The Allocation of Political Power when Power Corrupts [*]

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January 7, 2019

Abstract

I propose a simple dynamic model of the competition for political power in order to study the nature of equilibrium power transfers. Power is contested by organized groups in the shadow of violence, and is transferred only when ceded by the Incumbent or seized by the Opposition. Citizens are unable to command power transfers, but their preferences shape the conditions under which the competition for power unfolds. The key feature of the model is that *power corrupts*: desirable leaders (from the perspective of Citizens) stochastically become undesirable as a consequence of wielding power. The speed with which power corrupts shapes whether equilibrium power transfers resembles autocracy, conflict or democracy. The analysis also highlights the role of democractic norms in fostering the conditions necessary for democratic power transfers.

1   Motivation

Economic development hinges on the details of how political power is obtained and transferred across competing factions over time. Citizens prosper when political power rests with desirable leaders; those that coordinate economy activity, provide public goods, enforce contracts, and establish law and order (Olson (1993)). Conversely, citizens suffer when political power is in the hands of undesirable leaders; those that use state resources for private gain. This paper builds a simple dynamic model with which to study the equilibrium nature of power transfers, focusing on a setting in which effective governance–i.e. having political power always rest with a desirable leader–faces significant obstacles.

The key obstacle is that *power corrupts*: desirable leaders stochastically become undesirable as a consequence of holding power.[1] Effective governance therefore requires more than

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[1]For an accessible overview of supporting research, see Keltner (2016). This book outlines 'The Power

identifying the quality of contending entrants and promoting the desirable over the undesirable. It centrally requires that desirable leaders transfer power once they inevitably become undesirable. Achieving this is hindered by two features. The first is that political power is *valuable* and thus subject to competition from groups that are sufficiently organized and motivated to contest it via violence. The second is that political power is *protective.* Command over state resources, in particular the capacity for violence, gives those in power no compulsion to heed the demands of unorganized citizens to cede power, and provides a means to repress attempts at seizure by organized groups.

Although citizens are assumed to be too unorganized to pose a threat to the regime, their preferences (over leaders) may shape equilibrium power transfers nonetheless. If so, it is because citizen preferences shape the conditions under which inter-elite conflict plays out. In particular, citizen support acts as a substitute for repression when it comes to a leader defending against attack.

The key parameter of the model is the propensity for desirable leaders to turn undesirable. By varying this parameter, the model generates equilibria that resemble three main power transfer regimes observed in reality; Autocracy, Conflict and Democracy. An 'autocracy' regime arises when undesirable leaders maintain power via costly repression, making power seizures prohibitively costly. A 'conflict' regime arises when power is occasionally seized by force by opposition elites. A 'democracy' regime arises when undesirable leaders peacefully cede power to a desirable opposition elite.

The model is also useful for analyzing the more nebulous notions of democratic norms and legitimacy. In particular, the scope for effective governance is broadened when citizen preferences are enriched beyond a simple concern for the leader's desirability type. The notion of legitimacy provides a means for citizens to distinguish between potential leaders of the same desirability type. Democratic norms are the articulation of the conditions under which a leader is considered legitimate. For instance, when evaluating the legitimacy of a desirable type leader, citizens may consider whether the leader engages in repression or how the leader came to power.

1.1 Literature

The paper contributes to the literature concerned with the *economic* origins of political institutions. Much of this literature, following the seminal work of Acemoglu and Robinson (2000, 2001, 2006), focuses on the conflicting preferences of different social groups (e.g. preferences

Paradox': "This is the heart of the power paradox: the seductions of power induce us to lose the very skills that enabled us to gain power in the first place". There is no shortage of illustrating examples. For instance, on Mobutu the NYT (May 17, 1997. Anatomy of an Autocracy: Mobutu's 32-Year Reign, by Howard W. French) writes: "In the early years, at least, he set out to attract the best and brightest of Zaire's small university community, and was known for eagerly soliciting their advice. With time, however, the effects of flattery and a growing taste for power took over, and the president's style of rule became both insular and absolute."

over tax rates for the rich and poor).[2] In contrast, this paper focuses on the conflicting preferences of the ruler and the ruled. Unlike the vast literature on political agency (whether focused on issues of moral hazard (Barro (1973), Ferejohn (1986)), selection (Besley (2005)), or both (Banks and Sundaram (1998))) we do not take Citizens' capacity to eject leaders as given. Rather, as in Fearon (2011), the analysis aims to understand this capacity as an equilibrium outcome.[3]

Fearon (2011) focuses on how elections enhance the ability of citizens to discipline their leaders, and explains why self-interested powerful elites may want to institute free and fair elections. The key issue is that citizens' rebellion threat is jeopardized by a coordination problem. This arises from the facts that leader actions are imperfectly observed and that citizens only get a (warm glow) benefit from participating in successful rebellions. The current paper, in contrast, does not rely on either of these features.

