages and discourages secessionism. To do this, I simplify the model's payoffs assuming that complete control over the region is worth π to both actors. The parameter $d \in [0, \pi]$ denotes the degree of decentralization. If the country remains together at the end of a period, then the Center receives $\pi - d$ and the Periphery receives d, regardless of the actions chosen in the period.[17] If the Periphery

16. Specifically, the Center's indifference condition at g^+ is $0 = \pi_C^C - \kappa_C + \delta V_C^{\sigma}(g^+ + 1)$. Note that the logic above explains how to construct the indifference equations and why they might be satisfied, but the proof rules out additional profitable deviations, e.g., the Center repressing at $g^+ + 1$ or the Periphery not mobilizing at g^+ in the off-the-path scenario.

17. It could be the case that when the Center represses, its per period payoff is $\pi - \kappa_C$ rather than $\pi - d - \kappa_C$, in which case repression extracts the entire value of the region. For $d > 0$, this is isomorphic to reducing the cost of repression, an assumption that seems unappealing given the substantive literature.

gains independence, then the Center and Periphery receive 0 and π in every remaining period, respectively. In terms of the other parameters, this means a shift to $\pi_C^C = \pi - d$ and $\pi_P^C = d$, while $\pi_C^P = 0$ and $\pi_P^P = \pi$.

Two comments are in order before proceeding. First, I consider *credible* decentralization when the Center can credibly commit to a transfer $d \in [0, \pi]$ throughout the interaction. Rudolph and Thompsom (1985) discuss how decentralization better deters ethnoterritorial mobilization than one-off policies, and Alonso (2012) accredits this to decentralization's ability to overcome commitment problems. The assumption captures the idea that devolved or decentralized political powers are externally enforced through protected institutions such as constitutions.

Second, decentralization does not affect the Periphery's mobilization ability, F, either directly or through the Periphery's grievances. There exist competing a priori expectations connecting decentralization and minority mobilization. Decentralization could increase the Periphery's mobilization technology through the allocation of fiscal and symbolic resources (Cornell 2002). Yet decentralization could also decrease the Periphery's antipathy toward the Center (and hence mobilization ability) because power-sharing institutions represent major policy and symbolic concessions. I sidestep these issues by treating decentralization as a division of the regional benefit. As such, the results below demonstrate that decentralization can still encourage mobilization in equilibrium even though it has no direct effect on the Periphery's mobilization capacity. In addition, the Center may still optimally decentralize even though such concessions carry no grievance-reducing benefit.

Exogenous decentralization

In this section, I treat decentralization as an exogenous parameter and illustrate comparative statics. Decentralization affects the two cutpoints defining the gambling for unity interval, $g^-[d]$ and $g^+[d]$, which are now parameterized by the degree of decentralization $d \in [0, \pi]$.[18] The key effect of decentralization is that larger values decrease the relative gains of controlling the territory for both actors. When the stakes of conflict decrease, the Center and the Periphery have less incentive to take costly actions to maintain or win territorial control, respectively. By decreasing the Periphery's relative benefit of secessionist mobilization, decentralization expands the set of small grievances.

18. If assumption 1 does not hold at level d, then all grievances are essentially small, and I write $g^-[d] = \infty$. If assumption 2 does not hold at level d, then there are no large grievances, and I write $g^+[d] = \infty$.

Observation 1. Decentralization (weakly) increases the cutpoint between small and moderate grievances, g^-. If $d \geq \pi - [(1 - \delta)\kappa_P/p]$, then all grievances are small.

Decentralization's effect on the cutpoint between moderate and large grievances is more nuanced. Because decentralization increases the region of small grievances, it also decreases the security risks associated with gambling for unity. That is, at larger degrees of decentralization, the Center would wait fewer periods for grievances to dissipate to peaceful levels than at smaller degrees, making gambling for unity more attractive. This is one reason why decentralization may increase the cutpoint g^+. Decentralization also decreases the Center's benefits of regional control, however. Thus, the Center's incentives to gamble for unity or use costly repression decrease with more decentralization. All together, the former effect suggests that more decentralization should decrease g^+, but the latter suggests that more decentralization should increase this cutpoint.

Observation 2. Decentralization has countervailing effects on the cutpoint between moderate and large grievances, g^+.

Figure 4 graphs the gambling for unity interval as a function of decentralization when ψ is large (fig. 4*A*) and small (fig. 4*B*). Below $\pi - \kappa_C$, more decentralization increases the lower bound of large grievances through two forces. First, gambling for unity becomes relatively more attractive as grievances take fewer periods to depreciate to peaceful levels, and second, perpetual repression becomes less attractive as the Center's benefit of regional control relative to its cost of repression decreases. Immediately above $\pi - \kappa_C$, however, greater decentralization first decreases the cutpoint as the Center becomes more hesitant to gamble for unity when decentralization allocates a substantial amount of concessions to the Periphery. Ultimately, g^+ increases to positive infinity with very large levels of decentralization because the costs of mobilization drown out the Periphery's relative benefits of regional control, making all grievances small.

How does this discussion relate to the likelihood of secessionist mobilization? Consider initial grievances g^1 in figure 4. When decentralization is small, initial grievances fall above the gambling for unity interval ($g^1 \geq g^+[d]$). As such, perpetual repression prevents mobilization. When decentralization is large, initial grievances fall below the interval ($g^1 \leq g^-[d]$), and national unity emerges because decentralization is large enough so the Periphery will not mobilize. Finally when decentralization is moderate, initial grievances

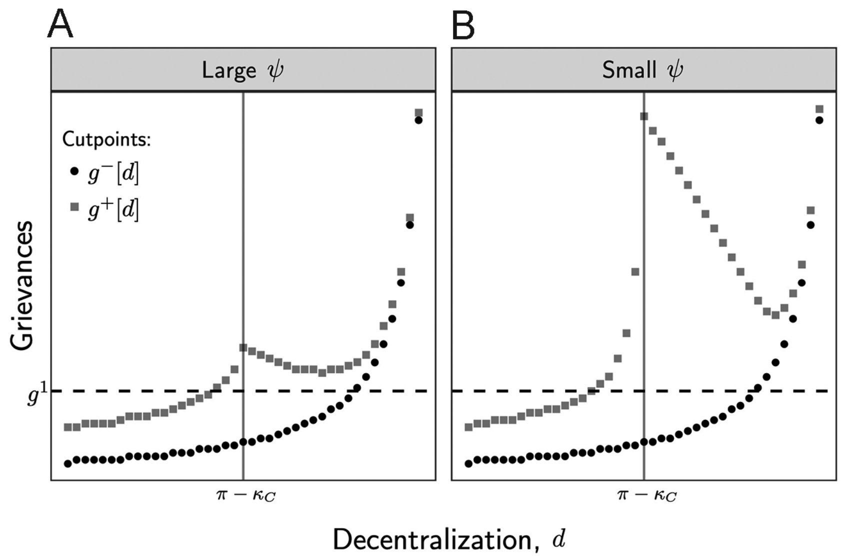

Figure 4. Decentralization and the gambling for unity interval: $g^-[d]$ and $g^+[d]$ (Y-axis) for a fixed decentralization level (X-axis), with a large cost of secession $\psi = 3\pi/2$ (A) and a small cost $\psi = \pi/2$ (B). The remaining parameters take on the following values: $\pi = 100$, $\kappa_C = 50$, $\kappa_P = 50$, $\delta = 0.95$, and $F(g) = 1 - (0.01g + 0.001g^2 - 1)^{-1}$.

fall in the gambling for unity interval, and secession occurs with positive probability.[19] Thus, the relationship between decentralization and secessionist mobilization can be nonmonotonic, and the next proposition establishes this more generally.

Proposition 5. Assume the regime has a high capacity for repression ($\kappa_C < \pi$) and initial grievances are large ($g^1 \geq g^+[0]$). There exist cutpoints $\underline{d}$ and $\bar{d}$ such that $0 \leq \underline{d} < \bar{d} < 1$ and secession occurs with positive probability on the equilibrium path only if decentralization is moderate (i.e., $\underline{d} < d < \bar{d}$).

In other words, moderate levels of decentralization are particularly prone to mobilization when grievances are large and the regime has high repression capacity. As in the example, increases in decentralization, especially moderate ones, may lead to a greater risk of mobilization if they move the country into the gambling unity interval from above. If these increases are sufficiently large, then national unity emerges as the country moves below the gambling for unity interval, in which case secessionist mobilization would not arise.

Endogenous decentralization

Would forward-looking governments ever choose decentralization levels that encourage gambling for unity? To answer this, consider a game when the Center chooses a decentralization level $d^* \in [0, \pi]$ once in period $t = 0$. Subsequently in periods $t > 0$, the Center and Periphery play the game as described above with decentralization fixed at d^*. An equilibrium is a level of decentralization d^* and collection of strategy profiles $\sigma = (\sigma^d)$ for each $d \in [0, 1]$.[20]

Define a cutpoint $\hat{d}(g)$ that denotes the minimum level of decentralization at which grievance g is small (i.e., $d \in [0, \pi]$ such that $g^-[d] \leq g$). Thus, $\hat{d}$ takes the form

$$\hat{d}(g) = \begin{cases} \max\left\{\pi - \dfrac{(1-\delta)\kappa_P}{F(g)}, 0\right\} & \text{if } F(g) > 0 \\ 0 & \text{otherwise.} \end{cases} \quad (4)$$

The next proposition characterizes the dynamics arising after the Center optimally decentralizes. Note that it restricts attention to cases in which repression and decentralization are substitutes. As such, it demonstrates that decentralization can emerge endogenously even in the most discouraging environments.

Proposition 6. If repression is not too costly (i.e., $\kappa_C < \max\{(\pi/2), \pi - \hat{d}(g^1)\}$), then the following items hold.

1. If the Center decentralizes ($d^* > 0$) in equilibrium (d^*, σ), then it neither represses nor grants independence along the equilibrium path.
2. There exists a set of parameters in which the government decentralizes ($d^* > 0$) and no mobilization occurs along the path of play in the unique equilibrium (d^*, σ).

19. Figure 6 (available online) graphs the probability of secessionist conflict as a function of decentralization when the equilibrium path starts at g^1, using the numerical example in fig. 4.

20. If (d^*, σ) is an equilibrium, then for all $d \in [0, \pi]$ profile σ^d is characterized by propositions 1–4.

3. There exists a set of parameters in which the government decentralizes ($d^* > 0$) and gambling for unity occurs along the path of play in the unique equilibrium (d^*, σ).

