Why Did Putin Invade Ukraine? A Theory of Degenerate Autocracy*

March 12, 2026

Short title: Degenerate Autocracy

Keywords: nondemocratic politics, authoritarian dynamics, repression, information, Russia-Ukraine war.

Georgy Egorov, Kellogg School of Management, Northwestern University, 2211 Campus Drive Evanston, IL 60208; g-egorov@kellogg.northwestern.edu.

Konstantin Sonin, Harris School of Public Policy, University of Chicago, 1307 E 60th St, Chicago, IL, 60637; ksonin@uchicago.edu.

*The authors are grateful to Zhaotian Luo, Roger Myerson, Adam Przeworski, Barkley Rosser, and Jorgen Weibull for their helpful comments, and Sam Liberatore and Ewan Rawcliffe for excellent research assistance.

Why Did Putin Invade Ukraine? A Theory of Degenerate Autocracy

Abstract

Many dictatorships end up with a series of disastrous decisions such as Hitler's attack on the Soviet Union or Saddam Hussein's aggression against Kuwait. Even if a certain policy choice is not ultimately fatal for the regime, such as Mao's Big Leap Forward or the Pol Pot's collectivization drive, they typically involve both a miscalculation by the leadership and an institutional environment in which better-informed subordinates have no chance to prevent the decision from being implemented. We offer a dynamic model of nondemocratic politics in which repression and bad decision-making are self-reinforcing. Repression reduces the immediate threat to the regime, yet raises future stakes for the dictator; with higher stakes, the dictator puts more emphasis on loyalty than competence, which in turn increases the probability of a wrong policy choice. Our theory offers an explanation of how rational dictators end up in an informational bubble even in highly institutionalized regimes.

Word count: 8,886.

The war that Russia launched against Ukraine in February 2022 presents an intellectual puzzle for theorists of authoritarian regimes. A naive rationalist analysis prior to the war would almost inevitably have concluded that the outcome of brinkmanship would not involve actual warfare. Regardless of the estimates of the relative power of each party, an actual war is associated with such costs for both sides that avoiding them seems to provide strong incentives to compromise (Fearon, 1995; Powell, 2000; Blattman, 2022). Not surprisingly, most analysts and public commentators who based their analysis on rationalist models were discussing Putin's strategic "bluff" on the brink of invasion (Driedger and Polianskii, 2023; Michaels, 2024). And yet the Russia-Ukraine war has become the bloodiest and costliest interstate conflict since World War II, involving the use of modern war tools on a scale unheard of in decades.

Even more importantly, while it might take years to end the conflict and decades to fully assess the consequences, it is clear that the decision to invade Ukraine has caused a lot of damage to Putin's regime and its functionaries (Stoner, 2022; Gomza, 2023). In the first two years of the Russia-Ukraine war, almost a million Russians fled the country, twice as many as in any year after the collapse of the Soviet Union in 1991. Though at present there is no way to determine the exact outcome of the Russia-Ukraine war, we observe that over the last 100 years, no war of conquest on a similar scale has led to anything rather than a defeat, with major internal repercussions, of the aggressor state.

Despite the title question, our theory is not a theory of war – it is a theory of authoritarian regimes that are prone to major policy mistakes when they have to combine heightened repression with ever-increasing emphasis on loyalty. There is a mass of anecdotal evidence that Putin's decision to launch a full-scale invasion of Ukraine on February 24, 2022 was the result of a botched intelligence-processing and decision-making process at the top level of Russian leadership.[1] Over the quarter century span of Putin's rule, he has been increasingly reliant on his old personal connections, rather than professional bureaucrats (Gessen, 2012; Yaffa, 2021; Badanin and Rubin, 2025); even casual association with Putin two or three decades prior resulted in signif-

[1] See also "Putin's Colossal Intelligence Failure", *The Russia File*, Kennan Center, March 12, 2022; "Hubris and isolation led Vladimir Putin to misjudge Ukraine", *The Washington Post*, April 12, 2022; "How Putin's War in Ukraine Became a Catastrophe for Russia", *The New York Times*, December 16, 2022; "Putin, Isolated and Distrustful, Leans on Handful of Hard-Line Advisers" , *The Wall Street Journal*, December 23, 2022; "What Russia Got Wrong", *Foreign Affairs*, February 8, 2023.

icantly higher chances to become very rich (Dawisha, 2015; Myers, 2015; Lamberova and Sonin, 2018). He has appointed low-rank security officers and as much as seven of his former bodyguards to high-level government positions (Belton, 2021; Badanin and Rubin, 2025). In the run-up to the invasion, Putin ignored both public and private advice of military and foreign affairs experts unless it was fully supportive of his decision to launch the war (David and Miron, 2023).

Putin's decision to invade Ukraine is just one of many examples of dictators' decisions that appear unforced errors in hindsight. Emperor Nicholas II's decision to enter World War I in 1914, in the absence of any threat to the core security interests of the Russian Empire, led to a revolution, the collapse of the empire, the nearly total destruction of the elite, and an execution of the entire emperor's family (Lieven, 2015). Hitler's decision to invade the USSR after failing to defeat Britain and then declaring war against the USA, the world's largest industrial power, before defeating the Soviets, made the war unwinnable for Germany as early as 1941 (Harrison, 1998; O'Brien, 2015). Saddam Hussein's decision to invade Kuwait in 1991 led to a highly predictable military defeat at the hands of an international coalition, reparation payments that have lasted more than two decades, and ultimately Hussein's fall and execution (Karsh and Rautsi, 2007). The 1982 decision by the Argentinian military junta led by General Leopoldo Galtieri to invade the Falkland Islands led to a highly predictable military defeat, Galtieri's ouster, and the soon-to-follow demise of the regime (Lewis, 2002).[2] Weeks (2014) systematizes examples of dictators' choices that led to wars with predictably disastrous consequences.

The disastrous decisions made by the top leaders of authoritarian regimes do not necessarily involve launching a war. For our purposes, these decisions simply serve as examples of choices that should not have been made by the respective leaders.[3] Economic campaigns can be

[2] Analyzing the origins of the Falklands War, there is an argument that Galtieri and other junta members had their reasons to expect a muted UK reaction. Arguments justifying, ex ante, the disastrous decisions exist for every historical episode we mentioned. We are certainly not claiming that the results have been predetermined. Still, these decisions were as close to unforced errors as any historical decision could be.

[3] For modern explanations of war, we refer to excellent surveys in Fearon (1995), Jackson and Morelli (2011), and Herrera, Morelli and Nunnari (2019), as well as recent work on "democratic peace" (Debs and Goemans, 2010; Bueno de Mesquita and Smith, 2012; Weeks, 2012). It is well documented in studies of "democratic peace" that nearly all wars since 1945 were initiated by dictatorships. However, there is a prominent example of a modern war initiated by a functioning democracy, the U.S. invasion of Iraq in 2003. The decision to start the war relied, in part, on a dramatic underestimate of the future cost of the civil war and the US-born cost of postwar reconstruction. However, from a purely military standpoint, the operation went according to the pre-war analysis. Despite the massive humanitarian cost for Iraqis, the war did not threaten US domestic stability as Galtieri's, Hussein's, or Putin's wars affected their own countries.

just as ill-advised and self-defeating. Mao's Great Leap Forward from 1958 to 1962, which combined economic reforms with a political campaign to jumpstart industrial development in then-predominantly agrarian China, led to mass famine, economic disaster, and nearly cost Mao his political preeminence (Meng, Qian and Yared, 2015; Shih, 2022). What is surprising is that the dictators that make these decisions are not ancient emperors whom their subjects cannot approach. Rather, they operate in nominally institutionalized environments, with councils and advisors who presumably have specialized expertise, and their decisions are implemented by career professionals within structured hierarchies (Besley and Kudamatsu, 2009).

In this paper, we present a model of non-democratic regimes that addresses this apparent paradox. Despite the presence of bureaucratic hierarchy, various administrative bodies, and other institutions of state, the regime operates effectively as sultanistic (Chehabi and Linz, 1998). The leader's decisions are based on input from subordinates, but the leader himself chooses the quality of advice that he receives, with the primary goal of maintaining power. Specifically, the leader appoints an agent or council with better expertise and relies on their advice in making the policy decision. The leader has the freedom to choose an agent of any level of information-processing quality, from one who knows the regime's vulnerabilities for certain to one who cannot differentiate at all. This is an institutional choice made by the leader.

The leader's power is at risk only if the regime is vulnerable and a wrong policy decision is made. In such an environment, it seems a no-brainer to appoint an advisor with the highest information processing quality and to make the correct policy decision based on informed advice. The problem is that the advisor has an unobserved characteristic, their affinity with the opposition. This affinity is distributed independently of the lieutenant's quality; if it were positively correlated, this would only strengthen the effect. When deciding what advice to provide to the leader, the advisor considers two factors: the vulnerability of the leader and their own prospects under a new regime if the leader falls. As the leader is not as well informed as the advisor, the advisor has leverage and can falsely assure the leader of their safety, leading to a wrong policy decision by a vulnerable leader, which ultimately results in a change in leadership.