The key feature of the model, that power corrupts, renders it a hybrid of sorts: initially, there need not be any agency issues arising between the ruler and the ruled, yet such issues will arise eventually. This will mean that the 'democratic' nature of political institutions cannot be discerned from the desirability of the current leader. What matters is whether the leader has incentives to peacefully cede once they are no longer desirable, and whether those not in power have incentive to seize it. Thus, as in Che et al. (2013), we take the defining difference between autocracy and democracy as the nature of power transfers.

The consequences of corrupting power have not been extensively studied,[4] although related issues arise in the literature on term limits (Smart and Sturm (2013), Dick and Lott (1993); Glaeser (1997), Bernhardt et al. (2004)) whereby politicians become better at delivering 'pork' to their constituents with experience in office. Relatedly, incumbents have an experience advantage that encourages voter support of transgressing leaders in Bidner and Francois (2013), and other related issues arise in the literature that models dynamic elections in which preferences (of the median voter) change over time (Duggan & Forand (2014)) and where political 'stability' impacts policy outcomes (e.g. corruption (Campante et al. (2009)) and environmental policy (Fredriksson and Svensson (2003)).

The paper also contributes to an understanding of the *cultural* origins of political institutions, and in particular how this interacts with the economic origins (Besley and Persson (forthcoming), Bidner and Francois (2013)).

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[2]This perspective also arises in models of dynamic coalition formation (e.g. Acemoglu et al. (2010)).

[3]Similarly, the endogenous nature of political institutions differentiates the model from the literature on non-democratic governance; e.g. see Gehlbach et al. (2016) for a review.

[4]Acemoglu et al. (2010) uses types ("competence") of rulers and considers (infrequent) shocks to such types. The shocks are independent of being in power, and thus not an issue of power corrupts. In a similar setting, Acemoglu et al. (2015) also considers stochastic environments but focuses on a different set of issues.

2 Model

2.1 Fundamentals

Time is discrete and infinite. At each date there are two strategic players: an elite representing each of two groups sufficiently organized to contest power. The elite that is in power at the start of the period is the Incumbent and the other is the Opposition. There is also a mass of Citizens.

The Citizens' preference over elites depends, at least in part, on the elites' types. At each date each elite is one of two types; θ_H or θ_L. All else equal, Citizens prefer a θ_H type to a θ_L type. The probability that the Incumbent in period t is type θ_H is $\lambda \in [0, 1]$ if they were type θ_H at date $t - 1$, and zero otherwise. That is, a type θ_H leader probabilistically transitions into a type θ_L type Incumbent, but a type θ_L leader remains this type as an Incumbent. For simplicity, assume that the opposition is always a θ_H type.[5]

Citizens never prefer a type θ_L Incumbent to the Opposition. As a base case, suppose that Citizens' preferences depends *only* on the elites' types. In particular, Citizens prefer the Incumbent to the Opposition if and only if the Incumbent is a θ_H type. Citizens are never organized enough to engage in conflict directly–i.e. their preferences do not translate into a decision to attack one group. If their preferences affect anything, it is merely the conditions under which the inter-elite conflict unfolds.

The Incumbent decides whether to repress at a cost of $R > 0$ before the Incumbent's type is publicly revealed. The Incumbent can cede power to the Opposition, in which case the Opposition becomes Leader. If power is not ceded, the Opposition has an opportunity to seize power by attacking (sometimes referred to as mounting a coup). The cost of attacking depends on whether the Incumbent has engaged in repression and the preferences of Citizens. For simplicity, assume that coups are costless if there is no repression and Citizens prefer the Opposition. Otherwise, the coup costs $c > 0$. If attacked, the Incumbent incurs a small cost (this just ensures that they prefer to cede if and only if they anticipate being attacked with certainty). The Leader gets $b > 0$ and becomes the Incumbent in the following period. The common discount factor is $\beta \in [0, 1)$.

The timing is summarized as follows:

1. Incumbent decides whether to repress

2. Incumbent's type is revealed

3. Incumbent decides whether to cede power to Opposition

4. Opposition decides whether to attack

5. Leader determined and payoffs realized

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[5]This ensures that there exists at least one competitor for power that citizens most prefer.

6. Leader becomes Incumbent in the following period.

The goal is to analyze the nature of political power transfers in the (subgame perfect Nash) equilibria of this game. In particular, is power ever allocated according to citizen preferences even though citizens are never organized enough to compete for power directly?

2.1.1 Discussion of Assumptions

Repression is decided before type is revealed. This is intended to capture the idea that repression requires prior investments (e.g. in co-opting the media, military, and police, establishing information-gathering networks, etc.) and thus cannot be rapidly enacted.

Opposition is always the θ_H type. This assumption is not substantive and serves to simplify the analysis. Instead, we could have had the Opposition group decide which type of elite they would like to represent them. The elite's payoff to being in office (b) does not depend on citizen preferences, so it seems reasonable that the group selects a representative that is popular with citizens. The assumption is not consequential–leader types do not matter in equilibria with repression, and desirable types do strictly better in equilibria without repression. It may be interesting to consider a trade-off in which the elite get a higher payoff from office when undesirable (i.e. have leader types equated with how much they steal from state resources). In this case the Opposition will always select an undesirable type in equilribria with repression, and will select a desirable type in equilibria without repression. Such issues may be relevant in understanding regime transitions whereby a dearth of desirable types limits the scope for democracy to emerge or the opposite.