Why is endogenous decentralization sometimes followed by a long-term peace and other times by mobilization? A commitment problem emerges in the model even though the Center can credibly commit to decentralization throughout the interaction. When the government decentralizes, it anticipates that grievances and thus the Periphery's capacity to mobilize will decrease along the equilibrium path (proposition 6.1). Decentralization is persistent, but grievances are transitory, however. Thus, the Center has an incentive to choose a relatively small degree of decentralization that appeases moderately aggrieved groups tomorrow but does not prevent mobilization today. If the country survives the temporary mobilization, then the Center will enjoy the long-term benefits of peace with a more favorable decentralization arrangement. Of course, a larger degree of decentralization would deter mobilization today, but tomorrow it would leave the Center with a power-sharing arrangement that is overly gracious to the Periphery once its grievances diminish.

It is difficult to derive necessary and sufficient conditions describing when the Center would take such a risk, but the examples used to construct the equilibria in propositions 6.2 and 6.3 are illuminating (see app. I). Across the two examples, the payoff parameters and initial grievances are identical, but F, the mapping between grievances and mobilization capacity, changes. In proposition 6.2, F is constructed such that $F(g) = c > 0$ for all $g \in \{1, \dots, g^1\}$, where $g^1 > 1$ is the initial level of grievance. Under the numerical parameters provided, the Center chooses decentralization $d^* = \hat{d}[g^1]$ and the Periphery does not mobilize along the subsequent path of play in equilibrium. In proposition 6.3, however, F is constructed such that there is a sharp increase from $g^1 - 1$ to g^1. Now, $F(g) = c$ for $g \in \{1, \dots, g^1 - 1\}$, but $F(g^1) = 3c$. The Center chooses decentralization level $d^* = \hat{d}[g^1 - 1]$ in equilibrium, in which case the Periphery mobilizes once along the subsequent path of play. If mobilization fails, grievances dissipate to peaceful levels and unity emerges. Thus, when the Periphery's capacity for mobilization decreases sufficiently quickly vis–à-vis a drop in grievance, the Center may risk mobilization today in order to achieve a more favorable decentralization arrangement in the long term.

ILLUSTRATION: BASQUE SEPARATISM

Although an empirical analysis of the model is beyond this article's scope, it is useful nonetheless to see how the model's dynamics map onto a historical example. Patterns of secessionist violence associated with Basque nationalism before and after Spanish democratization illustrate the model's predictions and comparative statics.

Spanish democratization led to two key structural changes. First, executive constraints increase as Spain transitions to democracy from autocracy. According to the Polity IV database, Franco is among the most unconstrained autocrats, and the Spanish prime minister is either on par with or subordinate to the legislature after democratization. In addition, the new constitution guarantees minority (e.g., Basque and Catalan) representation in both legislative chambers, and its judiciary consistently scores among the most independent in the world (Linzer and Staton 2015).

Second, Spain adopts relatively moderate degrees of decentralization. On one hand, the new constitution fast-tracks the Basque's route to autonomy, establishing the territory's regional legislature. On the other hand, the central government retains exclusive policy-making authority over a variety of issues including labor, trade, immigration, civil rights, and the administration of justice. "Although creating a federation was not the original desire or intent of most of the 'framers,'" writes Agranoff (1996, 385), "neither was a highly centralized unitary system." To some degree, Spain's constitutional court maintains the state of affairs. In 1984, it declares unconstitutional a law requiring regional legislators to seek prior approval from the national government before enacting new policies, and it blocks a regional independence referendum in 2017.

In the context of the model, both structural changes suggest that, all else equal, Franco will be more likely to use perpetual repression as a strategy for dealing with aggrieved regional groups, whereas democrats in Spain will be more likely to gamble for unity. Stronger executive constraints lead to higher costs of repression (Hill and Jones 2014), and the cost of repression strictly increases the cutpoint between moderate and large grievances, thereby expanding the gambling for unity interval. As for decentralization, proposition 5 and the example above demonstrates that moderate levels of decentralization are particularly prone to gambling for unity when grievances—like those the Basques accrued during the Franco years—are large.[21]

21. One might be concerned that Basque grievances dissipate after decentralization. Generally, these concerns are not warranted given the case. As Conversi (1997, 149) writes, "Since the Spanish state was still perceived as the main enemy, the whole democratization process was seen merely as a facade disguising the perennial Spanish attempt to eliminate the Basque identity." The political party Batasuna was intimately related to the ETA and continued to receive 10%–20% of votes in the Basque regional legislature until the mid-1990s.

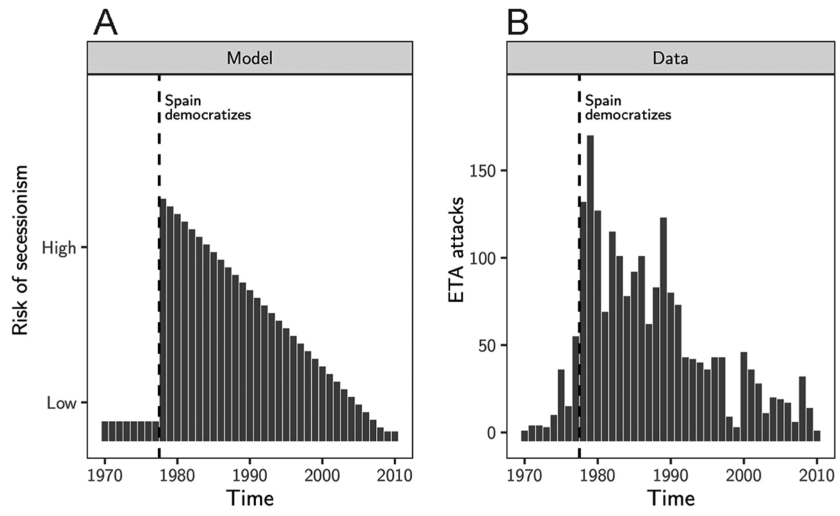

Figure 5. Predictions and data before and after Spanish democratization. *A*, Predicted risk of secessionism from Spain's Basque region, $\sigma_C(0; g^t)\sigma_P(g^t)F(g^t)$ in the model. *B*, Number of terrorist attacks in Spain attributed to the ETA by the Global Terrorism Database. The predemocratization predictions are calibrated assuming a constant rate of violence to match the mean in the data. The postdemocratization slope and *y*-intercept were calibrated using least squares.

How do these predictions relate to observed behavior? Before democratization the Basque country suffered under a regime of constant repression. During the Spanish Civil War, several Basque provinces are labeled traitor regions and lose their regional autonomy. State-sponsored oppression culminates in the bombing of Guernica on a day when civilians routinely gather to trade. After the war, Franco's dictatorship imprisons more than 4,000 Basque individuals on the pretext of separatism and bans the Basque language (Conversi 1997). The Basque government along with more than 100,000 civilians flees in exile (Legarreta 1984). During the 1960s, the ETA emerges as the leading Basque separatist group, completing its first assassination in 1968. Historians trace the rise of the ETA to grievances arising during Franco's repression (Conversi 1997; Lecours 2007).

After Franco's death in 1975, Spain holds general elections in 1977, adopting a democratic constitution and recognizing the Basques as a protected nationality in 1978. A year later Madrid cedes partial control over the local police force in the Guernica statutes. In 1987 the central government ends its use of death squads created to fight the ETA, and the interior minister is later convicted for overseeing their use.

The model makes two predictions about the evolution of secessionist violence before and after democratization. These predictions are illustrated in figure 5*A*, which graphs the model's predicted risk of secession

$$\sigma_C(0; g^t)\sigma_P(g^t)F(g^t)$$

given the hypothesized strategies before and after democratization. Before democratization, the model predicts a constant, small rate of secessionist activities due to perpetual repression during the Franco regime, even though grievances were large; that is, $\sigma_C(1; g^t) = 1$, and $\sigma_C(0; g^t) = 0$. Postdemocratization, the regime's cost of repression increases, and a moderate level of decentralization is adopted. As Basque grievances accrued during Franco's dictatorship, they would not be trivially small to prevent mobilization. Faced with large grievances and higher costs of repression, the Center would adopt a gambling for unity strategy when dealing with secessionist mobilization. That is, $\sigma_P(g^t) = 1$, and $\sigma_C(0; g^t) = 1$. The model predicts that secessionist activities peak right after democratization and decrease thereafter as the democratic government generally refrains from repression and grievances diminish.

An albeit cursory examination of ETA-attributed violence indicates that the model's predictions fit empirical patterns. Figure 5*B* graphs the number of terrorist attacks attributed to the ETA from the Global Terrorism Database, which contains data between 1970 and 2010.[22] There are 35 recorded ETA attacks in 1975 (Franco's death). This number jumps to 132 attacks in 1978 (democratization) and dissipates to zero in 2010. Not shown in the graph are the anti-ETA protests throughout the Basque country in 1997. The ETA then suspends operations in 2010–11 and disarms in 2017.

More broadly, this exercise illustrates how the nonmonotonic relationship between grievances and secessionist activities can appear in observational data. Namely, the government's repression strategy creates a selection effect in which the peripheral minority only has the opportunity to mobilize at small and moderate levels of grievances, which

22. Data from 1993 are missing; I linearly interpolate using the 1992 and 1994 values.

explains the relatively low number of attacks in Franco's Spain. In contrast after Franco dies and Spain democratizes, grievances may have depreciated, but the new constitution encourages gambling for unity by increasing the cost of repression and by adopting moderate decentralization levels. Overall, scholars should generally think twice before using observed levels of mobilization to proxy resentment toward the government. Repression may suppress mobilization by the most aggrieved groups.

CONCLUSION

This article presents a new theory of center-periphery relations and focuses on a dynamic tension that arises when repression has short-term security benefits but long-term costs through its effects on the repressed group's grievances. The model demonstrates that path dependence is inherent in ethnic conflict: if initial grievances are moderate, then they dissipate over time, although temporary secessionism may erupt. If they are large, however, then they remain so and entail either perpetual repression or the breakup of the country.

The model also illustrates that moderate decentralization levels encourage gambling for unity and thus secessionist violence. With more decentralization, minority groups with smaller grievances are less likely to mobilize for secession. Because of this, decentralization decreases the time required for grievances to reach peaceful levels, thereby attenuating the security costs associated with gambling for unity. This creates a second effect, where decentralization incentivizes the government to avoid repression and to lay the foundation for a lasting peace by tolerating unrest in the interim. Thus, depending on initial levels and the magnitude of the changes, greater decentralization may foster or dampen secessionism.

The theory highlights the interaction between latent grievance and the majority's long-run policy choices in determining a country's evolution toward or away from peace. This generates intricate relationships among phenomena of interest, hindering efforts to correctly specify a reduced-form empirical model even with appropriate measures of grievance. Because different grievance levels produce different probability distributions over mobilization, repression, and the granting of independence, one possibility is to treat grievances and their law of motion as parameters to be estimated in a structural exercise. This motivates future empirical work to study the relationship between grievances and conflict using a sufficiently theoretical analysis.