In our model, the vulnerability of the dictator leader is driven by external shocks. However, other factors also play a role in the decision-making process of the leader. The dictator's decision to repress opposition reduces the likelihood of a challenge, but also increases the stakes in future power struggles. Specifically, if the dictator has repressed opposition in the past, then once overthrown, this now-former leader represents a more serious threat for the new leader: if not repressed, the former dictator might regain power in the future, and with the reputation for repression, is more likely to repress in the future. Therefore, a leader with a history of repression is more likely to be repressed than a leader without a history of repression. This, in turn, affects the leader's choice of the level of repression and the quality of the advisor, and ultimately his chances of survival.

The worse survival prospects generate a vicious cycle. Once the leader is set on the repression path, the stakes become higher. The increasing stakes, the fear to be tried and executed if dethroned, result in the leader choosing advisors with a lower information-processing capacity. Such advisors are more loyal in equilibrium. Even with a high affinity for the opposition, they have a low ability to process information and are uncertain about the opposition's chances to oust the dictator. Thus, they stay loyal. However, the quality of policy making with such advisors is worse. As a result, a fully rational strategic dictator who has chosen to repress opposition to reduce the probability of a strong challenge ends up in an "informational bubble", surrounded by low-quality subordinates. This incompetence may lead to poor political or policy decisions even in situations where the dictator's survival is not directly at stake (and thus betrayal is not option), but such decisions may be costly to the country and eventually to the dictator. The examples we cited, from Nicholas II's decision to enter World War I to Putin's decision to attack Ukraine, do not come from treason but from the failure of their inner circles to advise them of the likely disastrous consequences.

Our theory makes specific predictions about the dynamics of individual dictatorships.[4] A new leader might be surrounded by brilliant people when he comes to power. His tenure might follow either a bloody or peaceful path, depending on many circumstances, including both luck and rational decisions. The dictators that stay in power long enough to witness their power wane become fearful of losing their position. Due to this fear, they replace competent subordinates

[4]There is a recent surge in literature that focuses on formal models of authoritarian dynamics: see, e.g., Paine (2021, 2022); Meng and Paine (2022); Gratton and Lee (2023); see also Subsection .

with loyal ones, which ultimately leads to poor advice and bad policy. As a result, the successes of a dictator's earlier years fall victim of later years' attempts (often futile) to hold on to power. Although there are individual examples of autocrats appointing competent reformers closer to the end of their tenure,[5] systematic evidence points out the relationship that our model predicts: towards the end of their tenure, authoritarians increasingly pursue bad policy (see, e.g., Besley and Kudamatsu, 2009). Jones and Olken (2005) used unexpected deaths of leaders as a source of exogenous variation to demonstrate that the negative effects of individual leaders are strongest for unconstrained autocrats. Easterly and Pennings (2017) replicated, using an expanded data set, the Jones and Olken's results with respect to low growth episodes in autocracies.

Much of the literature on autocracies assumes that the leader amasses greater authority vis. his subordinates over time; that is, authoritarian regimes become personalized (Tullock, 1987; Linz, 1978; Svolik, 2012). In a personalized regime, there are fewer controls on decision-making, so wrong decisions are more likely to go through (Chehabi and Linz, 1998; Weeks, 2014). Our theory links the deterioration of the quality of the decision-making process to increased repression and deterioration of the quality of the subordinates over time, complementing the "personalization" explanation.

Some features of our model are fairly standard. For example, the within-period interaction is aligned with the now standard theoretical approach to the loyalty vs. competence trade-off in authoritarian regimes (Egorov and Sonin, 2011; McMahon and Slantchev, 2015; Zakharov, 2016; Kosterina, 2017; Hollyer, Rosendorff and Vreeland, 2018; Tyson, 2018; Tyson and Smith, 2018); the presence of this trade-off has been empirically confirmed, in different contexts, in Jia, Kudamatsu and Seim (2015); Hassan (2017); Bai and Zhou (2019); Shih (2022); Mattingly (2024). Still, our baseline model is different: In contrast to Egorov and Sonin (2011), it does not assume that the agent is fully informed when the dictator is not vulnerable; in our model, there is imperfect information in either state. In McMahon and Slantchev (2015), the ruler solves the loyalty vs. competence dilemma by appointing the most competent general and disciplining him by underfunding.

[5] Francisco Franco technocratic reforms in 1957-59 that laid foundation for the "Spanish economic miracle" is an example of competent appointments in a mature authoritarian regime. Still, consistent with our model, these reforms have followed a drastic fall in repression levels under Franco.

When it comes to dynamics, we seek to expand the methodology beyond the now-standard approach to authoritarian dynamics (Acemoglu and Robinson, 2001, 2005; Acemoglu, 2003; Lagunoff, 2009; Bai and Lagunoff, 2011; Gratton and Lee, 2023; see more references and discussion in Section *Robustness*). Our primary motivation is that the reliance on two-state dynamic models with Markovian restriction on possible strategies limits the ability of these theories to explicitly focus on mechanisms of path-dependence, first discussed by Douglass North (North, 1981). Any formal theory of this type is bound to capture path dependence as multiple stable equilibria, saying very little about transitional dynamics. Our focus on reputational concerns allows us to go beyond the existing models by explicitly demonstrating the workings of such a mechanism, while also staying away from "folk-theorem" type of results.

In this paper, we do not directly discuss authoritarian power-sharing (Bueno de Mesquita et al., 2003; Gandhi and Przeworski, 2006; Svolik, 2009, 2012; Powell, 2013; Paine, 2021; Meng, Paine and Powell, 2022; Francois, Trebbi and Xiao, 2023). In Svolik (2012) dichotomy of "authoritarian power-sharing" vs. "authoritarian control", our model is a theory of authoritarian control (see also Hassan, Mattingly and Nugent, 2022). However, our model also contributes to understanding the sharing of authoritarian power. Specifically, relying on someone's privately obtained information is, effectively, sharing power. If a dictator chooses to allow media freedom as in Egorov, Guriev and Sonin (2009); Lorentzen (2014); Tyson and Smith (2018), or Shadmehr and Bernhardt (2011), then the autocrat's power is shared with whoever controls or influences the media. If the dictator relies, as he does in our model, on his subordinates for the information, then the power is shared with these subordinates, and these subordinates have "real authority" even if the dictator has the "formal" one (Aghion and Tirole, 1997).

Finally, our game-theoretic approach to the study of authoritarian regimes is not an antithesis to quantitative and qualitative studies in political science, economics, sociology, history, and other disciplines. (See, e.g., Przeworski, 2022, for the recent scathing critique of formal models of authoritarian regimes.) Game-theoretic models of politics do have limitations, and by construction they are bound to be simplistic representations of the reality. (See Paine and Tyson, 2020, for a detailed discussion of the usage of formal models in political science.) Choosing a narrow set of actors and their possible actions, which is necessary to make a game-theoretic model tractable, invariably involves depriving all other potential actors of agency. This particular paper demonstrates the critical complementarity between the emphasis on loyalty and the repression of opposition, which results, dynamically, in a "degenerate autocracy". This could have been challenging to do, in a logically consistent way, without using game theory.

The rest of the paper is organized as follows. Section *Setup* introduces our theoretical model. Section *Static Regime Formation* analyzes the decisions the dictator makes within a period. Section *Joint Dynamics of Repression and Bad Policy* considers dynamic interaction between policy choices and repression. Section *Robustness* briefly discusses specific modeling choices that we make. The last Section concludes.

Setup

Time is discrete, $t = 1, 2, \ldots \infty$. The game is an infinite sequence of interactions between the leaders, their subordinates, and the opposition.[6] Each incumbent leader decides whether or not to repress the opposition, determines the quality of information on which to base his policy choice and makes the policy choice. Depending on these decisions, the leader might remain in power or lose to an opponent. The power struggle is a lottery with the odds determined by the incumbent's choices. If the opponent overthrows the incumbent, the now-former dictator becomes the opposition.

Every time there is a power struggle, its winner – either the former incumbent or the former opponent – decides whether to execute the loser. If the opposition is not repressed, the leader faces a challenge from either the former incumbent or a new challenger in the next period. If the opposition is repressed, then the dictator faces a challenge in the next period only with probability $\mu < 1$, and the challenger is new. (The previous challenger dies.) When there is a challenge, the odds that the dictator faces in the struggle for power are determined as follows. The dictator may be vulnerable (with probability q, $0 < q < 1$) or safe; this is drawn independently in each period. The dictator may choose a safe policy $d = \overline{P}$ or risky policy $d = \underline{P}$; the former costs $C > 0$, while the latter is costless. We assume that the dictator wins if either she is not vulnerable or the policy is safe; the dictator loses if she is vulnerable and the policy is risky.

[6] For clarity, we use the pronoun *she* for all leaders and *he* for all subordinates.

The dictator herself does not know whether or not she is vulnerable in a given period, yet can gather information by appointing a lieutenant of competence $\theta \in \left[\frac{1}{2}, 1\right]$. Let $s = v$ denote the state of the world, in which the dictator is vulnerable; otherwise, the state of the world is $s = n$, $\Pr(s = v) = q$. If a lieutenant of competence θ is appointed, the lieutenant gets informative signal $\widehat{s} \in \{n, v\}$,

$$\Pr(\widehat{s} = v | s = v) = \Pr(\widehat{s} = n | s = n) = \theta.$$

That is, the lieutenant's competence θ is the precision of the signal he receives about the dictator's vulnerability.