Leaders do not choose policy in office. This assumption is used to help clarity the relevant forces without confounding further moral hazard issues. It is straightforward to add in a policy choice (e.g. a tax rate), but as long as desirable types make more desirable choice the qualitative results remain. An interesting extension involves the Leader deciding whether to make long term investments. This will make frequent power transitions costly for Citizens.

Coup attempts always succeed. A more natural approach would allow for continuous choices of repression and coup attacks, having the probability of success depend on the relative values (e.g. as in Besley and Persson (2011)). this would complicate the calculations, but the essential results will persist.

2.2 Analysis: Autocracy

'Autocratic' power transfers are those in which political power today ensures political power tomorrow. The Incumbent relies on repression, and this imposes a coup cost sufficient to dissuade Opposition attacks. Naturally, the preferences of citizens are irrelevant in such an equilibrium–the use of repression makes citizen preferences inconsequential. The leader eventually turns into the θ_L type, at which point repression is a necessity.
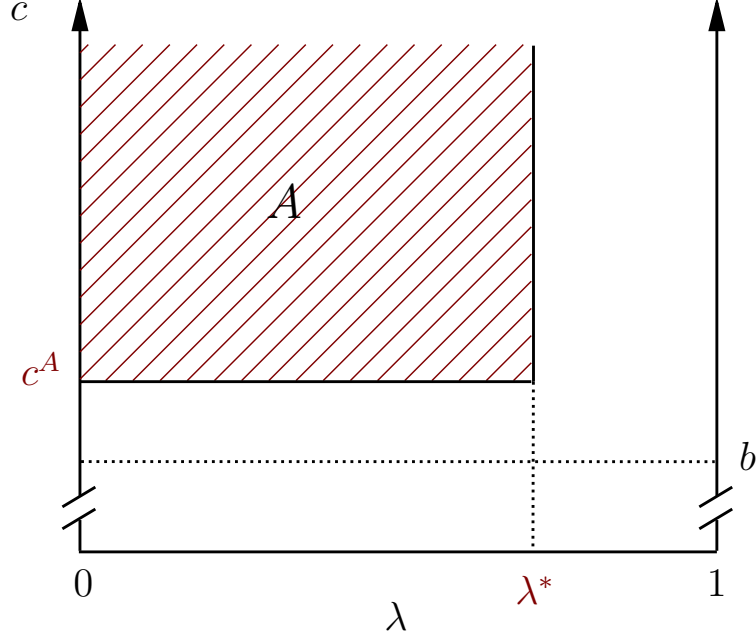
Figure 1: Existence of Autocracy Equilibria

Proposition 1. *An Autocracy equilibrium exists if and only if $c \geq c^A \equiv \left[1 + \frac{\beta}{1-\beta} \cdot (1-r)\right] \cdot b$ and $\lambda \leq \lambda^* \equiv \frac{1-r}{1-\beta \cdot r}$ where $r \equiv R/b$.*

The required parameter region is denoted A in Figure 1. In order for repression to be optimal, the expected duration of citizen support needs to be sufficiently short relative to the cost of repression. Thus, power must corrupt relatively quickly (i.e. λ must be sufficiently small). In order for repression to dissuade coups, it must be that the coup cost is high relative to the value of ruling as an autocrat. Since the latter decreasing in repression costs, we have that c must be sufficiently large.

An increase in repression costs (r) has an ambiguous effect on the existence of Autocracy equilibrium. On the one hand it makes repression less attractive, but on the other hand it reduces the coup threat (as the value of being in power is lowered).

2.3 Analysis: Democracy

Political power transfers are 'democratic' when they always coincides with the preferences of Citizens. There is no repression and no coups. Citizens support hinges on whether the Leader is a θ_H type.