Although the model is explicitly designed to study center-periphery relations with endogenous grievances, future work could more thoroughly incorporate other factors that may affect opportunities for insurgency—that is, the greed factors in the comparative politics literature. One complication that arises, however, is that these factors may affect several of the model's parameters simultaneously. For example, secessionist leaders may have a favorable geography of rebellion because their region may be mountainous or far from the nation's capital (Fearon and Laitin 2003). In these cases, the Periphery's costs of mobilization may be smaller and the Center's costs of repression may be larger. Furthermore, if greed factors (along with grievances) also affect the Periphery's mobilization capacity, then one particularly pressing concern is whether capacity satisfies increasing or decreasing differences with respect to greed and grievance. Answering this question would require modeling a specific mechanism connecting repression to future mobilization capacity.

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Appendix

A Continuation Values and Expected Utilities

Let $\bar{V}_i$ denote i's continuation value after a history in which the Periphery was won control of the territory. These values are independent of a strategy profile σ and take the form $\bar{V}_C = 0$ and $\bar{V}_P = \frac{\pi_P^P}{1-\delta}$.

Let $V_i^\sigma(g)$ denotes i's continuation value from beginning the game with grievance g when the Periphery has not won control of its territory and actors subsequently playing according to profile σ. In a similar vein, $U_C^\sigma(r;g)$ and $U_P^\sigma(m;g)$ denote the Center and Periphery's dynamic payoffs from choosing $r \in \{\varnothing, 0, 1\}$ and $m \in \{0,1\}$ given grievance g when actors subsequently play according to profile σ. For the Center, $U_C^\sigma(r;g)$ takes the following form:

$$U_C^\sigma(r;g) = \begin{cases} 0 & \text{if } = \varnothing \\ \pi_C^C - \kappa_C + \delta V_C^\sigma(g+1) & \text{if } r = 1 \\ -\sigma_P(g)F(g)\psi + (1-\sigma_P(g)F(g))\left(\pi_C^C + \delta V_C^\sigma(\max\{g-1,0\})\right) & \text{if } r = 0. \end{cases}$$

For the Periphery, $U_P^\sigma(m; g)$ denotes the its dynamic payoff conditional on having reached its decision node, i.e., the Center chooses $r = 0$, in state g. Thus, $U_P^\sigma(m; g)$ takes the form

$$U_P^\sigma(m; g) = \begin{cases} -\kappa_P + F(g)\bar{V}_P + (1 - F(g)) \left(\pi_P^C + \delta V_P^\sigma(\max\{g - 1, 0\})\right) & \text{if } m = 1 \\ \pi_P^C + \delta V_P^\sigma(\max\{g - 1, 0\}) & \text{if } m = 0. \end{cases} \tag{5}$$

With this notation in hand, the next definition states the equilibrium conditions.

Definition 1 *Strategy profile σ is an equilibrium if the following hold:*

$$\begin{aligned} \sigma_C(r; g) > 0 &\implies U_C^\sigma(r; g) \geq U_C^\sigma(r'; g), \\ \sigma_P(g) > 0 &\implies U_P^\sigma(1; g) \geq U_P^\sigma(0; g), \text{ and} \\ \sigma_P(g) < 1 &\implies U_P^\sigma(0; g) \geq U_P^\sigma(1; g) \end{aligned}$$

for all grievance g and polices $r, r' \in \{\varnothing, 0, 1\}$.

Because the game is a dynamic game with a countable state space and a finite number of actions, an equilibrium from Definition 1 exists in mixed strategies. Notice that for some grievance g, the Center's continuation value, $V_C^\sigma(g)$, takes the form

$$V_C^\sigma(g) = \sum_{r \in \{\varnothing, 0, 1\}} \sigma(r; g) U_C^\sigma(r; g).$$

Thus, if σ is an equilibrium and $\sigma(r; g) > 0$ for some grievance g and action $r \in \{\varnothing, 0, 1\}$, then $V_C^\sigma(g) = U_C^\sigma(r; g)$ or else C has a deviation by playing some $r' \in \{\varnothing, 0, 1\}$.

B Proof of Proposition 1

Proposition 1 *If grievances are small, then the Periphery never mobilizes, the Center neither represses nor grants independence, and grievances dissipate on the equilibrium path. That is, $g \leq g^-$ implies $\sigma_P(g) = 0$ and $\sigma_C(0; g) = 1$ in every equilibrium σ.*

Proof. The proof that $g \leq g^-$ implies the Periphery does not mobilize with positive probability is covered in the main text. We prove that $g \leq g^-$ implies the Center does not repress or grant independence with positive probability. To see this, suppose $\sigma_C(r; g) > 0$ for some $g \leq g^-$, $r \neq 0$, and equilibrium σ. There are two cases.

Case 1: $r = 1$, repression. Then, C's expected utility is

$$\begin{aligned} U_C^\sigma(1; g) &= \pi_C - \kappa_C + \delta V_C^\sigma(g+1) \\ &\leq \pi_C - \kappa_C + \delta \frac{\pi_C^C}{1-\delta} \\ &< \frac{\pi_C^C}{1-\delta}. \end{aligned}$$

However, $\frac{\pi_C^C}{1-\delta}$ is C's continuation value if it takes action $r = 0$ in all future periods because grievances will never increase and P will never mobilize with positive probability along the subsequent path of play. Hence, taking action $r = 0$ in all future periods is a profitable deviation, a contradiction.

Case 2: $r = \varnothing$, independence. Then, C's expected utility is

$$U_C^\sigma(\varnothing; g) = 0 < \frac{\pi_C^C}{1-\delta}.$$

As in Case 1, this inequality implies taking action $r = 0$ in all future periods is a profitable deviation, a contradiction. $\square$

C Properties of $\tilde{V}_C$

We first state and prove three Lemmas concerning properties of $\tilde{V}_C$.

Lemma 1 *1.* $\tilde{V}_C(g) > \frac{-F(g)\psi + (1-F(g))\pi_C^C}{1-(1-F(g))\delta}$ *for all* g *such that* $F(g) > 0$.

2. $\tilde{V}_C(g-1) > \tilde{V}_C(g)$ *for all* $g > g^-$.

3. If Assumption 1 holds, then $\lim_{g\to\infty} \tilde{V}_C(g) = \frac{-p\psi + (1-p)\pi_C^C}{1-(1-p)\delta}$.

Proof. To show (1), consider some g such that $F(g) > 0$ and $F(g') = 0$ for all $g' < g$. Such a g exists because $F(0) = 0$ and $\lim_{g\to\infty} F(g) = p > 0$. In addition, $F(g) < 1$ because there exists at least one g such that $F(g) \in (0, 1)$ by assumption. Then we have

$$\begin{aligned} \tilde{V}_C(g) &= -F(g)\psi + (1 - F(g)) \left(\pi_C^C + \delta \frac{\pi_C^C}{1-\delta} \right) \\ &= (1 - (1 - F(g))\delta) \frac{-F(g)\psi + (1 - F(g))\pi_C^C}{1 - (1 - F(g))\delta} + (1 - F(g))\delta \frac{\pi_C^C}{1-\delta} \\ &> \frac{-F(g)\psi + (1 - F(g))\pi_C^C}{1 - (1 - F(g))\delta}, \end{aligned}$$

where the strict inequality follows because $F(g) \in (0,1)$

For induction, consider some g such that $F(g) > 0$ and $F(g-1) > 0$, which implies $g - 1 > 0$. Suppose the inequality holds for all $g' < g$ such that $F(g') > 0$. Then we have

$$\begin{aligned}
\tilde{V}_C(g) &= -F(g)\psi + (1-F(g))(\pi_C^C + \delta \tilde{V}_C(g-1)) \\
&> -F(g)\psi + (1-F(g))\left(\pi_C^C + \delta \frac{-F(g-1)\psi + (1-F(g-1))\pi_C^C}{1-(1-F(g-1))\delta}\right) \\
&\geq -F(g)\psi + (1-F(g))\left(\pi_C^C + \delta \frac{-F(g)\psi + (1-F(g))\pi_C^C}{1-(1-F(g))\delta}\right) \\
&= \frac{-F(g)\psi + (1-F(g))\pi_C^C}{1-(1-F(g))\delta},
\end{aligned}$$

where the third line follows because the fraction $\frac{-F(g)\psi+(1-F(g))\pi_C^C}{1-(1-F(g))\delta}$ is decreasing in $F(g)$.

To show (2), note that it must hold when $g = g^- + 1$, because $\psi > 0$ and $F(g) > 0$ as $g > g^-$. Now consider some $g > g^- + 1$. For induction, suppose $\tilde{V}_C(g'-1) > \tilde{V}_C(g')$ for all g' such that $g^- < g' < g$. Then

$$\begin{aligned}
\tilde{V}_C(g) &= -F(g)\psi + (1-F(g))(\pi_C^C + \delta \tilde{V}_C(g-1)) \\
&\leq -F(g-1)\psi + (1-F(g-1))(\pi_C^C + \delta \tilde{V}_C(g-1)) \\
&< -F(g-1)\psi + (1-F(g-1))(\pi_C^C + \delta \tilde{V}_C(g-2)) \\
&= \tilde{V}_C(g-1),
\end{aligned}$$

where the second line follows because

$$\tilde{V}_C(g) > \frac{-F(g)\psi + (1-F(g))\pi_C^C}{1-(1-F(g))\delta} \geq -\psi$$

and $F(g)$ is increasing in g.

To prove (3), consider a sequence $\{g_n\}_{n=1}^{\infty}$ such that $\lim_{n\to\infty} g_n = \infty$ and $g_n < g_{n+1}$. Then the sequence $\left\{\tilde{V}_C(g_n)\right\}_{n=1}^{\infty}$ is weakly decreasing due to above arguments. In addition, $\left\{\tilde{V}_C(g_n)\right\}_{n=1}^{\infty}$ is bounded below because C's payoffs are finite and C discounts with rate $\delta < 1$. Thus, $\left\{\tilde{V}_C(g_n)\right\}_{n=1}^{\infty}$ has a limit, call it L. If the Periphery does value independence, the we have

$$\begin{aligned}
L &= \lim_{n\to\infty} \tilde{V}_C(g_n) \\
&= \lim_{n\to\infty} F(g_n)(-\psi) + \lim_{n\to\infty} (1-F(g_n))(\pi_C^C + \delta \tilde{V}_C(g_n - 1)) \\
&= -p\psi + (1-p)\left(\pi_C^C + \delta L\right),
\end{aligned}$$

which implies $L = \frac{-p\psi + (1-p)\pi_C^C}{1-(1-p)\delta}$. $\square$

The next Lemma demonstrates that C's gambling for unity utility, $\tilde{V}_C$ is a lower bound on its equilibrium expected utility, V_C^σ.