Each lieutenant is a strategic player, yet they are short-lived; in other words, their behavior corresponds to a perfect Bayesian equilibrium of a one-period game. There is an infinitesimally small cost of hiring a lieutenant: if the dictator prefers to make an uninformed decision, she does not hire a lieutenant. In our analysis, we focus on the situations in which the dictator benefits from hiring a lieutenant; the conditions (1-2) guarantee that.

If the dictator had full information about her vulnerability in a given period, she would prefer to choose the safe policy $d = \overline{P}$ if and only if $s = v$. The lieutenant, however, may choose to betray the dictator – that is, to misinform the leader about the signal he received, which changes the dictator's odds of survival. (Assuming that the dictator prefers to have a lieutenant to not having one, she would always prefer to follow the signal that the lieutenant reports; see the scope conditions (1-2) and Proposition A3 in the Appendix, pages A-5-6.)

The signal received by the lieutenant becomes observable for the winner of the power struggle *ex post*. If the incumbent dictator wins, the lieutenant gets a wage w if he did not betray her (that is, reported the signal that he received truthfully) and suffers punishment $-\pi$ if he did (that is, misreported the signal that he received). If the opponent wins, the lieutenant gets a reward R. Thus, R parameterizes the lieutenant's affinity with the opposition. The values w and π are fixed and known to everyone; R is a random variable, which becomes known to the lieutenant before making a decision. Assume that R is distributed on $(0, \infty)$ with c.d.f. $F(x)$, p.d.f. $f(x)$ such that $f(x) > 0$ and $f'(x) < 0$ for $x > 0$. For simplicity and without loss of generality, we assume that if the lieutenant is indifferent as to whether to obey or betray, he obeys the dictator. Lieutenants live for one period; assuming otherwise overburdens the model without bringing significant insights to the issues we focus on.

Each dictator i maximizes her expected life-time utility

$$U(i) = \mathbb{E}\sum_{\tau=1}^{\infty}\beta^{\tau}U_{\tau}(i),$$

where $U_\tau(i)$ is the instantaneous utility she i receives in period t, $\beta < 1$ is the discount factor common to all dictators. The winner of the power struggle gets one-period utility H; the loser gets $-T < 0$ when repressed. When a dictator dies peacefully, which happens with probability δ, $K > 0$ subtracted from her utility. We assume $K < T$, $\delta K < H$. In all other circumstances, one-period utility equals 0.

In each period t, the timing of the stage game is as follows.

1. The incumbent leader either appoints a lieutenant of competence θ_t, or decides to make uninformed decisions.

2. The leader faces an opponent with probability $\mu \in (0,1)$ if the opposition was repressed and with probability 1 otherwise. If there is no opponent, the incumbent leader remains in power and the game moves to stage 8.

3. The state of the world $s_t \in \{n, v\}$ is realized.

4. If there is an opponent, the leader's lieutenant learns the realization of the signal about the leader's vulnerability, $\widehat{s}_t \in \{n, v\}$ and of the lieutenant's affinity with the opponent $R_t \in [0, +\infty)$. After that, the lieutenant informs the leader about the signal he received $m_t \in \{n, v\}$.

5. The leader chooses $d_t = d_t(m_t) \in \{\overline{P}, \underline{P}\}$.

6. The outcome of the power struggle is determined, depending on the state of the world and the incumbent leader's policy decision.

7. The winner of the power struggle decides whether or not to repress the opposition. If the loser is repressed, the next-period challenger (if any) will be a new player.

8. The opposition leader, if not repressed, and the dictator die independently with probability $\delta \in (0,1)$. If only the winner dies, the loser (if alive) becomes the next leader and faces an opponent next period. If both die, a new leader and a new opponent appear. If neither of the two dies, the winner is the leader of the next period and the loser (if she is alive) is the opponent in the next period.

In a generic dynamic game, strategies may depend on the whole history, and this leads to a large number of equilibria, many unrealistic. We focus on a class of symmetric equilibria where the dictator's actions in any period may depend on minimal information about the opponent: specifically, whether or not this opponent repressed opposition in the past.[7] If so, the dictator's own history of repressions (whether she executed losers in the past or not) also becomes payoff-relevant because the opponent, if she wins the struggle for power, would use that variable to determine the current incumbent's fate. In other words, we focus on equilibria where the strategies may depend on whether or not both the dictator and the opponent ever resorted to repression.

We relegate a full formal definition of strategies to the Appendix (pages A-3-5); the Appendix also contains an exhaustive list of notation (page A-2). Here, we focus on essential details; in particular, as we will be focusing on symmetric Markovian strategies, we omit the time subscripts. Let us say that a leader has a *good reputation* (G) if he has never resorted to repression before and has a *bad reputation* (B) otherwise. Thus, all possible combinations of the winner's and the loser's types belong to the set $\Lambda = \{(B,G),(G,B),(G,G)\}$. Indeed, if the current winner executed a loser before, then the opponent is necessarily a "novice", and therefore (B,B) is impossible for any history, on or off equilibrium path.

Definition 1. *A tuple* $(\alpha^*,\theta^*,m^*,d^*)$, *where* α^* *and* θ^* *are mappings from* Λ *to* $[0,1]$, *the lieutenant's information for the dictator* $m^*_{\theta^*}$ *is a mapping from* $\{n,v\}\times[0,\infty)$ *to* $\{n,v\}$, *and the dictator's decision function* $d^*_{\theta^*}$ *is a mapping from* $\{n,v\}$ *(information from the lieutenant of competence* θ^**) to the policy set* $\{\overline{P},\underline{P}\}$ *is called an* equilibrium *if and only if*

[7] Admittedly, our assumption that the players' strategies might depend on "reputation" state variables, the reputation of the winner and the reputation of the loser, is a short-cut. It is possible to do the same model with new leaders having, with some probability, a commitment type that always represses the opposition, and other players having uncertainty about whether or not the leader has this commitment type as in the canonical models of reputation (Kreps and Wilson, 1982; Milgrom and Roberts, 1982). Our approach allows to carry out the basic intuition and economize on notation. See also Section *Robustness*.

(a) for any $(X,Y) \in \Lambda$*, choosing repression with probability* $\alpha^*(X,Y)$ *is optimal for a winner with reputation* X *if loser's reputation is* Y*;*

(b) for any $(X,Y) \in \Lambda$*, choosing a lieutenant with competence* $\theta^*(X,Y)$ *is optimal for a dictator with reputation* X *if next opponent's reputation is* Y*;*

(c) for a lieutenant of competence θ^* *who received signal* $\hat{s}$ *and has learned the reward* R*, it is optimal to reveal that the signal truthfully* $m = \widehat{s}$ *if the expected payoff exceeds the expected payoff of misinforming the dictator;*

(d) for a dictator that appointed a lieutenant of competence θ^**, the policy choice* $d^*_{\theta^*}$ *is optimal given the information she received from the lieutenant.*

We further require that the in-period interaction between the dictator and the lieutenant be a perfect Bayesian equilibrium. As we focus on the parameter range in which the dictator opts to choose a lieutenant rather than choosing a policy without new information, the dictator always chooses to "follow" the advice. That is, the dictator chooses the safe policy if and only if the lieutenant informs her that she is vulnerable: $d_t(v) = \overline{P}$, $d_t(n) = \underline{P}$. (Proposition A3 in the Appendix, pages A-6-8, shows this formally.)

Static Regime Formation

To make our analysis tractable, we split it into several steps. We start by analyzing the choice of the regime by the dictator. First, we study the lieutenant's behavior, since it is least connected with past and future decisions of players. Then, treating lieutenants' behavior as given, we find the dictator's optimal choice of lieutenant's competence; these will depend on dictator's expected continuation utilities, which we will for a moment treat as given. After analyzing the static institutional choice, we will characterize dictator's utilities in the case of no repression and repression, again treating future behavior of all players, including herself, as given. This will allow us to find out when players choose the repression regime. The next important step is to find dictators' best responses if they correctly predict future winners' decisions on repression, but consider the odds of winning or losing the struggle for power to be fixed arbitrarily. We will say that the corresponding strategy profiles result in *dynamically consistent paths*. Finally, to find equilibria, we check strategy profiles that result in dynamically consistent paths, on which future dictators do hire lieutenants, who are short-lived, of the quality expected by the current incumbent.

The Information Gathering Trade-off

We begin by studying the behavior of a lieutenant of fixed type θ who has received a noisy signal $\widehat{s} \in \{n, v\}$ about the dictator's vulnerability and the value of potential reward R from the opponent if the dictator is overthrown.

The first observation is that for the dictator, it does not make sense to appoint a lieutenant and then *not* to follow up on the lieutenant's information (see Proposition A3, pages A-6-8, the Appendix for a formal proof). Appointing a lieutenant of competence θ makes sense for the dictator if and only if the dictator's payoff with such a lieutenant exceeds both the expected payoff with the risky policy regardless of circumstances and the expected payoff with the safe policy regardless of circumstances; we focus on this situation. (We provide the full scope conditions below.) Thus, if the lieutenant gets the signal $\widehat{s} = n$, then he informs the dictator that she is not vulnerable; saying otherwise cannot increase the agent's payoff.