Proposition 2. *A Democracy equilibrium exists if and only if $\lambda \geq \lambda^* \equiv \frac{1-r}{1-\beta \cdot r}$ and $c \geq c^D(\lambda) \equiv \left[1 + \frac{\beta}{1-\beta} \cdot \left[\frac{\lambda(1-\beta)}{1-\lambda \cdot \beta}\right]^2\right] b$.*
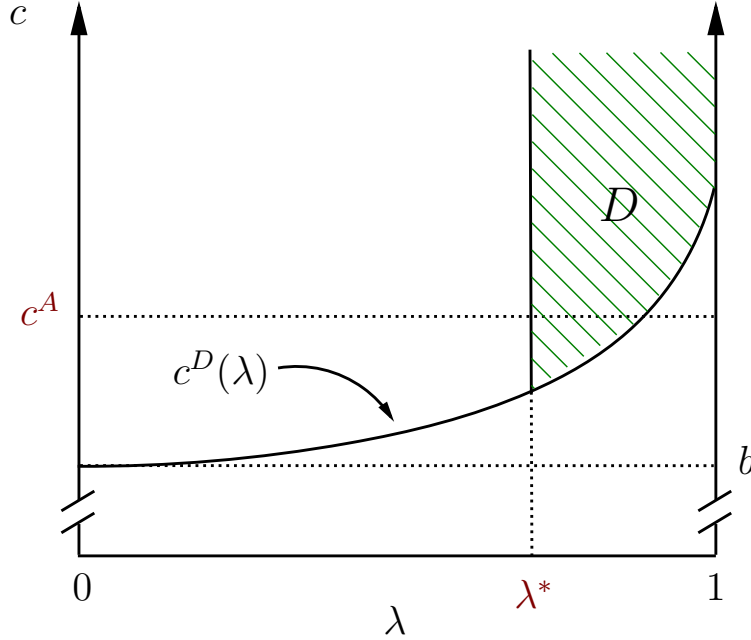
Figure 2: Existence of Democracy Equilibria

The required parameter region is denoted D in Figure 2. In order for repression to be non-optimal, power must corrupt relatively slowly (i.e. λ must be relatively high) since security in office hinges on citizen support. In order to dissuade coups the cost of coups must be sufficiently large relative to the value of being in power. Unlike autocracy, the value of leadership depends on λ. Thus we have that c must be sufficiently large, the critical value increasing in the value of being leader (i.e. in λ).

Notice that the absence of repression also helps with coups (i.e. $c^D(\lambda^*) < c^A$). Without repression, the opposition still has a shot at coming to power in the future when they do not attack. This makes the opposition less interested in mounting a coup (holding constant the value of being in power by considering $\lambda = \lambda^*$).

2.4 Analysis: Conflict

Political power transfers are 'conflictual' when political power is allocated by violent conflict between groups. I consider two main varieties of such equilribia.

The first variety of conflict equilibrium, conflict-with-repression, ignores citizen preferences. Leaders use repression and opposition groups mount coups occasionally (independently of the Incumbent's type). This sort of equilibrium requires that coup costs, c, be low enough that the Opposition would want to attack if it allowed them to rule as a secure autocrat (i.e. a leader that represses but is not subject to coup attempts). In this sort of equilibrium the Opposition is indifferent to attacking at cost c. The Opposition is thus indifferent to attacking
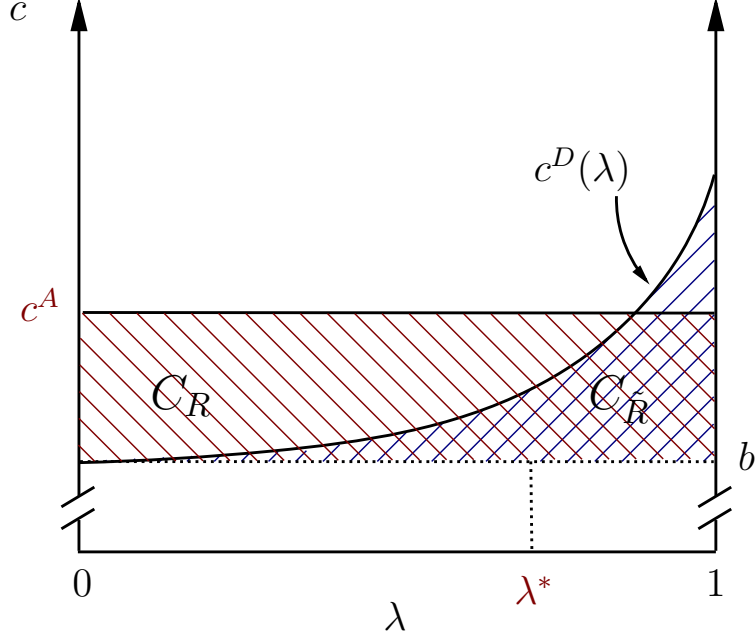
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Figure 3: Existence of Conflict Equilibria

an Incumbent that deviates by not repressing, and therefore this sort of equilibrium is most readily supported when the Opposition attacks with probability one in such cases.

The second variety of conflict equilibrium, conflict-without-repression, incorporates citizen preferences. Leaders rely on citizen support, yet the Opposition occasionally mount coups to seize power. This sort of equilibrium requires that coup costs be sufficiently small that the Opposition wishes to attack if it allowed them to rule as a secure Democrat (i.e. a leader that does not repress and is not subject to coup attempts). This critical coup cost is increasing in λ. This due to two factors: an increase in λ raises the value of ruling as a secure democrat and makes refraining from attack less attractive. In this sort of equilibrium the Opposition is indifferent to attacking at cost c. The Opposition is thus indifferent to attacking an Incumbent that deviates and uses repression, and therefore this sort of equilibrium is most readily supported when the Opposition attacks with probability one in such cases.