Lemma 2 *For all grievances g, $V_C^\sigma(g) \geq \tilde{V}_C(g)$ in every equilibrium σ.*

Proof. To see this, suppose not. That is, suppose there exist grievance g and equilibrium σ such that $V_C^\sigma(g) < \tilde{V}_C(g)$. Then by the construction of $\tilde{V}_C$ and Proposition 1, $g > g^-$, or else $V_C^\sigma(g) = \frac{\pi_C^C}{1-\delta} = \tilde{V}_C$.

Next consider a deviation for C, labeled σ'_C, such that $\sigma'_C(0; g') = 1$ for all $g' \leq g$. I now demonstrate that $V_C^{\sigma'}(g) \geq \tilde{V}_C(g)$, where $\sigma' = (\sigma'_C, \sigma_P)$, which implies σ'_C is a profitable deviation because $\tilde{V}_C(g) > V_C^\sigma(g)$ by supposition.

The proof is by induction. The inequality, $V_C^{\sigma'}(g') \geq \tilde{V}_C(g')$, holds when $g' \leq g^-$ by the construction of $\tilde{V}_C$ and Proposition 1. Now consider some $g' > g^-$ and suppose $V_C^{\sigma'}(g'') \geq \tilde{V}_C(g'')$ for all $g'' < g'$. Then we have

$$\begin{aligned}
V_C^{\sigma'}(g') &= -\sigma_P(g')F(g')\psi + (1-\sigma_P(g')F(g'))\left(\pi_C^C + \delta V_C^{\sigma'}(g'-1)\right) \\
&\geq -\sigma_P(g')F(g')\psi + (1-\sigma_P(g')F(g'))\left(\pi_C^C + \delta \tilde{V}_C(g'-1)\right) \\
&\geq -F(g')\psi + (1-F(g'))\left(\pi_C^C + \delta \tilde{V}_C(g'-1)\right) \\
&= \tilde{V}_C(g').
\end{aligned}$$

Hence, $V_C^{\sigma'}(g) \geq \tilde{V}_C(g)$ as required. $\square$

The final Lemma demonstrates that the cutpoint g^+ exists if and only if Assumptions 1 and 2 hold.

Lemma 3 *The cutpoint g^+ solving Equation (3) exists if and only if the Periphery values independence (Assumption 1) and secession is costly (Assumption 2).*

Proof. For necessity, suppose Assumptions 1 and 2 hold. Then Lemma 1 and Assumption 1 imply that $\tilde{V}_C(g)$ is weakly decreasing in g and converges to

$$\lim_{g\to\infty} \tilde{V}_C(g) = \frac{-p\psi + (1-p)\pi_C^C}{1-(1-p)\delta}.$$

Because $\tilde{V}_C(g) = \frac{\pi_C^C}{1-\delta} > 0$ for all $g \leq g^-$ and $\tilde{V}_C(g)$ is strictly decreasing in g when $g > g^-$, we require

$$\frac{-p\psi + (1-p)\pi_C^C}{1-(1-p)\delta} < \max\left\{\frac{\pi_C^C - \kappa_C}{1-\delta}, 0\right\}. \tag{6}$$

We now demonstrate that the inequality in Equation (6) holds when $\pi_C^C > \kappa_C$, the proof when $\pi_C^C < \kappa_C$ is identical. Suppose $\pi_C^C - \kappa_C > 0$. Then Equation (6) reduces to

$$\frac{-p\psi + (1-p)\pi_C^C}{1-(1-p)\delta} < \frac{\pi_C^C - \kappa_C}{1-\delta},$$

which is equivalent to

$$\psi > \frac{(1-\delta)\kappa_C - p(\pi_C^C - \delta\kappa_C)}{p(1-\delta)}.$$

Because $\pi_C^C - \kappa_C > 0$, Assumption 2 reduces to

$$\psi > \min\left\{\frac{\pi_C^C(1-p)}{p}, \frac{(1-\delta)\kappa_C - p(\pi_C^C - \delta\kappa_C)}{p(1-\delta)}\right\} = \frac{(1-\delta)\kappa_C - p(\pi_C^C - \delta\kappa_C)}{p(1-\delta)}.$$

Thus, the inequality in Equation (6) holds, and therefore g^+ exists.

For sufficiency, suppose Assumption 1 does not hold, then $\kappa_P \geq F(g)\frac{\pi_P^P - \pi_P^C}{1-\delta}$ for all grievances g. Thus, $\tilde{V}_C(g) = \frac{\pi_C^C}{1-\delta} > \max\left\{\frac{\pi_C^C - \kappa_C}{1-\delta}, 0\right\}$ for all grievances g. Now suppose Assumption 1 holds but not Assumption 2. Then Lemma 1 implies that, for all g

$$\tilde{V}_C(g) \geq \frac{-p\psi + (1-p)\pi_C^C}{1-(1-p)\delta} \geq \max\left\{\frac{\pi_C^C - \kappa_C}{1-\delta}, 0\right\}. \qquad \square$$

D Preliminary Results

In this section, we state and prove two technical results that are essential to characterize equilibria in the remainder of the paper.

Lemma 4 *If $\sigma_C(1; g) > 0$ and $\sigma_C(0; g+1) = 1$ for some grievance g, then $\sigma_P(g+1) < 1$ in every equilibrium σ.*

Proof. Suppose not. Then there exists a g such that $\sigma_C(1;g) > 1$, $\sigma_C(0;g+1) = 1$ and $\sigma_P(g+1) = 1$ in equilibrium σ. We can write $V_C^\sigma(g+1)$ as

$$\begin{aligned} V_C^\sigma(g+1) &= -F(g+1)\psi - (1-F(g+1))\left(\pi_C^C + \delta V_C^\sigma(g)\right) \\ &= -F(g+1)\psi - (1-F(g+1))\left(\pi_C^C + \delta U_C^\sigma(1;g)\right) \\ &= -F(g+1)\psi - (1-F(g+1))\left(\pi_C^C + \delta\left(\pi_C^C - \kappa_C + \delta V_C^\sigma(g+1)\right)\right). \end{aligned}$$

Solving reveals that

$$V_C^\sigma(g+1) = \frac{(1-F(g+1))(\pi(1+\delta) - \delta\kappa_C) - F(g+1)\psi}{1-(1-F(g+1))\delta^2}.$$

By Lemma 2, $V_C^\sigma(g+1) \geq \tilde{V}_C(g+1)$. By Lemma 1.1,

$$\tilde{V}_C(g) > \frac{(1-F(g+1))\pi_C^C - F(g+1)\psi}{1-(1-F(g+1)\delta)}.$$

Stringing these two inequalities together,

$$V_C^\sigma(g+1) > \frac{(1-F(g+1))\pi_C^C - F(g+1)\psi}{1-(1-F(g+1)\delta)}.$$

Substituting the closed form solution for $V_C^\sigma(g+1)$ into the inequality above and solving for κ_C reveals that

$$\kappa_C < \frac{F(g+1)(\pi_C^C + \psi(1-\delta))}{1-(1-F(g+1))\delta}.$$

To derive a contradiction, consider a deviation in which C plays $r=1$ with probability 1 in all future periods beginning at grievance $g+1$. This is a profitable deviation if and only if

$$V_C^\sigma(g+1) < \frac{\pi_C^C - \kappa_C}{1-\delta} \iff \kappa_C < \frac{F(g+1)(\pi_C^C + \psi(1-\delta))}{1-(1-F(g+1))\delta}.$$

However, $\kappa_C < \frac{F(g+1)(\pi_C^C+\psi(1-\delta))}{1-(1-F(g+1))\delta}$ as shown above. Hence, C can profitably deviate by repressing in all future periods. □

Lemma 5 *Consider some $g > g^-$ and equilibrium σ. If (a) $\sigma_C(0;g-1) = 1$ or $\sigma_C(0;g) = 1$ and (b) $\sigma_C(\varnothing;g') = 0$ for all $g' < g$, then $\sigma_P(g) = 1$.*

Proof. Suppose not. That is, consider some equilibrium σ and grievance $g > g^-$ such that

(a) $\sigma_C(0;g-1) = 1$ or $\sigma_C(0;g) = 1$,

(b) $\sigma_C(\varnothing;g') = 0$ for all $g' < g$, and

(c) $\sigma_P(g) < 1$.

Because σ is an equilibrium, we require $U_P^\sigma(0;g) \geq U_P^\sigma(1;g)$ to rule out profitable deviations, which is equivalent to

$$\kappa_P \geq F(g)\left[\bar{V}_P - \pi_P^C - \delta V_P^\sigma(g-1)\right].$$

Because $\sigma_C(0;g-1) = 1$ or $\sigma_C(0;g) = 1$, the path of play will never reach a grievance larger than g. Because $\sigma_C(\varnothing;g') = 0$ for all $g' \leq g$, the Center will never grant independence along the subsequent path of play. Recall that when the C represses, P stage payoff is π_P^C, which is its payoff if it chooses not to mobilize, and even if C does repress with positive probability at some $g' < g$, the subsequent path of play will still never reach a grievance larger than g. Then $g > g^-$ implies $V_P^\sigma(g-1)$ is bounded above by

$$\frac{F(g)\bar{V}_P + (1-F(g))\pi_P^C - \kappa_P}{1-(1-F(g))\delta},$$

which is P's payoff if its grievance never depreciates along the path of play, C never represses, and P always mobilizes. Combining these two inequalities, we require

$$\begin{aligned}\kappa_P &\geq F(g)\left[\bar{V}_P - \pi_P^C - \delta V_P^\sigma(g-1)\right] \\ &\geq F(g)\left[\bar{V}_P - \pi_P^C - \delta\frac{F(g)\bar{V}_P + (1-F(g))\pi_P^C - \kappa_P}{1-(1-F(g))\delta}\right].\end{aligned}$$

Solving for κ_P implies

$$\kappa_P \geq F(g)\frac{\pi_P^P - \pi_P^C}{1-\delta},$$

that is, $g \leq g^-$. But this contradicts the assumption $g > g^-$. □

E Proof of Proposition 2

This section characterizes equilibrium behavior at moderate grievances.

We now prove that $g < g^+$ implies $\sigma_C(0;g) = 1$ in every equilibrium σ, that is, the Center neither represses nor grants independence with moderate grievances. The result requires preliminary lemmas. Notice that if either Assumption 1 or 2 does not hold, $\tilde{V}_C(g) > \max\left\{\frac{\pi_C^C - \kappa_C}{1-\delta}, 0\right\}$ for all g, and we can set $g^+ = \infty$ in the subsequent results.