The only situation where the lieutenant behaves opportunistically is when the signal is $\widehat{s} = v$. The lieutenant betrays the dictator (that is, misinforms her about the signal he received) if the expected utility of betrayal exceeds that in the case of no betrayal. Both expected utilities are conditional on the agent's signal $\widehat{s} = v$ and thus are functions of the agent's competence θ. To calculate them, the agent uses the Bayes formula:

$$\begin{aligned}\Pr\left(s = v|\widehat{s} = v\right) &= \frac{\Pr(\widehat{s} = v|s = v)\Pr(s = v)}{\Pr(\widehat{s} = v|s = v)\Pr(s = v) + \Pr(\widehat{s} = v|s = n)\Pr(s = n)} \\ &= \frac{q\theta}{q\theta + (1-\theta)(1-q)}.\end{aligned}$$

So, after receiving signal $\widehat{s} = v$ and learning the value of the reward R, the lieutenant's betrayal yields, in expectation

$$R\frac{q\theta}{q\theta + (1-\theta)(1-q)} - \pi\frac{(1-\theta)(1-q)}{q\theta + (1-\theta)(1-q)},$$

while staying loyal results in w. Therefore, the lieutenant betrays the incumbent, by informing her that she is not vulnerable when in fact $\hat{s} = v$, if and only if

$$R > w + \frac{(1-q)(1-\theta)}{q\theta}(w + \pi).$$

This gives us the following formal result. (Since lieutenants are short-lived, we describe perfect Bayesian equilibria of the one-period game between the dictator and the lieutenant that the dictator has chosen.)

Proposition 1. *If the lieutenant's signal is that the leader is not vulnerable, $\hat{s} = n$, the lieutenant stays loyal regardless of the affinity with the opposition. If the signal is that the leader is vulnerable, $\widehat{s} = v$, the lieutenant stays loyal if and only if*

$$R \leq R^*(\theta) \equiv w + \frac{(1-q)(1-\theta)}{q\theta}(w + \pi).$$

The threshold level $R^*(\theta)$ of reward that is required by the lieutenant of a fixed type θ, having received signal $\widehat{s} = v$, to betray the dictator, increases with the lieutenant's wage w, the level of punishment for treason π, and decreases with the ex ante probability of the dictator being vulnerable q. In particular, a more competent lieutenant, one with a higher θ, betrays the dictator for lower values of the reward.

The intuition behind the comparative statics in Proposition 1 is as follows. When the lieutenant of competence θ receives the signal that the dictator is vulnerable, there is a trade-off between the probability of the reward from a victorious opponent and the probability of a punishment from a surviving incumbent. A lieutenant of high competence has a very precise signal: such a lieutenant knows with near-certainty that the dictator is vulnerable. Thus, a competent lieutenant might accept a lower reward for misinforming the dictator about the signal, which results in the poor policy choice, and, by doing so, the lieutenant guarantees the dictator's loss.

Both a higher reward for remaining loyal and a higher punishment for the opposite increase the lieutenant's incentives to be loyal. An increase in q leads to an increase of the probability that conditions are favorable for the enemy, as perceived by the lieutenant. This, in turn, decreases lieutenant's fear of being punished, and makes him more likely to betray. Finally, though a smarter lieutenant receives a signal that the enemy is likely to win less frequently than a less competent one does, once he does, he is more sure that the enemy will win if he betrays, which also decreases his fear of punishment.

Equilibrium Choice of Loyalty vs. Competence

The dictator does not observe the affinity between the lieutenant and the opponent (the value of the reward for betrayal R), but knows its distribution. From the leader's standpoint, the probability of betrayal (i.e. telling the dictator that she is not vulnerable when $\widehat{s} = v$) conditional on the fact that the agent gets a signal $\widehat{s} = v$ is $= 1 - F(R^*(\theta))$. The probability of losing the struggle is therefore

$$p(\theta) = q\theta(1 - F(R^*(\theta))) + q(1-\theta),$$

where $q\theta(1 - F(R^*(\theta)))$ is the probability that the incumbent is actually vulnerable $(s = v)$, the lieutenant got the right signal $(\widehat{s} = v)$ and chooses to betray, while $q(1-\theta)$ is the probability that the incumbent is vulnerable $(s = v)$ and the lieutenant gets the wrong signal $(\widehat{s} = n)$.

The reason why the dictator appoints the better-informed lieutenant is efficiency. Decisions based on informed advice save the cost of a safe policy. The lieutenant's information results in the safe policy $(d = \overline{P})$ with probability

$$r(\theta) = (q\theta + (1-\theta)(1-q))F(R^*(\theta)).$$

It is straightforward that $r(\theta)$ decreases with respect to θ.

Being aware of the constraints imposed by the lieutenant's possible disloyalty, the dictator faces the following maximization problem. Let the expected utilities of winning and losing in the current power struggle be denoted by U and V, respectively. Then the dictator's optimization problem is

$$\max_{\theta}\{(1-p(\theta))U + p(\theta)V - r(\theta)C\}.$$

The dictator's solution of this maximization problem is given by the following proposition.

Proposition 2. *There is a unique perfect Bayesian equilibrium in the one-period-choice-of-a-lieutenant game. The dictator chooses a lieutenant characterized by θ^*, who is more competent, i.e., θ^* is higher, when the stakes are lower for the dictator ($U - V$ is lower) and the measures that have to be taken are more costly (C is higher).*

Basically, this proposition says that an insecure dictator, e.g., the one that fears that she will be executed upon removal from power, is bound to select less competent lieutenants. Indeed, as we know from Proposition 1, a more competent lieutenant is more likely to betray the dictator. With higher stakes, loyalty, the flip side, in equilibrium, of competence, becomes relatively more important for the dictator.

Proposition 2 is an important building block of our dynamic story: It shows that when the stakes for the dictator leader are high, the leader chooses to select a less competent lieutenant, thus increasing the probability of a bad policy choice. The stakes are high for the dictator when her reputation has deteriorated as a result of past repression decisions. So, repressing the opposition does reduce the probability of a challenge in the current period, yet has an endogenous opportunity cost – a leader with a bad reputation is bound to select less competent subordinates, increasing, ultimately, the probability of a fatal policy mistake.

Scope Conditions

In the preceding analysis, we assumed, without providing mathematical details, that the parameters of the model that we study are such that the leader always prefers to select a lieutenant rather than to make a policy choice without any advice. In this subsection, we describe the joint conditions on parameters that guarantee that this assumption holds. In the Appendix, pages A-5-6, it is demonstrated that these conditions are fulfilled for an open non-degenerate set of parameters.

Recall that the functions $p, r : \left(\frac{1}{2}, 1\right] \to [0,1]$ are defined as follows.

$$\begin{aligned} p(\theta) &= q\theta\left(1 - F\left(R^*(\theta)\right)\right) + q(1-\theta), \\ r(\theta) &= \left(q\theta + (1-\theta)(1-q)\right) F\left(R^*(\theta)\right), \end{aligned}$$

where $R^*(\theta) \equiv w + \frac{(1-q)(1-\theta)}{q\theta}(w+\pi)$.

As we saw, $p(\theta)$ is the probability that the dictator is vulnerable, but the lieutenant of competence θ tells the dictator that she is not vulnerable (either because he knows that she is vulnerable, but lies, or because he thinks that she is not vulnerable although she actually is), and $r(\theta)$ is the probability that the lieutenant of competence θ tells the dictator that the signal is v and therefore the safe policy is needed.

We say that parameters $C, H, T \in (0, +\infty)$ satisfy our scope conditions if there exists $\theta \in \left(\frac{1}{2}, 1\right]$ such that

$$\frac{p(\theta)}{1 - r(\theta)} < \frac{C}{H + T} < q. \tag{1}$$

Note that these conditions are also conditions for parameters $w, \pi \in (0, +\infty)$ and $q \in (0, 1)$ as they are part of the definition of functions p and r.

Lemma A1 in the Appendix, page A-6, shows that conditions (1) for parameters C, H, T, q, w, and π describe a set which is open and nondegenerate (has full dimensionality in $\mathbb{R}^6$).

Next, observe that the scope conditions (1) are formulated for H and T, which are one-period payoffs, but should be fulfilled for continuation values of winning and losing, U and V, respectively, which are relevant variables in the dynamic game, as well:

$$\frac{p(\theta)}{1 - r(\theta)} < \frac{C}{U - V} < q. \tag{2}$$

In what follows, conditions (2) serve as an additional refinement requirement for the equilibria that we discuss. Since for certain strategies $U = \sum_{\tau=1}^{\infty} \beta^{\tau} H = \frac{1}{1-\beta} H$ and $V = -T$, Lemma A1 in the Appendix, page A-5, guarantees that conditions (2) hold for an open non-degenerate set of parameters as well.

The scope conditions (1) guarantee that there exists always a $\theta \in \left(\frac{1}{2}, 1\right]$ such that

$$(1 - p(\theta)) H - p(\theta) T - r(\theta) C > \max\{H - C, -qT + (1 - q) H\},$$

which means that choosing a lieutenant is strictly better than "always safe policy" or "always risky policy". Lemma A2 in the Appendix, pages A-5-6, proves this formally.

Joint Dynamics of Repression and Bad Policy

In the previous section, we analyzed the leaders' choice of her information-gathering institution. Now, we are going to analyze how this choice and the policy choice evolve over time, responding to the leader's choice of the repressiveness of her regime.

To formally study the dynamics, we write the continuation values that correspond to different choices of the winner of a power struggle. As before, $(X, Y) \in \Lambda = \{(B, G), (G, B), (G, G)\}$ describes the history of the winner-loser pair at the point when the winner makes the repression decision.