Proposition 3. *A conflict-with-repression equilibrium exists if and only if $c < c^A$. A conflict-without-repression equilibrium exists if and only if $c < c^D(\lambda)$.*

The set of parameters supporting a confict-with-repression equilibrium is denoted C_R in Figure 3. The set of parameters supporting a confict-without-repression equilibrium is denoted $C_{\tilde{R}}$ in Figure 3.

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2.5 Discussion

2.5.1 Multiple Equilibria

The figures make clear that multiple equilibria may arise. First, parameter values may simultaneously lie in C_R and $C_{\tilde{R}}$. Multiplicity here arises because of how deviations of Incumbents are treated. An Incumbent is willing to repress if failing to do so is certain to invite an attack, and is willing to refrain from repression if not doing so is certain to invite an attack. In both cases the Opposition is willing to attack with probability one since the value of becoming Incumbent justifies the cost of attack (just).

Second, parameter values may simultaneously lie in C_R and D. An Incumbent is willing to repress if failing to do so is certain to invite an attack (since attacking allows the Opposition to rule as an insecure autocrat), and is willing to refrain from repression safe in the knowledge that the Opposition will not attack (since attacking allows them to rule as a secure Democrat).

2.5.2 Welfare

Citizen welfare is clearly highest in the democratic equilibrium; the elite in power is always preferred to the alternative and there are no violent power transfers. Only the former feature remains in the conflict-without-repression equilibrium. The conflict-with-repression equilibrium involves violent power transfers but has the redeeming feature that preferred leaders are in power occasionally.[6] In contrast, the Autocratic equilibrium never has the preferred leader in power (in the long run) yet has the redeeming feature of there being no violent power transfers.

To do: compute probability of leader persistence in each equilibrium. It will be one in Autocratic equilibrium, λ in Democratic equilibrium, less than λ in conflict-without-repression, and varies between zero and $1 - r$ in conflict-with-repression. It is therefore clear that leaders are: (i) the most persistent in Autocracy, and (ii) more persistent in Democracy relative to conflict-without-repression. Other comparisons are less obvious.

2.6 Analysis: Democratic Norms

Now allow Citizen preferences to more nuanced than simply relying on elite types. Consider Citizens with democratic values in the sense that *procedure* also matters. For instance, Citizens consider an Incumbent *legitimate* if and only if they are a θ_H type and did not come to power by attacking a θ_H type in the previous period. Notice that such values involve a short memory–attacking a θ_H type condemns a leader to illegitimacy for a single period. Also note that Citizens are not required to condemn repressing leaders to illegitimacy. This notion of

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[6]This leans heavily on the simplifying assumption that the Opposition elite is always the high type. There is no compelling justification for this assumption when repression is used, making this redeeming feature rather weak.
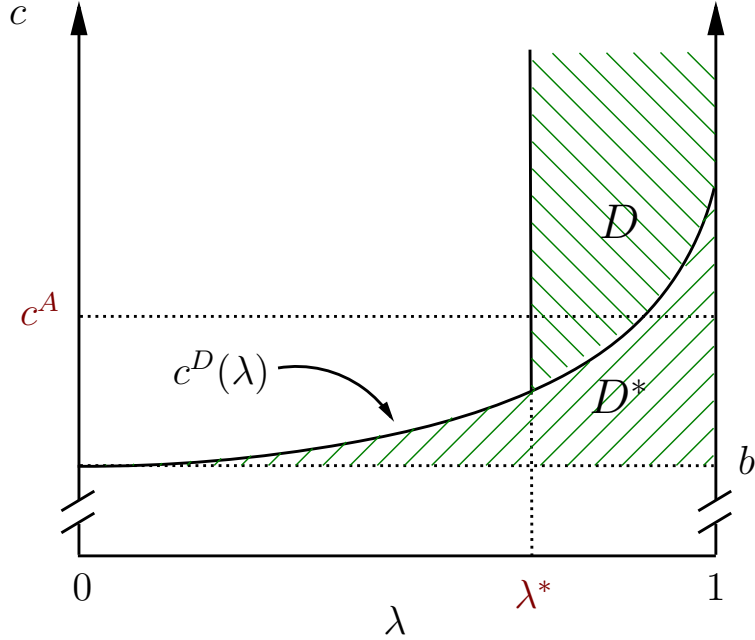
Figure 4: Existence of Democratic Values Equilibrium

legitimacy hinges on values in the sense that conditional on the Incumbent being a θ_H type, how they came to power does not affect Citizen payoffs.

A 'democratic values' equilibrium is a Democracy equilibrium when Citizens hold the 'values' outlined above. Naturally, this equilibrium continues to exist when parameters support the Democracy equilibrium without values (i.e. in region D). The interesting issue is whether democratic values expands the scope for democratic behaviour.

Proposition 4. *A Democratic Values equilibrium exists if $c \leq c^D(\lambda)$.*

Under the stated condition, the Opposition is willing to attack if doing so allows them to rule as a legitimate leader. This itself also ensures that the Opposition is unwilling to attack a legitimate leader–doing so will render them an illegitimate leader, and therefore subject to attack. The condition also ensures that repression is dissuaded–it is either redundant (the leader remains θ_H) or ineffective (the leader becomes θ_L, triggering an attack).