Lemma 6 *If $g < g^+$, then $\sigma_C(\varnothing;g) = 0$ in every equilibrium σ.*

Proof. If not, then $V_C^\sigma(g) = U_C^\sigma(\varnothing; g) = 0$. If $g < g^+$, this contradicts Lemma 2 because $\tilde{V}_C(g) > 0 = V_C^\sigma(g)$. $\square$

Lemma 7 *For all g, $\sigma(r; g) > 0$ imply $\sigma(\varnothing; g+1) = 0$ in every equilibrium σ.*

Proof. First, if $\kappa_C < \pi_C^C$, then C cannot grant independence with positive probability in any equilibrium. Doing so would result in a payoff of 0, but C could repress for all future periods, giving a payoff of $\frac{\pi_C^C - \kappa_C}{1-\delta} > 0$. Thus, consider the case where $\pi_C^C - \kappa_C < 0$. Suppose $\sigma_C(r; g) > 0$ for some g and $\sigma_C(\varnothing; g+1) > 0$. Then

$$\begin{aligned} V_C^\sigma(g) &= U_C^\sigma(r; g) \\ &= \pi_C^C - \kappa_C + \delta V_C^\sigma(g+1) \\ &= \pi_C^C - \kappa_C + \delta U_C^\sigma(\varnothing; g) \\ &= \pi_C^C - \kappa_C < 0, \end{aligned}$$

but this means C can profitably deviate at g by granting independence, i.e., σ is not an equilibrium. $\square$

Lemma 8 *Fix an equilibrium σ. Then there does not exist a $g < g^+$ such that $\sigma_C(1; g') > 0$ for all $g' \geq g$.*

Proof. Suppose not and consider such a $g < g^+$ where $\sigma_C(1; g') > 0$ for all $g' \geq g$ in equilibrium σ. Then

$$V_C^\sigma(g) = U_C^\sigma(1; g) = \pi_C^C - \kappa_C + \delta V_C^\sigma(g+1).$$

Because $V_C(g') = U_C^\sigma(r; g')$ for all g' such that $\sigma_C(r; g') > 0$, similar substitutions imply $V_C^\sigma(g) = \frac{\pi_C^C - \kappa_C}{1-\delta}$. However, $g < g^+$ implies

$$\tilde{V}_C(g) > \frac{\pi_C^C - \kappa_C}{1-\delta} = V_C^\sigma(g),$$

by Equation(3). However, $\tilde{V}_C(g) > V_C^\sigma(g)$ contradicts Lemma 2. $\square$

With these lemmas in hand, we now state the main result of the section.

Proposition 2 *If grievances are moderate, then the Periphery always mobilizes, the Center neither represses nor grants independence, and grievances dissipate on the equilibrium path. That is, $g \in (g^-, g^+)$ implies $\sigma_P(g) = 1$ and $\sigma_C(0; g) = 1$ in every equilibrium σ.*

Proof. We first prove prove that $\sigma_C(0;g)=1$ when $g\in(g^-,g^+)$ and σ is an equilibrium. Suppose not. By Lemma 6, $\sigma_C(1;g)>0$. Furthermore, C represses with positive probability for at most some finite k periods by Lemma 8. That is, there exists a $\bar{g}$ such that $\sigma_C(1;g')>0$ for $g'=g,...,\bar{g}$ and $\sigma_C(1;\bar{g}+1)=0$. By Lemma 7, this implies $\sigma_C(0;\bar{g}+1)=1$. In addition, Proposition 1 and Lemma 7 imply $\sigma_C(\varnothing;g')=0$ for all $g'<\bar{g}$. Thus, Lemma 5 and $\sigma_C(1;\bar{g}+1)=0$ imply P mobilizes at $\bar{g}+1$ with probability 1. However, $\sigma_C(1;\bar{g})>0$, $\sigma_C(0;\bar{g}+1)=1$, and $\sigma_P(\bar{g}+1)=1$ contradict Lemma 4. To pin down P's strategy at $g\in(g^-,g^+)$, note that $\sigma_C(0;g')=1$ for all $g'<g^+$. Then Lemma 5 implies $\sigma_P(g)=1$. $\square$

F Proof of Proposition 3

We now characterize equilibrium behavior at large grievances ($g\geq g^+$). We consider the generic case in which there does not exist $g\in\mathbb{N}_0$ such that $\tilde{V}_C(g)=\max\left\{\frac{\pi_C^C-\kappa_C}{1-\delta},0\right\}$, that is $\tilde{V}_C(g^+)<\max\left\{\frac{\pi_C^C-\kappa_C}{1-\delta},0\right\}$, where the inequality from Equation (3) holds strictly. If this held with equality, the Center would be indifferent leading to trivial indeterminacy. We consider high- and low-capacity regimes separately because the proof techniques vary dramatically between the two cases.

F.1 High repression capacity: $\kappa_C<\pi_C^C$

Lemma 9 *In high-capacity regimes, $\sigma_C(\varnothing;g)=0$ for every grievance g and in every equilibrium σ.*

The proof is straightforward and omitted.

Lemma 10 *In high-capacity regimes, $\sigma_C(1;g^+)=1$ and $\sigma_C(1;g)>0$ for all $g>g^+$ in every equilibrium σ.*

Proof. The proof is by induction. First, we demonstrate that $\sigma_C(1;g^+)=1$. To see this, suppose $\sigma_C(1;g^+)<1$. Then Lemma 9 implies $\sigma_C(0;g^+)>0$, in which case we have

$$U_C^\sigma(0;g^+)=\tilde{V}_C(g^+)<\frac{\pi_C^C-\kappa_C}{1-\delta}.$$

This means C can profitably deviate at grievance g^+ by repressing for an infinite number of periods, a contradiction.

For induction, consider some $g>g^+$ and assume $\sigma_C(1;g-1)>0$. To derive a contradiction, assume $\sigma_C(1;g)=0$. By Lemma 9, $\sigma_C(0;g)=1$. Likewise, Lemma 9 guarantees C does not grant independence in any equilibrium, so Lemma 5 implies P mobilizes at g with probability 1. But then this contradicts Lemma 4. $\square$

Lemma 11 *In high-capacity regimes, $g \geq g^+$ implies $V_C^\sigma(g) = \frac{\pi_C^C - \kappa_C}{1-\delta}$ in every equilibrium σ.*

Proof. If $g \geq g^+$, then Lemma 10 implies $\sigma_C(1; g') > 0$ for all $g' \geq g$. The remainder of the proof follows from an identical argument as the one in Lemma 8. $\square$

Lemma 12 *In high-capacity regimes, $g > g^+$ and $\sigma_C(0; g) > 0$ imply $\sigma_P(g) < 1$ in every equilibrium σ.*

Proof. Suppose not. Then there exists $g > g^+$ such that $\sigma_C(0; g) > 0$ and $\sigma_P(g) = 1$. Because $g > g^+$, $g - 1 \geq g^+$. Likewise, $\sigma_C(1; g) > 0$ by Lemma 10, so it must be the case that $U_C^\sigma(0; g) = U_C^\sigma(1; g)$. Then we have

$$\begin{aligned} U_C^\sigma(0; g) = U_C^\sigma(1; g) &\iff -F(g)\psi + (1 - F(g))(\pi_C^C + \delta V_C^\sigma(g-1)) = \pi - \kappa_C + \delta V_C^\sigma(g+1) \\ &\iff -F(g)\psi + (1 - F(g))\left(\pi_C^C + \delta\frac{\pi - \kappa_C}{1-\delta}\right) = \frac{\pi - \kappa_C}{1-\delta} \\ &\iff \kappa_C = \frac{F(g)(\pi_C^C + (1-\delta)\psi)}{1(1 - F(g))\delta}, \end{aligned}$$

where we use Lemma 11 and $g - 1 \geq g^+$ to substitute for values $V_C^\sigma(g-1)$ and $V_C^\sigma(g+1)$.

Because σ is an equilibrium, we require $U_C^\sigma(1; g) = V_C^\sigma(g) \geq \tilde{V}_C(g)$, by Lemma 2. Then Lemma 1.1 implies

$$\begin{aligned} U_C^\sigma(1; g) > \frac{-F(g)\psi + (1 - F(g))\pi_C^C}{1 - (1 - F(g))\delta} &\iff \frac{\pi_C^C - \kappa_C}{1-\delta} > \frac{-F(g)\psi + (1 - F(g))\pi_C^C}{1 - (1 - F(g))\delta} \\ &\iff \kappa_C < \frac{F(g)(\pi_C^C + (1-\delta)\psi)}{1(1 - F(g))\delta}, \end{aligned}$$

which establishes the desired contradiction. $\square$

Lemma 13 *In high-capacity regimes, there exists cutpoint $\bar{g} \in \mathbb{R}$ such that if $g > \bar{g}$, then $\sigma_P(g) = 1$ and $\sigma_C(1; g) = 1$ in every equilibrium σ.*

Proof. The proof is constructive. Define $\bar{g} \in \mathbb{N}_0$ to be a number that satisfies

$$g \geq \bar{g} \implies \kappa_P < F(g)\left[\bar{V}_P - \pi_P^C - \delta\frac{p\bar{V}_P + (1-p)\pi_P^C - \kappa_P}{1 - (1-p)\delta}\right].$$

Such a $\bar{g}$ exists because $F(g)\left[\bar{V}_P - \pi_P^C - \delta\frac{p\bar{V}_P+(1-p)\pi_P^C}{1-(1-p)\delta}\right]$ is positive and strictly increasing in g. Furthermore,

$$\lim_{g\to\infty} F(g)\left[\bar{V}_P - \pi_P^C - \delta\frac{p\bar{V}_P+(1-p)\pi_P^C}{1-(1-p)\delta}\right] = p\frac{\pi_P^P-\pi_P^C}{1-\delta},$$

and Assumption 1 implies

$$\kappa_P < p\frac{\pi_P^P-\pi_P^C}{1-\delta}.$$

We first show that $\sigma_P(g)=1$ for $g\geq\bar{g}$. Suppose not; then there exists $g\geq\bar{g}$ such that $\sigma_P(g)<1$. To rule out profitable deviations, we require $U_P^\sigma(0;g)\geq U_P^\sigma(1;g)$, which is equivalent to

$$\kappa_P \geq F(g)\left[\bar{V}_P - \pi_P^C - \delta V_P^\sigma(g-1)\right].$$

Because the Center never grants independence in strong regimes, $V_P^\sigma(g-1)$ is bounded above by $\frac{p\bar{V}_P+(1-p)\pi_P^C-\kappa_P}{1-(1-p)\delta}$, which is the Periphery's dynamic payoff if it mobilizes in every period at maximum capacity, p. Combining these two inequalities gives us

$$\begin{aligned}\kappa_P &\geq F(g)\left[\bar{V}_P - \pi_P^C - \delta V_P^\sigma(g-1)\right]\\ &\geq F(g)\left[\bar{V}_P - \pi_P^C - \delta\frac{p\bar{V}_P+(1-p)\pi_P^C-\kappa_P}{1-(1-p)\delta}\right],\end{aligned}$$

but this implies $g<\bar{g}$, which is contradiction. Thus, $\sigma_P(g)=1$. Then Lemma 10 and the contrapositive of Lemma 12 imply $\sigma_C(1;g)=1$, as required. □