Then U^E_{XY} is the continuation value of the winner when the choice is to execute the former opponent; U^S_{XY} when the decision is not to repress the opposition, and $U_{XY} = \max\left(U^E_{XY}, U^S_{XY}\right)$ is the optimal choice. V_{XY} is the continuation value of the loser of the power struggle, and W_{XY} is the result of the optimal choice of the lieutenant's competence. It is straightforward to demonstrate that any of the values $U_{XY}, U^E_{XY}, U^S_{XY}, V_{XY}, W_{XY}$ is not greater than $-T$, and is smaller than $\frac{H-\delta K}{1-(1-\delta)\beta}$, because a player may lose at most $-T$, and only once in her life, and likewise, she may not expect to get more than $H - \delta K$ each period.

Now, let us write down the equations that link these expected utilities to each other. Suppose for a moment that α_{XY}, the probability of repressions when the dictator-opponent reputation is (X, Y), and p_{XY}, the probability that the power struggle is won, which is a function of θ, are given. The utilities must then satisfy the following conditions.

$$
\begin{aligned}
U_{XY} &= \max\left(U^E_{XY}, U^S_{XY}\right) && (3)\\
U^E_{XY} &= H + (1-\delta)\,\beta\left((1-\mu)\left(H + (1-\delta)\,\beta W_{BG} - \delta K\right) + \mu W_{BG}\right) - \delta K && (4)\\
U^S_{XY} &= H + (1-\delta)\,\beta\left((1-\delta)\,W_{XY} + \delta W_{XG}\right) - \delta K && (5)\\
V_{XY} &= (1-\alpha_{XY})(1-\delta)\,\beta\left((1-\delta)\left((1-p_{YX})\,V_{XY} + p_{YX}U_{YX}\right) + \delta W_{YG}\right) && (6)\\
&\quad - (1-\alpha_{XY})\,\delta K - \alpha_{XY}T\\
W_{XY} &= \max_\theta W_{XY}(\theta) && (7)\\
&= \max_\theta \left\{(1-p(\theta))\,U_{XY} + p(\theta)\,V_{YX} - r(\theta)\,C\right\}
\end{aligned}
$$

The first equation simply says that the winner of the power struggle maximizes her expected utility when she decides whether or not to execute the loser. If the opposition is repressed, she earns a bad reputation, but her next opponent will necessarily have a good reputation, as this would be the opponent's first power struggle. Following repression, this opponent will appear in the next period with probability μ, and after one period with probability $1-\mu$. If the opposition is not repressed, the reputation of the winner does not change and she will face an opponent (if she does not die) who will be the same, unless the opponent dies of natural causes (in this case, a new opponent with a good reputation emerges). The loser, in her turn, expects to be executed with probability α_{XY}, and even if she is not, she may die of natural causes with probability δ. However, if she survives, she has a chance to regain power either through a struggle or simply because the winner peacefully dies herself. Finally, W_{XY} is a weighted average of the payoffs from winning and losing (taking into account the costs of a policy choice, of course).

In the Appendix, pages A-10-11, we show that if we fix any α_{XY} and p_{XY} in $[0,1]$, equations (3) – (7) have a unique solution $\left(U_{XY}, U_{XY}^{E}, U_{XY}^{S}, V_{XY}, W_{XY}\right)$ – 15 variables in total – which continuously depend on all parameters: $\alpha_{XY}, p_{XY}, \beta, \delta, H, C, K, T$. (See Subsection A in the Appendix, page A-2, for the list of notation.) This makes analysis of utilities if α_{XY} and p_{XY} are fixed more or less straightforward, and that is what we will start with. However, in the full game, the values α_{XY} and p_{XY} are determined endogenously rather than fixed. To form an equilibrium, they must satisfy the following conditions. First,

$$\alpha_{XY} \in \begin{cases} \{0\}, & \text{if } U_{XY}^{E} < U_{XY}^{S}; \\ [0,1], & \text{if } U_{XY}^{E} = U_{XY}^{S}; \\ \{1\}, & \text{if } U_{XY}^{E} > U_{XY}^{S}. \end{cases} \tag{8}$$

Second,

$$p_{XY} = p\left(\theta_{XY}\right), \tag{9}$$

where

$$\begin{aligned} \theta_{XY} &= \arg\max_{\theta} W_{XY}(\theta) \\ &= \arg\max_{\theta} \left(\left(1 - p(\theta)\right) U_{XY} + p(\theta) V_{YX} - r(\theta) C\right) \end{aligned}$$

(this complies with the definition of θ_{XY} above).

To proceed, it is helpful to incorporate these conditions in stages. If a set of utilities and α_{XY}'s satisfies (3) – (7) and (8) for a certain given set of p_{XY}'s, we say that if forms a dynamically consistent path. More precisely, we define it as follows.

Definition 2. *A vector of state-dependent probabilities of repression and odds of winning the power struggle* $\left(\alpha_{XY}, p_{XY}\right) \in [0,1]^6$ *is said to form a dynamically consistent path if utilities* $\left(U_{XY}, U_{XY}^{E}, U_{XY}^{S}, V_{XY}, W_{XY}\right)$, *uniquely identified by equations* (3) – (7), *satisfy conditions on* α_{XY}*'s* (8).

With this definition, an equilibrium is a strategy profile that generates dynamically consistent path for which (9) holds, because rationality of lieutenants is already incorporated in equations

(3) – (7). Analytically, it is convenient to focus, for the time being, on dynamically consistent paths, which allows us to take the probabilities of the power transition as given. We proceed by characterizing the behavior of those who kept or won power in different situations, starting with the case in which either the leader or the opposition leader already has a bad reputation.

Proposition 3. *Suppose that in a power struggle there is a politician with a good reputation and a politician with a reputation of repression.*

(i) A politician with a history of repression (B) always executes the loser with no experience of repression (G).

(ii) A politician with no past experience of repression (G) executes an opposition leader with a bad reputation (B), provided that δ, the risk of natural death is sufficiently small.

(iii) In each of these cases, the lieutenants hired have the same competence. More precisely, on any dynamically consistent path, $\theta_{BG} = \theta_{GB}$, and these values do not depend on p_{XY}'s. Furthermore, in any equilibrium, $p_{BG} = p_{GB} = p(\theta_{BG})$.

The dynamic mechanism behind this proposition is intuitive. A leader who has repressed in the past cannot undo the bad reputation. Therefore, she does not suffer any negative effects from repression, while repression results in a safe period with positive probabilities. In terms of α's, this means $\alpha_{BG} = 1$, and therefore $V_{BG} = -T$. Now, if the loser is committed to repress the winner if spared and then returned to power at some point, she has to be repressed. Naturally, the condition that the probability of exogenous death, δ, is sufficiently small, ensures that it does not make sense not to repress the loser with a bad reputation in the hope that she will die on his own. As a consequence, the lieutenants chosen in both cases will have equal competence. The reason for this is the dictator's understanding that she will not survive if she loses in either of these cases. For that reason, she is not interested in the chance of coming back to power and therefore chooses her lieutenant without taking any of p_{XY}'s into account. Furthermore, (9) implies that $p_{BG} = p_{GB}$ in any equilibrium. For simplicity, denote them by $\hat{p}$. It is also evident that W_{BG} are the same on all dynamically consistent paths and thus $U_{BG}^{E} = U_{GB}^{E} = U_{GG}^{E}$ are also the same; we denote this value by $\hat{U}^{E}$.

Characterizing Repression

Our next goal is to find whether or not a winner with a good reputation represses the loser with a good reputation. This is critical for the stability of the good (no repression) equilibrium. Technically, the question is what values α_{GG} can take in an equilibrium. First, note that U^E_{GG} is known, since it equals U^E_{BG} by (4). It is easy to see that $\alpha_{GG} = 1$ always forms a dynamically consistent path (and if $p_{GG} = p_{BG}$, it is an equilibrium). In other words, if one expects to be repressed regardless of her past actions, she opts for repression when she has a chance herself. Therefore, there always exists a 'repressive equilibrium', which is uniquely defined by the condition $U^E_{GG} > U^S_{GG}$. However, there may exist other equilibria. Consider the case $U^E_{GG} \leq U^S_{GG}$, or equivalently, $U_{GG} = U^S_{GG}$. Denote U^S_{GG} as a function of α_{GG} (holding all p_{XY}' s and $\alpha_{BG} = \alpha_{GB} = 1$ constant and replacing $U_{GG} = U^S_{GG}$) with $U^S_{GG}(\alpha_{GG})$ in (3). In the Appendix, pages A-8-10, we prove that $U^S_{GG}(\alpha_{GG})$ is a continuous strictly decreasing function of α_{GG}, and $U^S_{GG}(1) < \hat{U}^E$. Now we formulate the following proposition.

Proposition 4. *The following is true about any dynamically consistent path:*

(a) For any p_{XY}'s there always exists a unique dynamically consistent path in which $\alpha_{BG} = \alpha_{GB} = \alpha_{GG} = 1$. If p_{XY}'s are set to be equal to p^*, then it is an equilibrium, and moreover, it is the only equilibrium where all α_{XY}'s are equal to 1.

(b) If $U^S_{GG}(0) \geq \hat{U}^E$, then there is a dynamically consistent path with $\alpha_{GG} = 0$ (the 'good' consistent path), and if $U^S_{GG}(0) > \hat{U}^E$, then there also exists a mixed strategy path, which is dynamically consistent, and on which $0 < \alpha_{GG} < 1$, and $U^S_{GG} = U^E_{GG} = \hat{U}^E$. There may exist at most one equilibrium such that $0 < \alpha_{GG} < 1$.