In region D coups against legitimate leaders are dissuaded by the cost alone. That is, even if a coup against a legitimate leader allowed one to rule as a legitimate leader. But because the coup cost is prohibitively high, Incumbents must find repression too costly. Indeed, D disappears as r goes to zero. In contrast, D^* does not depend on r.

3   Discussion

3.1   Endogenous λ

The key parameter, λ, could reasonably be made endogenous if we thought of institutions or policies that slowed the corrupting influence of power. Institutions include those influencing the personalist nature of rule in competing groups (power corrupts groups slower than individuals since groups can make attempts to weed out bad apples). Policy includes the establishment of genuine anti-corruption programs, as opposed to empty rhetoric and ineffectual or vindictive investigations (Hollyer and Wantchekon (2015)). Such programs may be a way in which to slow the speed with which power corrupts. Under autocratic outcomes, a leader's tenure does not depend on whether they are corrupt. There is therefore no incentive to engage such programs. However, in democratic regimes a leader's hold on power is completely contingent on remaining non-corrupted. As such, there are strong incentives to initiate genuine anti-corruption measures in democracies.

3.2   Leader Actions

We could also let Leaders take actions that benefit Citizens. To emphasize the costs of irregular turnover, it would be interesting to consider long-term investments, whereby the Leader enjoys a payoff only if they are in power the following period. Autocrats are the most willing to make such investments, and this must be weighed against their greater propensity to be an undesirable type. Speedy turnover of leaders also relates to work suggesting negative consequences of political instability; e.g. the impact on corruption (Campante et al. (2009)) and the environment (Fredriksson and Svensson (2003)).

3.3   Endogenous Opposition Type

What if Opposition was not automatically a θ_H type? instead, suppose that the group is able to select the type of the representative elite. Do they have a strict incentive to use a θ_H type? In autocracy, the answer is no. it makes no difference since repression makes leader types irrelevant (i.e. even high types want to repress). In democracy, the answer is yes. a high type allows them to save on repression costs. more generally, in any equilibrium involving no repression the Opposition strictly prefers to use a high type. in any equilibrium involving repression, Opposition does not have a strict incentive to use a high type, but nothing would change if a low type were used.

3.4   Powerful Citizens

An alternative model with powerful citizens; let citizens be the ones that attack and replace the leader with a high type (taking as given their incentives for repression and penchant for turning bad). Although similar insofar as some equilibria have citizens powerful enough to dictate

their ruler, the model is not equivalent. Certainly there would not be any conflict equilibria. Furthermore, the reliance on the key parameter λ is quite different: incentives to rebel in the autocratic equilibrium would require λ sufficiently low that a one-time replacement of a good type is not worth the fighting cost. incentives to rebel in the democratic equilibrium would not depend on λ since the citizens' payoff in equilibrium does not depend on λ. The point is not that citizens are always powerless in practice, but, rather, that democratic equilibrium can arise even if citizens are powerless to use violence to enforce their preferences.

4   Conclusions

The tendency for power to corrupt is not only widely noted but also offers important implications for the analysis of political institutions. The quality of governance is not shaped merely by whether it is desirable leaders that come to power, but also centrally by whether desirable leaders cede power once they turn undesirable. In order to clarify the incentives to cede, attack and repress, this paper offers a simple dynamic model of political power transfers. In addition to power corrupting, the key features are that power transfers are the result of inter-elite conflict mediated by citizen preferences. The model shows how the propensity for power to corrupt shapes the nature of the power transfers regime–autocracy, conflict or democracy–and outlines the role of democratic values in this process.

A   Derivations and Proofs

Throughout, let V denote the value of starting the period as a high-type incumbent.

A.1   Autocracy

Proof of Proposition 1.

In an Autocratic equilibrium, V satisfies:

$$V = -R + b + \beta \cdot V, \tag{1}$$

and therefore gives:

$$V = \frac{b - R}{1 - \beta} = \frac{1 - r}{1 - \beta} \cdot b, \tag{2}$$

where $r \equiv R/b$.

An autocratic equilibrium exists if and only if (i) it is optimal for the incumbent to repress, and (ii) it is optimal for the opposition to not mount a coup at the high cost.

In order for repression to be optimal:

$$V \geq \lambda \cdot [b + \beta \cdot V], \tag{3}$$

which is:

$$\lambda \leq \frac{V}{V + R}. \tag{4}$$

Using (2) in (4), this is

$$\lambda \leq \lambda^* \equiv \frac{1 - r}{1 - \beta \cdot r}. \tag{5}$$

In order for no coups to be optimal:

$$-c + b + \beta \cdot V \leq 0, \tag{6}$$

which is

$$c \geq c^A \equiv \frac{1 - \beta \cdot r}{1 - \beta} \cdot b. \tag{7}$$

Therefore, an autocratic equilibrium exists when $\lambda \leq \lambda^*$ and $c \geq c^A$.