Lemma 14 *In high-capacity regimes, if $g\geq g^+$, then $\sigma_P(g)=1$ in every equilibrium σ.*

Proof. Suppose there exists $g\geq g^+$ such that $\sigma_P(g)<1$. Lemma 13 implies that there exists grievance $g^\dagger\geq g$ such that $\sigma_P(g^\dagger)<1$ and $\sigma_P(g')=\sigma_C(1;g')=1$ for all $g'>g^\dagger$. To rule out profitable deviations, we require $U_P^\sigma(0;g^\dagger)\geq U_P^\sigma(1;g^\dagger)$. This implies

$$\kappa_P \geq F(g^\dagger)\left[\bar{V}_P - \pi_P^C - \delta V_P^\sigma(g^\dagger-1)\right].$$

Because P will never be able to mobilize at a larger grievance than $g^\dagger$ along the path of play and C never grants independence, $V_C^\sigma(g^\dagger-1)$ is bounded above by

$$\frac{F(g^\dagger)\bar{V}_P+(1-F(g^\dagger))\pi_P^C-\kappa_P}{1-(1-F(g^\dagger)\delta)}.$$

Then we have

$$\begin{aligned}\kappa_P &\geq F(g^\dagger)\left[\bar{V}_P - \pi_P^C - \delta V_P^\sigma(g^\dagger - 1)\right]\\ &\geq F(g^\dagger)\left[\bar{V}_P - \pi_P^C - \delta\frac{F(g^\dagger)\bar{V}_P + (1-F(g^\dagger))\pi_P^C - \kappa_P}{1-(1-F(g^\dagger)\delta)}\right]\\ &= F(g^\dagger)\frac{\pi_P^P - \pi_P^C}{1-\delta},\end{aligned}$$

which implies $g^\dagger \leq g^- \leq g^+$, a contradiction. □

We now prove Proposition 3.1, which characterizes equilibria in regimes with large grievances when $\pi_C^C > \kappa_C$.

Proof of Proposition 3.1. If $g \geq g^+$, then Lemma 14 implies $\sigma_P(g) = 1$. Because $g > g^+$ implies $\sigma_P(g) = 1$. Lemma 10 and the contrapositive of Lemma 12 imply $\sigma_C(1; g) = 1$, as required. □

F.2 Low repression capacity: $\kappa_C > \pi_C^C$

Lemma 15 *Fix an equilibrium σ. In low-capacity regimes, the there does not exist grievance g such that $\sigma_C(1; g') > 0$ for all $g' \geq g$.*

Proof. The result follows from the inequality $\pi_C^C - \kappa_C < 0$ and the argument proving Lemma 8. □

Lemma 16 *In low-capacity regimes, $\sigma_P(g^+) = 1$, $\sigma_C(0; g^+) = 0$, and $\sigma_C(\varnothing; g^+) > 0$ in ever equilibrium σ.*

Proof. First, P mobilizes at g^+ by Lemma 5 and Proposition 2.

Second, $\sigma_C(0; g^+) = 0$. If not, then with positive probability the Center chooses to enter the path of play into moderate grievance levels. That is, $V_C^\sigma(g^+) = U_C^\sigma(0; g^+) = \tilde{V}_C(g^+)$. But then $V_C^\sigma(g^+) < 0$ because the regime has low capacity, so C can profitably deviate by granting independence at g^+.

Third, $\sigma_C(1; g^+) < 1$. To see this, suppose not, i.e., suppose $\sigma_C(1; g^+) = 1$. By Lemma 15, there exists $g^\dagger \geq g^+$ such that $\sigma_C(1; g^\dagger + 1) = 0$ and $\sigma_C(1; g^\dagger) > 0$ for all $g' = g^+, ..., g^\dagger$. Then by Lemma 7, $\sigma_C(\varnothing; g') = 0$ for all $g' = g^+, .., g^\dagger + 1$. By Proposition 2, $\sigma_C(0; g') = 1$ for all $g' < g^+$. Then Lemma 5 implies $\sigma_P(g^\dagger + 1) = 1$. However, $\sigma_C(1; g^\dagger) > 0$, $\sigma_C(0; g^\dagger + 1) = 1$, and $\sigma_P(g^\dagger + 1) = 1$ contradict Lemma 4. Thus, $\sigma_C(1; g^+) < 1$, which implies $\sigma_C(\varnothing; g^+) > 0$ by the previous paragraph. □

Before proving the last technical lemma of this section, consider the following definitions. The set $\mathcal{G} \subseteq \mathbb{N}_0$ is *an absorbing set with respect to profile* σ if once the path of play enters grievance level g such that $g \in \mathcal{G}$, it never transitions to a grievance g' such that $g' \notin \mathcal{G}$ with positive probability. The set $\mathcal{G}$ is *an irreducible absorbing set with respect to* σ if $\mathcal{G}$ is an absorbing set with respect to σ and there does not exist a proper subset $\mathcal{G}' \subsetneq \mathcal{G}$ such that $\mathcal{G}'$ is an absorbing set with respect to σ.

Lemma 17 *Consider an equilibrium σ and some grievance $g \geq g^+$. Then the following hold:*

1. *beginning at grievance g, the path of play enters an irreducible absorbing set $\mathcal{G}$ with respect to σ,*
2. $\max \mathcal{G}$ *exists,*
3. $g^+ \leq \min \mathcal{G}$*, and*
4. *there exists $g' \in \mathcal{G}$ such that $\sigma_C(\varnothing; g) > 0$.*

Proof. To prove (1), consider $g \geq g^+$ and two cases. If $\sigma_C(1; g) = 0$, then the path of play enters the set $\{g^+, ..., g\}$, which is an absorbing set because $\sigma_C(0; g^+) = 0$ by Lemma 16. So the set $\{g^+, ..., g\}$ has a irreducible absorbing set, $\mathcal{G}$. If $\sigma_C(1; g) > 0$, then Lemma 15 implies there exists $g^\dagger \geq g$ such that $\sigma_C(1; g') > 0$ for all $g' = g, ..., g^\dagger$ and $\sigma_C(1; g^\dagger + 1) = 0$ from Lemma 7. Then the path of play enters the set $\{g^+, ..., g^\dagger + 1\}$, which is an absorbing set as well.

The proof of (2) and (3) follow immediately from the existence of $\mathcal{G}$ and Lemmas 15 and 16, respectively.

To prove (4), suppose not. Suppose $\sigma_C(\varnothing; g') = 0$ for all $g' \in \mathcal{G}$. I first claim that it must be the case that $\#\mathcal{G} > 1$. Suppose the contrary. Then $\mathcal{G} = \{g'\}$, and C cannot be repressing with positive probability at g, or else $\mathcal{G}$ is not absorbing. Also, if $\mathcal{G} = \{g'\}$ and $\sigma_C(0; g') > 0$, then $F(g) = 1$ and $\sigma_P(g) = 1$ or else the path of play would transition to $g - 1$ with positive probability. In this case, $U_C(0; g') = -\psi < 0$, but this means C has a profitable deviation by granting independence at g'. Thus, $\#\mathcal{G} > 2$ and as such $\max \mathcal{G} - 1 \in \mathcal{G}$.

Second, because $\mathcal{G}$ is irreducible, $\sigma_C(1; \max \mathcal{G} - 1) > 0$, or else $\mathcal{G} \setminus \{\max \mathcal{G}\}$ would be absorbing as well. Furthermore, $\sigma_C(1; \max \mathcal{G}) = 0$ or else the path of play would transition with positive probability to $\max \mathcal{G} + 1$. Because $\sigma_C(1; \max \mathcal{G} - 1) > 0$ and $\sigma_C(1; \max \mathcal{G}) = 0$, Lemma 7 implies $\sigma_C(0; \max \mathcal{G}) = 1$ Because the path of play never leaves $\mathcal{G}$ nor transitions to grievance $g' > \max \mathcal{G}$ and C never grants independence along the path of play starting from $\max \mathcal{G}$, then $\sigma_P(\max \mathcal{G}) = 1$, which follows from an identical argument as the one in Lemma 5. However, this contradicts Lemma 4. □

The proof of Proposition 3.2 follows from Lemma 17.

G Proof of Proposition 4

First, the result in Proposition 4.1 follows immediately form Lemma 15. Second, the result in Proposition 4.2 is proved below in Lemma 18. Third, I construct an equilibrium that supports cycles of repression and mobilization, as described in Proposition 4.3, in Example 1. As part of this construction, I need a new result in Lemma 19.

Lemma 18 *If $\kappa_C > (1+\delta)\pi_C^C$, then the Center never represses in any equilibrium σ, i.e., $\sigma_C(1; g) = 0$ for every grievances g and every equilibrium σ.*

Proof. To derive a contradiction, suppose the contrary. That is, suppose $\kappa_C > (1+\delta)\pi_C^C$ and the Center represses in equilibrium σ. Thus, the regime is has low capacity, and there exist some g such that $\sigma_C(1; g) > 0$. By Lemma 15, there exists $g^\dagger \geq g$ such that $\sigma_C(1; g^\dagger + 1) = 0$ and $\sigma_C(1; g') > 0$ for all $g' = g, ..., g^\dagger$. Then by Lemma 7, $\sigma_C(\varnothing; g') = 0$ for all $g' = g + 1, .., g^\dagger + 1$. Hence, $\sigma_C(0; g^\dagger + 1) = 1$. We can compute C's continuation value at $g^\dagger$ as

$$
\begin{aligned}
V_C^\sigma(g^\dagger) &= \sigma_C(1; g^\dagger)U_C^\sigma(1; g^\dagger) + \sigma_C(0; g^\dagger)U_C^\sigma(0; g^\dagger) = U_C^\sigma(1; g^\dagger) \\
&= \pi_C^C - \kappa_C + \delta V_C^\sigma(g^\dagger + 1) \\
&= \pi_C^C - \kappa_C + \delta \Big[\sigma_P(g^\dagger + 1)\Big(-F(g^\dagger + 1)\psi + (1 - F(g^\dagger + 1))(\pi_C^C + \delta V_C^\sigma(g^\dagger)\Big) + \\
&\qquad (1 - \sigma_P(g^\dagger + 1))\Big(\pi_C^C + \delta V_C^\sigma(g^\dagger)\Big)\Big],
\end{aligned}
$$

where the second equality follows because σ is an equilibrium and $\sigma_C(1; g^\dagger) > 0$. Solving for $V_C^\sigma(g^\dagger)$ reveals that

$$
V_C^\sigma(g^\dagger) = \frac{\pi_C^C(1 + (1 - F(g^\dagger + 1)\sigma_P(g^\dagger + 1))\delta) - \kappa_C - F(g^\dagger + 1)\sigma_P(g^\dagger + 1)\delta\psi}{1 - (1 - \sigma_P(g^\dagger + 1)F(g^\dagger + 1))\delta^2},
$$

which is decreasing in $\sigma_P(g^\dagger + 1)$. Because $\sigma_P(g^\dagger + 1) \geq 0$, then

$$
V_C^\sigma(g^\dagger) \leq \frac{\pi_C^C(1+\delta) - \kappa_C}{1 - \delta^2}
$$

Thus, $\kappa_C > (1+\delta)\pi_C^C$ implies $V_C^\sigma(g^\dagger) < 0$. But this implies C can profitably deviate at $g^\dagger$ by granting independence and guaranteeing itself a payoff of zero. $\square$

Lemma 19 *In low-capacity regimes, if* $F(g)(\pi_P^P - \pi_P^C) > \kappa_P$ *and* $g \geq g^+$, *then* $\sigma_P(g') = 1$ *and* $\sigma_C(1; g') = 0$ *for all* $g' \geq g$ *in every equilibrium* σ.