(c) For any given power transition probabilities p_{XY}, there are good dynamically consistent paths (without repression) and good equilibria for a wider range of parameters when T is high and μ is high.

Although Proposition 4 looks technical, it is both important and intuitive. Part (a) simply states that there is always an equilibrium when every leader chooses repression after winning the power struggle. Indeed, if the current decision-maker expects to be repressed once out of power regardless of his reputation, choosing repression today does not have negative implications. Part (b) describes conditions under which there exists a no-repression equilibrium. If such an equilibrium exists, there exist “intermediate equilibria”, in which a string of no-repression periods might end with repression.

The intuition behind the comparative statics, part (c), is as follows. First, a higher μ (the lower effectiveness of repression) means that repression is less profitable, and a higher T means that gaining a bad reputation is more dangerous. Both effects cause no-repression dynamically consistent paths to exist for a wider range of other parameters.

In general, there are two basic channels through which the pay-off of the loser affects the incentives the decision-maker has. First, if the disutility of being removed from power decreases, then for the leaders that make the decision at the moment, the costs associated with repressing the opposition and gaining bad reputation as a result decreases as well. Second, the current decision maker takes into account thoughts of the next decision maker (the next successful opponent), the one who will be deciding his fate once she loses. Since the next leader also faces lower costs of repressing the opposition, the reputation becomes less valuable for the current one. The impact of the discount factor is straightforward. A decrease in β makes the absence of opponents, which is not achievable if the opposition is not repressed, more valuable.

Equilibrium Paths and Competence

Although equilibria of the game may lead to a variety of different paths, as there are random shocks that influence them, we may delineate three substantially different paths which correspond to different equilibria. In this paper, we specifically focus on the “degenerate autocracy”, which corresponds to a set of equilibria that generates a specific path. In what follows, we show that those paths that feature frequent repression are robust. Then, we demonstrate that these paths are the worst in terms of the quality of information-gathering and decision-making. (See Section E in the Appendix, pages A-18-22, for a simple exercise that simulates the equilibria paths.)

The first group of paths are ‘stable autocracies’. When a leader with no-repression reputation wins the power struggle, she does not need to repress the opposition. When he eventually loses power, she is not repressed and has the opportunity to return to power. Thus, she faces relatively low stakes in the future power struggles, which allows her to appoint competent subordinates, make good policy decisions with a higher probability, and have, as a result, a high probability of surviving the next struggle.[8] New leaders that appear because we allow for an exogenous death with a positive probability, play the same strategies. On this path, if we add a possibility of democratization, it does not result in behavioral change of the dictators prior to democratization.

Another group of stable paths are "consecutive degenerate autocracies". Every time a power struggle occurs, it is followed by repressions. Though some leaders die peacefully, this does not lead to the escape from repression trap, in which the new-coming leader organizes repressions against the former regime as she fears their return to power. For our purposes, the most interesting dynamics is the complementarity between the repressiveness of the regime and the low quality of decision-making along this group of stable paths. A vulnerable dictator represses opposition to reduce the probability of a challenge in the next period. This raises the stakes for the leader as, after the repression, the probability that she will be repressed if (when) she loses power increases. In response to the increasing stakes, the leader has to appoint more loyal, that is, less competent, subordinates, which results in a higher probability of a bad policy choice.

Without a refinement, our dynamic game has, naturally, more equilibria. The rest of stable paths are "mixed": the dictator and the opposition may swap their positions several times, or be replaced by newcomers if they die by chance, but eventually the winner of the power struggle chooses repression rather than no repression. This is followed by a sequence of "repression only" periods: a winner with a history of repression represses a loser with no history of repression, and vice versa. Still, if either dictator or opponent with a reputation of repression dies, the chain of repression may end, as now both the dictator and opposition do not have a history of repressions. Then, the story repeats itself.

[8] Authoritarian regimes, in which the losers of political struggles were able to stage a comeback – that is, regimes that follow our "good path"– are not exceptional. Of 54 leaders of Mexico in the nineteenth century, 17 have held this position more than once and 7 came back to power at least twice. General de Santa Anna, "the Napoleon of Mexico", came back at least 5 times; most of the power changes were military coups. In Chile, General Ramon Freire came back 5 times. In Venezuela, among 56 changes in leadership, elected, military, and provisional in 1830-1910, there were 14 comebacks by 10 leaders who had been leaders before. Post-1945, there were a number of examples in which politicians who have fallen from grace, were arrested, tried, jailed, or exiled, have subsequently returned to power. Poland's Władysław Gomułka, Hungary's Janos Kadar, and China's Deng Xiaoping are perhaps most prominent examples.

On these "mixed" equilibrium paths the autocracy does not "stay degenerate". It is degenerate – repressive and incompetent – from time to time, probabilistically. Very much in line with the existing anecdotal evidence (e.g., Weeks, 2012), the dictatorships become simultaneously repressive and incompetent at later, rather than earlier, stages of the dictator's political life.

Our next Proposition 5 states formally the core result about the quality of governance on the equilibrium paths. It is straightforward to observe that on any equilibrium path where dictators always repress the opposition, the competence of lieutenants is the same $\theta_{BG} = \theta_{GB} = \theta_{GG}^{E}$. The interesting case, which illustrates our "degenerate autocracy" theory, requires comparing θ_{GG}^{E} and θ_{GG}^{S} in the case where both equilibria exist. As we shall see, the quality of governance – the competence of subordinates and, consequently, the probability of a wrong policy choice – is lower on those equilibrium paths that feature more repression.

Proposition 5. *In any equilibrium, the competence of subordinates satisfies the following comparative statics results.*[9]

(a) If the power struggle features at least one politician with history of repressions, the dictator's choice of lieutenant's competence is the same regardless of the equilibrium played.

(b) If the power struggle features two politicians with no history of repressions, the dictator's choice of lieutenant's competence in the good equilibrium is (weakly) higher than the choice of lieutenant's competence in any mixed equilibrium, which is in turn (weakly) higher than the lieutenant's competence in any "consecutive degenerate autocracy" equilibrium.

(c) The probability that repression is ineffective, μ, has no effect on the competence of lieutenant in the good equilibrium. In any other equilibrium, the higher effectiveness of repression leads to less competent (and endogenously more loyal) lieutenants.

The intuition behind the comparison of government competence and, correspondingly, the probability of a wrong policy choice along different equilibrium paths was discussed above. The higher is the probability of repression, the higher are the stakes for the dictator in the struggle.

[9]The same is true for dynamically consistent paths. In Appendix, pages A-11-17, we will prove this (and use this fact to prove the Proposition 5 itself).

This forces the dictator to look for more security at the expense of spending additional resources, and the subordinates they hire are less competent and more loyal. Therefore, cruel and insecure dictators are more likely to choose poor policymakers in equilibrium.

To illustrate the different paths that we discussed above, we solve numerically for equilibria of the game and then simulate multiple instances of the game for each equilibrium type. The core of the solving algorithm is fixed-point iteration. We know that, under the given norm, the set of equilibrium conditions (3)-(7), repeatedly applied, will converge towards a fixed point, which is the solution. We incorporate (8) by using the constraints on α as initial guesses for our iterations, and (9) by using the θ that solves (7) to compute transition probabilities $p_{XY}(\theta)$ as defined in Section *Static Regime Choice*. The results of the simulation exercise are provided in the Appendix, pages A-18-22.

Robustness

There are several modeling choices that require further discussion. First, while reputation plays an important role in the mechanism underlying degenerate autocracy, our model of reputation is effectively a shortcut. Second, in our attempt to go beyond the two-state Markovian approach to modeling authoritarian dynamics, we restricted possible strategies to those that rely on the binary reputation variable. Finally, it may look like that the static model, in which the leader chooses only a single subordinate, whereas realistically there would likely be multiple subordinates, is with loss of generality. In fact, it is not.

Our choice to make "reputation" a binary variable, instead of using a game of imperfect information with a commitment type following the pioneering work of Kreps and Wilson (1982) and Milgrom and Roberts (1982), has a single goal: to simplify the algebra so as to focus on the substantive issues. Assuming the existence of a particular commitment type, for example, a committed "gentle" leader who never represses the opposition, we would get that any episode of non-repression increases the posterior probability that the dictator is such a type, which improves the odds that he is not repressed. As a result, even "normal" dictators would have an incentive to earn the reputation of being gentle. However, the resulting dynamics will be very similar to the one we study, albeit at the cost of introducing additional notation and cumbersome algebra. In this paper, we opt for simplicity.

Two-state Markov models have become a staple in studies in authoritarian dynamics, thanks to the combination of tractability and richness of potential strategic interactions.[10] For questions like ours, however, using the same approach creates a substantive problem: we do want to study the endogenous dynamics, in which changes in the previous periods lead to different choices in the subsequent ones. As a result, we opted for a game in which players' strategies depend not on whole histories but only on binary variables that summarize the acquired reputation of the winner (the new dictator) and the loser (the new opposition) of a power struggle.