A.2   Conflict

A.2.1   With Repression

Let the opposition mount a coup with probability $\sigma \in (0, 1)$. Then V satisfies:

$$V = -R + (1 - \sigma) \cdot [b + \beta \cdot V], \tag{8}$$

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and therefore gives:

$$V = \frac{(1 - \sigma) - r}{1 - (1 - \sigma) \cdot \beta} \cdot b. \tag{9}$$

In order for the opposition's mixed strategy to be optimal, V must satisfy $V \geq 0$ and

$$-c + b + \beta \cdot V = 0. \tag{10}$$

This gives

$$V = \frac{c - b}{\beta}, \tag{11}$$

where $c \geq b$. The mixing probability is determined by using (11) in (9).[7] The constraint that $\sigma > 0$ implies that

$$c < c^A, \tag{12}$$

and the constraint that $\sigma < 1$ (which is $c > (1 - \beta \cdot r) \cdot b$) can be ignored since it is implied by $c \geq b$.

Given that Opposition is indifferent to coups at a cost c, it follows that they find attacking conditional on the absence of repression optimal. This is sufficient to dissuade repression (it is costly but invites an ejection from office).

We could also consider equilibria in which the probability of attack following repression is the same as that on the equilibrium path. In such cases we use (11) in (4) to et that for repression to be optimal we need:

$$\lambda \leq \lambda_1^C(c) \equiv \frac{\frac{c-b}{\beta}}{\frac{c-b}{\beta} + R} = \frac{c - b}{c - b + \beta \cdot R} = \frac{c - b}{c - (1 - \beta \cdot r) \cdot b}. \tag{13}$$

Notice that $\lambda_1^C(b) = 0$ and that $\lambda_1^C(c^A) = \lambda^*$. An alternative characterization is $\lambda_1^C(c) = \hat{c}^{-1}(c)$ where

$$\hat{c}(\lambda) \equiv \left[1 + \beta \cdot \frac{\lambda}{(1 - \lambda)} \cdot r\right] b. \tag{14}$$

That is, the constraint can also be written $c \geq \hat{c}(\lambda)$, noticing that $\hat{c}(0) = b$ and $\hat{c}(\lambda^*) = c^A$.

A.2.2 Without Repression

Let the opposition mount a coup with probability $\sigma \in (0, 1)$. Then V satisfies:

$$V = \lambda \cdot (1 - \sigma) \cdot [b + \beta \cdot V], \tag{15}$$

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[7]Explicitly, this is $\sigma = \frac{b(1 - \beta r) - (1 - \beta)c}{c\beta}$. Thus the probability of conflict is independent of λ (as expected, since repression is used), is decreasing in c, is increasing in b, and is increasing in β.

and therefore gives:

$$V = \frac{\lambda \cdot (1 - \sigma)}{1 - \lambda \cdot (1 - \sigma) \cdot \beta} \cdot b. \tag{16}$$

In order for the opposition's mixed strategy to be optimal, V must satisfy $V \geq 0$ and

$$-c + b + \beta \cdot \lambda V = \beta[\lambda v + (1 - \lambda)V], \tag{17}$$

where $v \equiv \frac{\beta(1-\lambda)}{1-\beta\lambda} \cdot V$ is the value of being in opposition and facing a high type incumbent.[8] The left side is the payoff to mounting a coup and the right side is the discounted value of starting the next period as the opposition.

This gives

$$V = \frac{c - b}{\beta} \cdot \frac{1 - \beta\lambda}{\lambda(1 - \beta)}. \tag{18}$$

The mixing probability is determined by using (18) in (16). The constraint that $\sigma > 0$ implies that

$$c \leq c^D(\lambda) \equiv \left[1 + \beta(1 - \beta) \cdot \left[\frac{\lambda}{1 - \lambda \cdot \beta}\right]^2\right] b, \tag{19}$$

and the constraint that $\sigma < 1$ can be ignored since it is implied by $\lambda \leq 1$ and $c \geq b$.

Given that Opposition is indifferent to coups at a cost c, it follows that they find attacking conditional on repression optimal. This is sufficient to dissuade repression (it is costly but invites an ejection from office).

We could also consider equilibria in which the probability of attack following repression is the same as that on the equilibrium path. In such equilibria we can use (18) in (4) to get that for no repression to be optimal we need:

$$\lambda \geq \frac{\frac{c-b}{\beta} \cdot \frac{1-\beta\lambda}{\lambda(1-\beta)}}{\frac{c-b}{\beta} \cdot \frac{1-\beta\lambda}{\lambda(1-\beta)} + R}. \tag{20}$$

This implies $\lambda \geq \lambda_2^C(c)$, where $\lambda_2^C(0)$ and $\lambda_2^C(\infty) = 1$. In particular, we have $\lambda_2^C(c) \equiv \tilde{c}^{-1}(c)$ where:

$$\tilde{c}(\lambda) \equiv \left[1 + \beta(1 - \beta) \cdot \frac{\lambda^2}{(1 - \lambda)(1 - \beta\lambda)} \cdot r\right] b. \tag{21}$$

That is, $c \leq \tilde{c}(\lambda)$.