Proof. By Equation (1), P mobilizes at g' if

$$\kappa_C < F(g')\left[\bar{V}_P - \pi_P^C - \delta V_P^\sigma(g'-1)\right].$$

An upper bound on $V_P^\sigma(g'-1)$ is $\frac{\pi_P^P}{1-\delta}$, which is the discounted sum of P's largest per-period payoff. Combining these two inequalities implies P mobilizes when $F(g')(\pi_P^P - \pi_P^C) > \kappa_P$, which holds because $F(g)(\pi_P^P - \pi_P^C) > \kappa_P$, and F is increasing.

Second, I claim that $\sigma_C(1; g') = 0$ for all $g' \geq g$. Suppose not. Then there exists a $g^\dagger$ such that $\sigma_C(1; g^\dagger) > 0$ and $\sigma_C(0; g^\dagger + 1) = 1$ by Lemmas 7 and 15. The previous paragraph demonstrates that P mobilizes with probability 1 with grievance $g^\dagger + 1$. But this contradicts Lemma 4. $\square$

Example 1 *In this example, I assume* $\pi_C^C = \pi_P^P = 1$, *and* $\pi_P^C = 0$. *In addition,* $\kappa_C = 1.2$ *and* $\kappa_P = .25$. *This implies that the regime has low repression capacity. Finally,* $\delta = .9$, $\psi = 6$, *and* F *takes the form:*

$$F(g) = \begin{cases} 0 & \text{if } g = 0 \\ \frac{g}{700} + \frac{33}{175} & \text{if } g \geq 1 \text{ and } g \leq 8 \\ 1 & \text{otherwise.} \end{cases}$$

Thus, $g^- = 0$, *and* $g^+ = 7$, *because* $\tilde{V}_C(6) \approx .33$ *and* $\tilde{V}_C(7) \approx -.15$. *By Proposition 2, the Periphery mobilizes with probability one for all* $g \in \{1, 2, ..., 7\}$ *and the Center neither represses nor grants independence for all* $g \in \{0, 1, 2, ..., 6\}$. *Note that* $F(9)(\pi_P^P - \pi_P^C) > \kappa_P$, *so Lemma 19 implies the Periphery mobilizes for all grievances* $g \geq 9$ *and the Center does not repress at grievance* $g \geq 9$.

We specify remaining behavior as follows.

1. *At grievance* $g = 7$, *the Periphery mobilizes with probability 1 and the Center mixes between repression and granting independence,* $\sigma_C(1; 7) + \sigma_C(\varnothing; 7) = 1$

2. *At grievance* $g = 8$, *the Center neither represses nor grants independence, i.e.,* $\sigma_C(0; 8) = 1$ *and the Periphery mobilizes with probability* $\sigma_P(8)$.

We first characterize mixing probabilities, $\sigma_C(1;7)$, $\sigma_C(\varnothing;7)$, and $\sigma_P(8)$, such that the following hold:

$$\begin{aligned}\sigma_C(1;7)+\sigma_C(\varnothing;7)=1&\\ U_C^\sigma(1;7)=U_C^\sigma(\varnothing;7)&\\ U_P^\sigma(1;8)=U_P^\sigma(0;8).&\end{aligned}$$

The first equation says the Center mixes between repression and granting independence at $g=7=g^+$. The second and third equations are C and P's indifference conditions, respectively. Because $U_C^\sigma(\varnothing;7)=0$, C's indifference equations takes the form:

$$\pi_C^C-\kappa_C+\delta V_C^\sigma(8)=0, \tag{7}$$

where

$$V_C^\sigma(8)=\sigma_P(8)\left[-F(8)\psi+(1-F(8))\left(\pi_C^C+\delta V_C^\sigma(7)\right)\right]+(1-\sigma_P(8))\left[\pi_C^C+\delta V_C^\sigma(7)\right].$$

In equilibrium, $V_C^\sigma(7)=U_C^\sigma(\varnothing;7)=0$. Thus, we have

$$V_C^\sigma(8)=\sigma_P(8)\left[-F(8)\psi+(1-F(8))\pi_C^C\right]+(1-\sigma_P(8))\pi_C^C.$$

Substituting the above equality into Equation (7), C's indifference condition takes the form:

$$\pi_C^C-\kappa_C+\delta\left(\sigma_P(8)\left[-F(8)\psi+(1-F(8))\pi_C^C\right]+(1-\sigma_P(8))\pi_C^C\right)=0. \tag{8}$$

Next, consider P's indifference equation, $U_P^\sigma(1;8)=U_P^\sigma(0;8)$, which takes the form

$$-\kappa_P+F(8)\frac{\pi_P^P}{1-\delta}+(1-F(8))\left(\pi_P^C+\delta V_P^\sigma(7)\right)=\pi_P^C+\delta V_P^\sigma(7), \tag{9}$$

where

$$\begin{aligned}V_P^\sigma(7)&=\sigma_C(\varnothing;7)\frac{\pi_P^P}{1-\delta}+\sigma_C(1;7)\left[\pi_P^C+\delta V_P^\sigma(8)\right]\\&=\sigma_C(\varnothing;7)\frac{\pi_P^P}{1-\delta}+\sigma_C(1;7)\left[\pi_P^C+\delta U_P^\sigma(0;8)\right]\\&=\sigma_C(\varnothing;7)\frac{\pi_P^P}{1-\delta}+\sigma_C(1;7)\left[\pi_P^C+\delta\left(\pi_P^C+\delta V_P^\sigma(7)\right)\right]\end{aligned}$$

Here the second equality follows because $\sigma_C(0; 8) = 1$. Solving Equations (8) and (9) with the constraint $\sigma_C(\varnothing; 7) + \sigma_C(1; 7) = 1$ reveals that

$$\sigma_P(8) = \frac{(1+\delta)\pi_C^C - \kappa_C}{(\pi_C^C + \psi)\delta F(8)} \approx .56$$

and

$$\sigma_C(1; 7) = \frac{\kappa_P - F(8)(\pi_P^P - \pi_P^C)}{\delta^2 \kappa_P + \delta F(8)(\pi_P^P - \pi_P^C)} \approx .13.$$

Finally, we check profitable deviations. First, P's indifference condition precludes profitable deviations at $g = 8$. Second, C does not have a profitable deviation at $g = 7$ due to its indifference equation and because $U_C^\sigma(0; 7) = \tilde{V}_C(7) < 0$. Also, C has no profitable deviation at $g = 8$, because $V_C(8) > 0$. To see this, note that $U_C^\sigma(1; 7) = \pi_C^C - \kappa_C + \delta V_C^\sigma(8) = 0$ by Equation (7), and $\pi_C^C - \kappa_C < 0$. If C deviates by granting independence at $g = 8$, then its payoff is zero. Likewise, if C deviates by repressing, its payoff is $\pi_C^C - \kappa_C + \delta V_C^\sigma(9)$, which reduces to $\pi_C^C - \kappa_C < 0$ because C is granting independence when $g = 9$. Lemma 19 implies that C cannot profitably deviate by using repression, at grievances $g \geq 9$. Thus, we only need to verify that C cannot profitably deviate by choosing to refrain from repression or granting independence, at grievances $g \geq 9$. Because the Periphery mobilizes at $g \geq 9$ and $F(g) = 1$, mobilization surely succeeds, implying $U_C^\sigma(0; g) = -\psi$ for all $g \geq 9$ which is strictly less than C's utility from following its equilibrium strategy of granting independence.

H Exogenous Decentralization

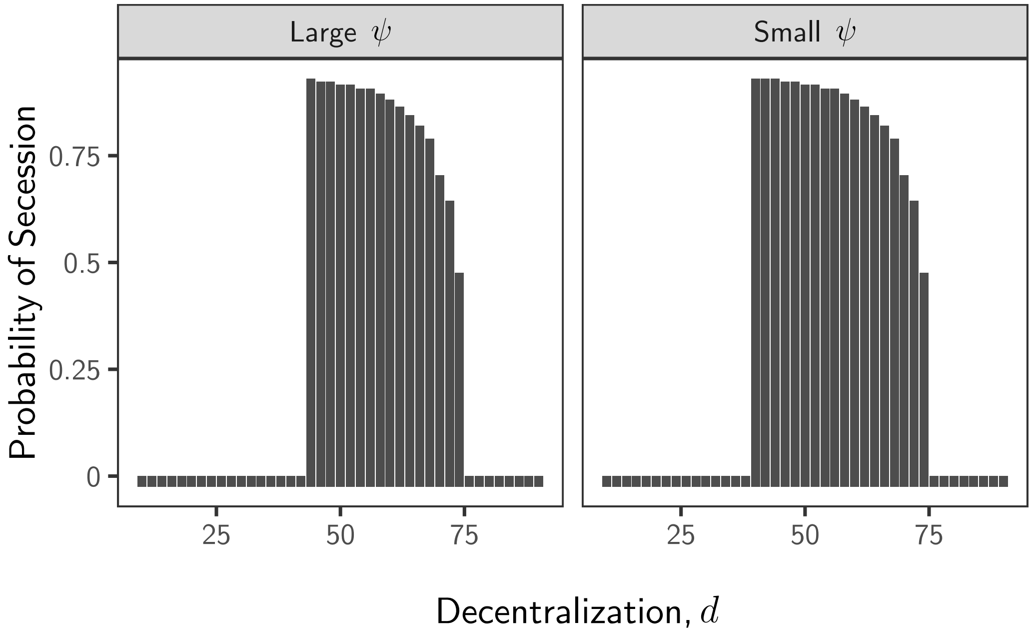
In this section, I continue to analyze the numerical example in Figure 4 and prove Proposition 5.