Egorov and Sonin (2015) allowed the winner's strategy to depend on the total number of periods in which he, the winner, and the loser have chosen repression in the past. As a result, there are equilibria in which the probability that the winner of the power struggle who has already repressed in the past is growing monotonically for a finite number of periods. In fact, for a range of parameters, one might construct an equilibrium in which this probability strictly increases for any fixed number of periods. With fixed power-fight lottery probabilities, this is an extension of Proposition 4. However, the complexity of that model makes it difficult to study the core issue of the current paper, the dynamic relationship between repressiveness and quality of government. Unlike the current model, Egorov and Sonin (2015) is a model in which the win probabilities in a power struggle are exogenous.[11]

Another major simplification in our model is the choice of an institution that determines which information the dictator's decisions are based on. There, the leader appoints a single subordinate that gathers information for the leader to use in the power struggle. In fact, the logic naturally extends to a situation where the leader appoints a council of lieutenants, with lieutenants of potentially heterogeneous information-processing capacity. With a council instead of a single lieutenant, the added complication is that they need to coordinate their actions of

[10] Tornell and Lane (1999); Acemoglu and Robinson (2001); Bueno de Mesquita et al. (2003); Acemoglu (2003); Gallego and Pitchik (2004); Acemoglu and Robinson (2005); Jack and Lagunoff (2006); McGillivray and Smith (2006); Padró i Miquel (2007); Robinson and Torvik (2009); Svolik (2009); Herrera and Martinelli (2013); Leventoğlu (2014)

[11] Egorov and Sonin (2011) considered a static model in which the probability of the dictator losing power depended, stochastically, on both the type and actions of the opponent. The current model does not have this complication. This allows, instead, one to make the competence-loyalty model a construction block in a dynamic model, without which it is not possible to have a theory of degenerate autocracy. The intra-period part of the current model is more general than that of Egorov and Sonin (2011).

betraying the leader. This makes the "institutional" part of our model more realistic: Gehlbach and Keefer (2011) considered the Chinese Communist Party as an information gathering device, a much more complicated institution than a single lieutenant. (See Francois, Trebbi and Xiao, 2023, for a detailed investigation of the role of factions in the authoritarian politics of China.)

By appointing a council instead of a single lieutenant, the dictator enjoys two kinds of benefit. First, with a council, more information can be aggregated, especially if members' signals are independent or only partially correlated. Second, the members of the council face a coordination problem with respect to treason, one which dictators usually took advantage of. Although the latter advantage was already well understood by Machiavelli, the former is much less so.

Assume that the dictator has to hire two lieutenants of types θ_1 and θ_2.[12] We consider the following modification of our basic setup. Suppose that each agent receives the same (correct!) information about the potential reward R, but the signals about the leader's vulnerability $\widehat{s}_1$, $\widehat{s}_2 \in \{v, n\}$ are independent conditional on $s \in \{v, n\}$. (Thus, information can indeed be aggregated.) As in the baseline model, each lieutenant reports the signal that he received; they choose their actions simultaneously and independently. Let us assume that dictator's actions are $d\left(m_1 = v, m_2 = v\right) = \overline{P}$ and $d = \underline{P}$, if one of the lieutenant's reports is $m_j = n$. The total cost of safe policy is C. Again, the dictator survives if he is not vulnerable or the policy is safe. Lieutenants are rewarded or punished independently, that is, participation of one of them in a coup does not undermine the potential benefits of the other.

As before, we proceed with the backward induction. Again, we observe that if agent i receives the signal $\widehat{s}_i = n$, then i reports the signal truthfully. If $\widehat{s}_i = v$, the Bayes' formula yields

$$\mathbf{P}\left(s = v \mid \widehat{s}_i = v\right) = \frac{q\theta_i}{q\theta_i + (1-\theta_i)(1-q)}.$$

Now, the probability that the other lieutenant, $-i$, received signal $\widehat{s}_{-i} = v$ conditional on $s = v$ is $\theta_{-i.}$ Thus,

$$\mathbf{P}\left(\widehat{s}_{-i} = v, s = v \mid \widehat{s}_i = v\right) = \theta_{-i}\frac{q\theta_i}{q\theta_i + (1-\theta_i)(1-q)}.$$

Let $R_j^* = R_j^*\left(\theta_j\right)$ be the threshold such that if $R > R_j^*$, lieutenant j misinforms the dictator when

[12] Alternatively, we could consider the case where agents may have distinct types θ_1 and θ_2. However, this would at some point lead to unnecessary complications that would obscure the coordination effect we want to depict.

$\widehat{s}_j = v, j \in \{1, 2\}$. The thresholds R_i^* are solutions for the following system of equations:

$$R_i^* \frac{q\theta_i\theta_{-i}}{q\theta_i + (1-\theta_i)(1-q)} \left(1 - F(R_{-i}^*)\right) - \pi \left(1 - \frac{q\theta_i\theta_{-i}}{q\theta_i + (1-\theta_i)(1-q)} \left(1 - F(R_{-i}^*)\right)\right) = w, \quad i \in \{1, 2\}.$$

In a symmetric equilibrium, $R_1^*(\theta_1, \theta_2) = R_2^*(\theta_1, \theta_2)$. Compared to the case of one lieutenant, the multi-agent threshold $R_1^*(\theta, \theta) > R^*(\theta)$ for every θ. This is intuitive as probability that the challenger wins, conditional on the lieutenant's signal that the dictator is vulnerable, is lower in the case of two lieutenants than in the case when there is a single lieutenant. As a result, the dictator could choose lieutenants of higher quality when they form a committee. However, the main comparative statics result remains the same: when the leader has higher stakes, the equilibrium choice of the lieutenants' competence is lower.

Conclusion

Many modern dictatorships have ended up making disastrous decisions, such as Galtieri's attack on the Falklands in 1982 or Putin's invasion of Ukraine in 2022. Even when these decisions are not ultimately fatal for the regime, such as Mao's Great Leap Forward in China or Pol Pot's collectivization drive in Cambodia, they typically involve both a monumental miscalculation and an institutional environment in which subordinates have no chance to prevent the decision from being made and implemented.

In this paper, we develop a theory of degenerate autocracy, a stage in the life cycle of an authoritarian regime that is characterized by increased repressiveness and, simultaneously, a deteriorating quality of decision-making. We show that these two tendencies reinforce each other. Repression against political opponents increases the stakes for the dictator, which in turn shifts the regime's priorities further from competence to loyalty. Our theory sheds light on the governing mechanisms in repressive and inefficient authoritarian regimes.

References

Acemoglu, Daron. 2003. "Why Not a Political Coase Theorem? Social Conflict, Commitment, and Politics." *Journal of Comparative Economics* 31(4):620–652.

Acemoglu, Daron and James A Robinson. 2001. "A Theory of Political Transitions." *American Economic Review* 91(4):938–963.

Acemoglu, Daron and James A Robinson. 2005. *Economic Origins of Dictatorship and Democracy.* Cambridge University Press.

Aghion, Philippe and Jean Tirole. 1997. "Formal and real authority in organizations." *Journal of political economy* 105(1):1–29.

Badanin, Roman and Mikhail Rubin. 2025. *The Tsar in the Flesh* [Tsar Sobstvennoi Personoi]. BA Books [in Russian].

Bai, Jinhui H and Roger Lagunoff. 2011. "On the Faustian Dynamics of Policy and Political Power." *Review of Economic Studies* 78(1):17–48.

Bai, Ying and Titi Zhou. 2019. ""Mao's Last Revolution": a Dictator's Loyalty — Competence Tradeoff." *Public Choice* 180(3):469–500.

Belton, Catherine. 2021. *Putin's People: How the KGB Took Back Russia and Then Took on the West.* William Collins.

Besley, Timothy and Masayuki Kudamatsu. 2009. Making Autocracy Work. In *Institutions and Economic Performance*, ed. Elhanan Helpman. Harvard University Press pp. 452–510.

Blattman, Chris. 2022. *Why We Fight: The Roots of War and the Paths to Peace.* Penguin Publishing Group.

Bueno de Mesquita, Bruce and Alastair Smith. 2012. "Domestic explanations of international relations." *Annual Review of Political Science* 15:161–181.

Bueno de Mesquita, Bruce, Alastair Smith, Randolph Siverson and James D. Morrow. 2003. *The Logic of Political Survival.* Cambridge, MA: MIT Press.

Chehabi, Houchang E and Juan J Linz. 1998. *Sultanistic Regimes.* JHU Press.

David, V Gioe and Marina Miron. 2023. "Putin Should Have Known His Invasion Would Fail." *Foreign Policy* 24.

Dawisha, Karen. 2015. *Putin's Kleptocracy: Who Owns Russia?* New York: Simon and Schuster.

Debs, Alexandre and Hein E Goemans. 2010. "Regime type, the fate of leaders, and war." *American Political Science Review* 104(3):430–445.

Driedger, Jonas J. and Mikhail Polianskii. 2023. "Utility-based predictions of military escalation: Why experts forecasted Russia would not invade Ukraine." *Contemporary Security Policy* 44(4):544–560.

Easterly, William and Steven Pennings. 2017. "Shrinking dictators: how much economic growth can we attribute to national leaders?" *mimeo* .

Egorov, Georgy and Konstantin Sonin. 2011. "Dictators and Their Viziers: Endogenizing the Loyalty–Competence Trade-off." *Journal of the European Economic Association* 9(5):903–930.

Egorov, Georgy and Konstantin Sonin. 2015. "The Killing Game: A Theory of Non-democratic Succession." *Research in Economics* 69(3):398–411.