A.3 Democracy

A.3.1 Basic: Without Norms

Proof of Proposition 2

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[8]This value, denoted v, satisfies $v = \beta[\lambda v + (1 - \lambda)V]$.

Need no repression and no coups.

In this case, V satisfies:

$$V = \lambda \cdot [b + \beta \cdot V], \tag{22}$$

and therefore gives:

$$V = \frac{\lambda}{1 - \lambda \cdot \beta} \cdot b. \tag{23}$$

For no repression to be optimal:

$$\lambda \geq \frac{\frac{\lambda}{1 - \lambda \cdot \beta} \cdot b}{\frac{\lambda}{1 - \lambda \cdot \beta} \cdot b + R}, \tag{24}$$

which simplifies to:

$$\lambda \geq \lambda^*. \tag{25}$$

For no coups, we need

$$-c + b + \beta V \leq \beta[\lambda v + (1 - \lambda)V] \tag{26}$$

where $v \equiv \frac{\beta(1-\lambda)}{1-\beta\lambda} \cdot V$ is the value of being in opposition and facing a high type incumbent.[9] The left side is the payoff to mounting a coup and the right side is the discounted value of starting the next period as the opposition. This is

$$c \geq c^D(\lambda). \tag{27}$$

Notice that $c^D(\lambda^*) = \frac{1 - r\beta(2-r)}{1-\beta} \cdot b$ (which is less than c^A) and $c^D(1) = b/(1 - \beta)$ (which is greater than c^A).

A.4 Democracy with Political Norms

Proof of Proposition 4

Now introduce political norms. This means that citizens classify leaders as either 'legitimate' or 'illegitimate' and support only legitimate leaders. Suppose that citizens consider a leader legitimate in the current period if and only if they (i) are a high type, and (ii) did not come to power *this period* by ousting a high type last period.

Notice that such norms have a limited memory–a leader that seizes power from a legitimate leader is illegitimate for their first period in office, but becomes legitimate in the following period (as long as they remain the high type).[10] Furthermore, notice that legitimacy does not need to be conditioned on whether the Incumbent uses repression.

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[9]This value, denoted v, satisfies $v = \beta[\lambda v + (1 - \lambda)V]$.

[10]The fact that memory is limited is important–e.g. with unlimited memory, there can never be an equilibrium in which illegitimate leaders are attacked with probability 1 (assuming $c \geq b$). This is because it will always pay to wait a period and gain office for free. That is, the decision to not attack must be 'punished' by the Leader reverting to legitimate status.

Consider the case in which illegitimate leaders are attacked with probability 1. This makes it never worthwhile to become illegitimate–attacks are inevitable, so ceding is optimal. But then this implies that legitimate leaders are never attacked–doing so is costly but ensures ceding next period.

In this case, V satisfies:

$$V = \lambda \cdot [b + \beta \cdot V], \tag{28}$$

and therefore gives:

$$V = \frac{\lambda}{1 - \lambda \cdot \beta} \cdot b. \tag{29}$$

The opposition attacks an illegitimate leader with probability 1 if:

$$-c + b + \beta V \geq \beta[\lambda v + (1 - \lambda)V], \tag{30}$$

where v is the value associated with being in opposition to a high type legitimate leader. The left side is the payoff to attacking. The right side is the payoff to not attacking: waiting until next period implies the leader becomes legitimate (on the equilibrium path). This is:

$$c \leq c^D(\lambda). \tag{31}$$

The case of democracy without norms required the opposite of this: there should be no incentive to coup against a legitimate leader (given that a coup will allow one to rule as a legitimate leader). Here we want the incentive to coup (given that a coup will allow one to rule as a legitimate leader). It is this incentive that provides the credible commitment to punish an illegitimate leader: the value of being illegitimate is zero.

If (31) holds, then there will be no coups against legitimate leaders: doing so nets $-c+b < 0$ plus the discounted value of being illegitimate (which is zero). In other words, the Opposition always prefers to wait until the leader turns to the bad type, where they can assume power costlessly.

There is no incentive to use repression. Doing so is costly, but there is no benefit. If the Leader remains θ_H, then they are already protected by Citizen preferences. If the leader changes to θ_L, then (31) ensures that the Opposition will attack anyway.

B Extensions

B.1 Coup Cost

We could the assumption of perfect substitutes and instead assume imperfect substitutes: coup cost equals $D_S c_S + D_R c_R$ where D_S and D_R are binary indicators for whether citizens support and whether incumbent represses respectively, and c_S and c_R are positive costs.

Could also make support and repression complements: coup cost equals $D_S D_R \cdot c$. Here repression is only valuable if citizens support, and support is protective only if there is repression.

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