From, the example in Figure 4, I compute the probability that the country breaks apart due to secessionist mobilization —labeled probability of secession hereafter—as a function of decentralization. For a fixed d, three potential paths of play emerge at initial grievance g^1 in equilibrium. First, if $g^1 < g^+[d]$, the Center neither represses nor grants independence, and the probability secession is

$$\begin{cases} 0 & \text{if } g^1 \leq g^-[d] \\ 1 - \prod_{g': g^\dagger[d] < g' \leq g^1} (1 - F(g')) & \text{otherwise.} \end{cases}$$

Second, if $g^1 \geq g^+[d]$ and the regime has high capacity ($\pi - d > \kappa_C$), then the Center represses in all future periods, and the probability of secession is zero. Third, if $g^1 \geq g^+[d]$ and the regime has low capacity ($\pi - d < \kappa_C$), the probability of secession is undefined.

Figure 6: Decentralization and comparative statics



Notes: The panels graph the probability of secession (vertical axis) for a fixed decentrlaization level (horizontal axis) with a large cost of secession $\psi = \frac{3\pi}{2}$ (left) and a small cost $\psi = \frac{\pi}{2}$ (right). The remaining parameters take on the following valules: $\pi = 100$, $\kappa_C = 50$, $\kappa_P = 50$, $\delta = 0.95$, and and $F(g) = 1 - \left(0.01g + 0.001g^2 - 1\right)^{-1}$.

Although the Periphery will eventually gain control of its territory (Proposition 3.2), this may arise either from secessionist mobilization or Center-granted independence. This third case does not arise in the numerical example. As seen in Figure 4, if $g^1 \geq g^+[d]$ for some d, then the regime has high capacity.

Figure 6 graphs the probability of secession decentralization varies. When d is small, $g^1 > g^+[d]$ so the high-capacity regime represses and the probability of secession is zero. When d is large, $g^1 < g^-$, so grievances are small and a lasting peace emerges. When d is moderate, then the Center gambles for unity and secession occurs with positive probability. When ψ is large (left panel), all decentralization levels below $d = 44$ result in long-term repression and a zero probability of secession. When ψ is small (right panel), all decentralization levels below $d = 38$ result in long-term repression and a zero probability of secession.

Proposition 5 *Assume the regime has a high capacity for repression* ($\kappa_C < \pi$) *and initial grievances are large* ($g^1 \geq g^+[0]$)*. There exist cutpoints* $\underline{d}$ *and* $\overline{d}$ *such that* $0 \leq \underline{d} < \overline{d} < 1$ *and secession occurs with positive probability on the equilibrium path only if decentralization is moderate, i.e.,* $\underline{d} < d < \overline{d}$.

Proof. Set $\underline{d} = 0$. The regime has high repression capacity by assumption, and $g^1 \geq g^+[\underline{d}]$ implies that C represses with probability one in all future periods when the game begins at grievance g^1. As such the probability of secession is zero.

In addition, we can set $\bar{d}$ as follows

$$\bar{d} = \hat{d}(g^1) + \epsilon$$

where $\hat{d}$ is defined in Equation (4) above and $\epsilon \in \mathbb{R}$ is such that $0 < \epsilon < \max\{\frac{(1-\delta)\kappa_P}{F(g^1)}, 1\}$. Note that the fraction $\frac{(1-\delta)\kappa_P}{F(g^1)}$ is well defined because $F(g^1) \neq 0$. If $F(g^1) = 0$ then $g^1 \leq g^-[0] < g^+[0]$, a contradiction.

It suffices to show that $g^1 \leq g^-\left[\bar{d}\right]$ because this inequality implies that g^1 is small at decentralization level $\bar{d}$ and g^- is strictly increasing in d. As such, g^1 is small at decentralization levels $d > \bar{d}$. In addition, when $g^1 \leq g^-$ no mobilization occurs along the path of play by Proposition 1. When $\pi_P^C = d$ and $\pi_P^P = \pi$, then we can write $g^-[d]$ as

$$g^-[d] = \max\left\{g \in \mathbb{N}_0 \;\middle|\; \kappa_P > F(g)\frac{\pi - d}{1-\delta}\right\}.$$

Thus, $g^1 \leq g^-\left[\bar{d}\right]$, as required. □

I Proof of Proposition 6

We first prove Proposition 6.1 and then present two numerical examples that establish Propositions 6.2 and 6.3.

Proof of 6.1. Consider equilibrium (d^*, σ). We first prove that $d^* \leq \min\{\hat{d}(g^1), \kappa_C\}$. First, $d^* \leq \kappa_C$. To see this, note that $V_C^\sigma(g; d^*) \leq \frac{\pi - d^*}{1-\delta}$. Thus, if C chooses $d^* > \kappa_C$, then $V_C^\sigma(g; d^*) < \frac{\pi - \kappa_C}{1-\delta}$, which means C can profitably deviate by choosing $d^* = 0$ and repressing in all future periods.

Second, $d^* \leq \hat{d}(g^1)$. When C chooses $d^* > \hat{d}(g^1)$, then $g^1 \leq g^-[d^*]$, which implies that $V_C^\sigma(g^1; d^*) = \frac{\pi - d^*}{1-\delta}$, which is strictly decreasing in d^*. So C has a profitable deviation by choosing decentralization $d = d^* - \epsilon$ for $\epsilon > 0$ but close to zero. This establishes the desired result.

Finally, we prove that if $\kappa_C < \max\left\{\frac{\pi}{2}, \pi - \hat{d}(g^1)\right\}$ and $d^* > 0$, then $g^1 < g^+[d^*]$, i.e., C never represses nor grants independence along the subsequent path of play. To do this suppose not and consider two relevant cases.

Case 1: $\pi - d^* - \kappa_C > 0$. Then $V_C^\sigma(g^1; d^*) = \frac{\pi - d^* - \kappa_C}{1-\delta}$, and C can profitably deviate by choosing $d^* = 0$ and repressing in all future periods.

Case 2: $\pi - d^* - \kappa_C \leq 0$. If $\kappa_C < \frac{\pi}{2}$, then

$$d^* \geq \pi - \kappa_C > \pi - \frac{\pi}{2} > \kappa_C,$$

which contradicts the upper bound described above. If $\kappa_C < \pi - \hat{d}(g^1)$, then we have

$$\begin{aligned} d^* &\geq \pi - \kappa_C \\ &> \pi - \left(\pi - \hat{d}(g^1)\right) \\ &= \pi - \left(\frac{(1-\delta)\kappa_P}{1-\delta}\right) \\ &= \hat{d}(g^1), \end{aligned}$$

which contradicts the upper bound described above. $\square$

The next example illustrates that the Center decentralizes in equilibrium (d^*, σ) and the subsequent interaction entails gambling for unity.

Example 2 *For the exogenous parameters, we consider* $\pi = 100$, $\psi = 100$, $\kappa_C = 40$, $\kappa_P = 95$ *and* $\delta = 0.9$*. In addition,* F *takes the form:*

$$F(g) = \begin{cases} 0 & \text{if } g = 0 \\ \frac{1}{10} & \text{if } g \in \{1, \ldots, 100\} \\ \frac{3}{10} & \text{if } g = 101 \\ 1 & \text{if } g \geq 102. \end{cases}$$

and initial grievances are $g^1 = 101$.

Note that $\kappa_C < \frac{\pi}{2}$*, so Proposition 6.1 implies that if* C *decentralizes in an equilibrium* (d^*, σ)*, then it chooses to neither repress nor grant independence in all future periods, in which case,* C*'s expected utility is* $\tilde{V}_C(g^1; d^*)$*. Thus, if* C *chooses* $d^* > 0$*, it will choose a* d^* *that solves*

$$F(g')\frac{\pi - d^*}{1-\delta} - \kappa_P = 0$$

for some $g' > g^-[0]$ *and* $g' \leq g^1$*. In words, if* C *decentralizes, it will choose a decentralization level that makes the Periphery (at some grievance level* g^1*) indifferent between mobilizing and not along the subsequent path of play. If not,* C *can profitably deviate by offering slightly less decentralization without changing the Periphery's strategy in states* $g \leq g^1$*.*

Given this discussion and the construction of F*, there are three possible decentralization levels to consider:* $\{0, \hat{d}(1), \hat{d}(101)\}$*. Note that* $\hat{d}(101) = \frac{205}{3} > \kappa_C$*. As such, the upper* *bound in the previous proof shows that* $d^* \neq \hat{d}(101)$ *in any equilibrium. Thus, there are only two possible decentralization levels in equilibrium:* $\{0, \hat{d}(1)\}$.

If C *chooses* $d^* = 0$, *then* $g^-[0] = 0$ *and* $g^+[0] = 6$. *Because* $g^1 > g^+[0]$, *if* C *chooses* $d^* = 0$, *then long-term repression is the equilibrium outcome, which implies* C*'s dynamic payoff is* $\frac{\pi - \kappa_C}{1-\delta} = 600$.

If C *chooses* $d^* = \hat{d}(1) = 5$, *then* $g^-[d^*] = 100$ *and* $g^+[0] = 102$. *Because* $g^1 < g^+[d^*]$, *if* C *chooses* $d^* = \hat{d}(1)$, *then one period of gambling for unity is the equlibrium path of play, in which case* C*'s expected utility is*

$$-F(g^1)\psi + (1 - F(g^1)) \left[\pi - d^* + \delta \frac{\pi - d^*}{1-\delta}\right] = 635.$$

As such, C *chooses to decentralize,* $d^* = \hat{d}(1) > 0$ *and gambling for unity occurs along the subsequent equilibrium path of play.*

The next example illustrates that the Center decentralizes in equilibrium (d^*, σ) and the a long-term peace emerges in the subsequent interaction.

Example 3 *The payoff parameters match those from Example 2, but now* F *takes the form:*

$$F(g) = \begin{cases} 0 & \text{if } g = 0 \\ \frac{1}{10} & \text{if } g \in \{1, \dots, 101\} \\ 1 & \text{if } g \geq 102. \end{cases}$$

and initial grievances are $g^1 = 101$. *Following the logic in the previous example, there are two potential levels of decentralization in equilibrium:* $\{0, \hat{d}(1)\}$. *If* C *chooses* $d^* = 0$, *then its payoff is* $\frac{\pi - \kappa_C}{1-\delta} = 600$ *for reasons described above. If* C *choses* $d^* = \hat{d}(1)$, *then* $g^-[d^*] = 101 = g^1$ *and its equilibrium payoff is* $\frac{\pi - d^*}{1-\delta} = 950$. *As such,* C *chooses to decentralizes and a long-term peace emerges.*