Egorov, Georgy, Sergei Guriev and Konstantin Sonin. 2009. "Why Resource-Poor Dictators Allow Freer Media: A Theory and Evidence from Panel Data." *American Political Science Review* pp. 645–668.

Fearon, James. 1995. "Rationalist explanations for war." *International Organization* 49(3):379–414.

Francois, Patrick, Francesco Trebbi and Kairong Xiao. 2023. "Factions in nondemocracies: Theory and evidence from the Chinese Communist Party." *Econometrica* 91(2):565–603.

Gallego, Maria and Carolyn Pitchik. 2004. "An Economic Theory of Leadership Turnover." *Journal of Public Economics* 88(12):2361–2382.

Gandhi, Jennifer and Adam Przeworski. 2006. "Cooperation, Cooptation, and Rebellion under Dictatorships." *Economics and Politics* 18(1):1–26.

Gehlbach, Scott and Philip Keefer. 2011. "Investment without Democracy: Ruling-Party Institutionalization and Credible Commitment in Autocracies." *Journal of Comparative Economics* 39(2):123–139.

Gessen, Masha. 2012. *The Man Without a Face: The Unlikely Rise of Vladimir Putin.* Riverhead Books.

Gomza, Ivan. 2023. "Roger That: Russia's Coup-Proofed Army and Its Combat Effectiveness, 2022–2023." *The Journal of Slavic Military Studies* 36(4):435–473.

Gratton, Gabriele and Barton E Lee. 2023. "Liberty, security, and accountability: The rise and fall of illiberal democracies." *Review of Economic Studies* p. forthcoming.

Harrison, Mark. 1998. "The economics of World War II: an overview." *The economics of World War II: Six great powers in international comparison* pp. 1–42.

Hassan, Mai. 2017. "The strategic shuffle: Ethnic geography, the internal security apparatus, and elections in Kenya." *American Journal of Political Science* 61(2):382–395.

Hassan, Mai, Daniel Mattingly and Elizabeth R Nugent. 2022. "Political control." *Annual Review of Political Science* 25(1):155–174.

Herrera, Helios and César Martinelli. 2013. "Oligarchy, democracy, and state capacity." *Economic Theory* 52(1):165–186.

Herrera, Helios, Massimo Morelli and Salvatore Nunnari. 2019. "A theory of power wars.".

Hollyer, James R, B Peter Rosendorff and James Raymond Vreeland. 2018. *Transparency, Democracy, and Autocracy: Economic Transparency and Political (In) Stability.* Cambridge University Press.

Jack, William and Roger Lagunoff. 2006. "Dynamic Enfranchisement." *Journal of Public Economics* 90(4-5):551–572.

Jackson, Matthew O and Massimo Morelli. 2011. The reasons for wars: an updated survey. In *The handbook on the political economy of war*. Edward Elgar Publishing.

Jia, Ruixue, Masayuki Kudamatsu and David Seim. 2015. "Political Selection in China: The Complementary Roles of Connections and Performance." *Journal of the European Economic Association* 13(4):631–668.

Jones, Benjamin F. and Benjamin A. Olken. 2005. "Do Leaders Matter? National Leadership and Growth Since World War II." *Quarterly Journal of Economics* 120(3):835–864.

Karsh, Efraim and Inari Rautsi. 2007. *Saddam Hussein: A Political Biography*. Grove Atlantic.

Kosterina, Svetlana. 2017. "Ambition, personalist regimes, and control of authoritarian leaders." *Journal of Theoretical Politics* 29(2):167–190.

Kreps, David M and Robert Wilson. 1982. "Reputation and imperfect information." *Journal of Economic Theory* 27(2):253–279.

Lagunoff, Roger. 2009. "Dynamic stability and reform of political institutions." *Games and Economic Behavior* 67(2):569–583.

Lamberova, Natalia and Konstantin Sonin. 2018. "Economic transition and the rise of alternative institutions." *Economics of Transition and Institutional Change* 26(4):615–648.

Leventoğlu, Bahar. 2014. "Social Mobility, Middle Class, and Political Transitions." *Journal of Conflict Resolution* 58(5):825–864.

Lewis, Paul H. 2002. *Guerrillas and generals: the" Dirty War" in Argentina*. Greenwood Publishing Group.

Lieven, Dominic. 2015. *The End of Tsarist Russia: The March to World War I and Revolution*. Penguin Publishing Group.

Linz, Juan. 1978. "The Breakdown of Democratic Regimes: Latin America.".

Lorentzen, Peter. 2014. "China's Strategic Censorship." *American Journal of Political Science* 58(2):402–414.

Mattingly, Daniel C. 2024. "How the Party Commands the Gun: The Foreign–Domestic Threat Dilemma in China." *American Journal of Political Science* 68(1):227–242.

McGillivray, Fiona and Alastair Smith. 2006. "Credibility in compliance and punishment: Leader specific punishments and credibility." *The Journal of Politics* 68(2):248–258.

McMahon, R Blake and Branislav L Slantchev. 2015. "The guardianship dilemma: Regime security through and from the armed forces." *American Political Science Review* 109(2):297–313.

Meng, Anne and Jack Paine. 2022. "Power sharing and authoritarian stability: How rebel regimes solve the guardianship dilemma." *American Political Science Review* 116(4):1208–1225.

Meng, Anne, Jack Paine and Robert Powell. 2022. "Authoritarian Power Sharing: Concepts, Mechanisms, and Strategies." *Annual Review of Political Science* 26.

Meng, Xin, Nancy Qian and Pierre Yared. 2015. "The Institutional Causes of China's Great Famine, 1959–1961." *Review of Economic Studies* 82(4):1568–1611.

Michaels, Eva. 2024. "Caught off guard? Evaluating how external experts in Germany warned about Russia's war on Ukraine." *Intelligence and National Security* 39(3):420–442.

Milgrom, Paul and John Roberts. 1982. "Predation, reputation, and entry deterrence." *Journal of Economic Theory* 27(2):280–312.

Myers, Steven Lee. 2015. *The new tsar: The rise and reign of Vladimir Putin*. Simon and Schuster.

North, Douglass C. 1981. *Structure and Change in Economic History*. New York: Norton.

O'Brien, Phillips Payson. 2015. *How the War Was Won: Air-Sea Power and Allied Victory in World War II*. Cambridge Military Histories Cambridge University Press.

Padró i Miquel, Gerard. 2007. "The Control of Politicians in Divided Societies: The Politics of Fear." *Review of Economic Studies* 74(4):1259–1274.

Paine, Jack. 2021. "The Dictator's Power-Sharing Dilemma: Countering Dual Outsider Threats." *American Journal of Political Science* 65(2):510–527.

Paine, Jack. 2022. "Reframing the Guardianship Dilemma: How the Military's Dual Disloyalty Options Imperil Dictators." *American Political Science Review* 116(4):1425–1442.

Paine, Jack and Scott A Tyson. 2020. *Uses and abuses of formal models in political science*. Vol. 3 SAGE Publications Ltd Thousand Oaks, CA pp. 188–202.

Powell, G. B. 2000. *Elections as instruments of democracy: Majoritarian and proportional visions*. Yale University Press.

Powell, Robert. 2013. "Monopolizing Violence and Consolidating Power." *Quarterly Journal of Economics* 128(2):807–859.

Przeworski, Adam. 2022. "Formal Models of Authoritarian Regimes: A Critique." *Perspectives on Politics* pp. 1–10.

Robinson, James A and Ragnar Torvik. 2009. "A Political Economy Theory of the Soft Budget Constraint." *European Economic Review* 53(7):786–798.

Shadmehr, Mehdi and Dan Bernhardt. 2011. "Collective Action with Uncertain Payoffs: Coordination, Public Signals, and Punishment Dilemmas." *American Political Science Review* pp. 829–851.

Shih, Victor. 2022. *Coalitions of the Weak*. Cambridge Studies in Comparative Politics Cambridge University Press.

Stoner, Kathryn. 2022. "The War in Ukraine: How Putin's War in Ukraine Has Ruined Russia." *Journal of Democracy* 33(3):38–44.

Svolik, Milan W. 2009. "Power Sharing and Leadership Dynamics in Authoritarian Regimes." *American Journal of Political Science* 53(2):477–494.

Svolik, Milan W. 2012. *The Politics of Authoritarian Rule*. Cambridge University Press.

Tornell, Aaron and Philip R Lane. 1999. “The Voracity Effect.” *American Economic Review* 89(1):22–46.

Tullock, Gordon. 1987. *Autocracy*. Springer.

Tyson, Scott A. 2018. “The Agency Problem Underlying Repression.” *The Journal of Politics* 80(4):1297–1310.

Tyson, Scott and Alastair Smith. 2018. “Dual-Layered Coordination and Political Instability: Repression, Co-optation, and the Role of Information.” *Journal of Politics* 80(1):44–58.

Weeks, Jessica. 2014. *Dictators at war and peace*. Cornell University Press.

Weeks, Jessica L. 2012. “Strongmen and straw men: Authoritarian regimes and the initiation of international conflict.” *American Political Science Review* 106(2):326–347.

Yaffa, Joshua. 2021. *Between Two Fires: Truth, Ambition, and Compromise in Putin’s Russia*. Crown.

Zakharov, Alexei V. 2016. “The Loyalty-Competence Trade-off in Dictatorships and outside Options for Subordinates.” *Journal of Politics* 78(2):457–466.