Do they know something we don't? Diffusion of repression in authoritarian regimes

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Abstract:

The use of repressive strategies by authoritarian regimes received a great deal of attention in the literature, but most explanations treat repression as the product of domestic events and factors. However, the similarity in repressive actions during the Arab Spring or the intense collaboration in dissident disappearances between the military regimes of Latin America indicate a transnational dimension of state repression and authoritarian interdependence that has gone largely understudied. The article develops a theory of diffusion of repression between autocracies between institutionally and experientially similar autocracies. It proposes that the high costs of repression and its uncertain effect on dissent determines autocracies to adjust their levels of repression based on information and knowledge obtained from their peers. Autocracies' own experience with repression can offer sub-optimal and incomplete information. Repression techniques and methods from other autocracies augment the decision making regarding optimal levels of repression for political survival. Then, autocracies adjust their levels of repression based on observed levels of repression in their institutional and experiential peers. The results indicate that authoritarian regimes emulate and learn from regimes with which they share similar institutions. Surprisingly, regimes with similar dissent experience do not emulate and learn from each other. The results also indicate that regional conflict does not affect autocracies' levels of repression.

Keywords: repression, diffusion, interdependence, autocracy, institutions.

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Introduction

Operation Condor was a secret intelligence network created by the military regimes of Argentina, Chile, Uruguay, Paraguay, Bolivia, Brazil, and joined later by Ecuador and Peru, with the aim to hunt down and eliminate leftists and dissidents that could oppose the right-wing military bureaucratic states. They cooperated in sharing intelligence and methods of torture against political opponents. Starting with the 1960s, intelligence officers from other Condor countries travelled to Brazil for training in interrogation techniques and methods of repression (McSherry, 2002). Similarly, interior ministers of the Arab League met regularly since the early 1980s, under the auspices of the Arab Interior Ministers Council, to innovate and share new technologies of repression (Yom, 2016). These examples provide some indication there is a transnational dimension to authoritarian repression. The repressive nature of authoritarian regimes has received a lot of attention (Davenport, 2007a; Svolik, 2012), but its transnational dimension[1] has gone largely understudied (Mattes and Rodríguez, 2014; Soest 2015). Then, this article examines how domestic factors create transnational linkages between autocracies and how they drive diffusion of violent repression between autocracies with similar structural characteristics (i.e. institutions) and challenges (i.e. dissent).

The empirical literature on state repression has extensively examined demographic, economic, social, political, and regime type factors that explain why, how, and when states use terror against their own citizens (Davenport, 2007b; Abouharb & Cingranelli, 2007; Nordås & Davenport, 2013; Hill & Jones, 2014; Sullivan, 2017; Rivera, 2017). Similarly, the literature on authoritarian politics investigates how autocracies survive through a combination of repression and co-optation (Escribà-Folch, 2013; Frantz & Kendall-Taylor, 2014; Gandhi, 2008; Svolik,

[1] This is used interchangeably with interdependence, transnational linkages or dependence. It refers to the idea that repression in one autocracy is influenced by levels of repression in other autocracies.

2012). Their (implicit) assumption is that state repression is primarily the product of domestic events and factors. While they offer compelling explanations of state repression, they have not explicitly discussed the (tacit) assumption of unit independence, mostly overlooked its spatial context and how domestic factors can be embedded in transnational linkages that impact autocracies' domestic repression. This is problematic for our understanding of state repression because '*ignoring or inadequately modeling interdependence processes leads analysts to exaggerate the importance of common shocks, privileging contextual, exogenous-external, unit-level, or domestic-factor accounts*' (Franzese & Hays 2008: 752). Furthermore, incorporating insights about the effect of transnational linkages on state repression offers a more nuanced and comprehensive understanding of the inputs and outputs of repression in authoritarian regimes.

The article elaborates theoretically on the transnational dimension of repression. It proposes that an autocracy's level of repression is influenced by other autocracies' levels of repression. I argue that autocracies adjust their levels of repression based on observed levels of repression in autocracies with which they share similar strategic objectives: survive in office (Bueno de Mesquita et al., 2003). The uncertain effect of repression on dissent leads autocracies to move beyond their own experience with dissent and repression, and update their knowledge about repressive tactics from outside sources (Lichbach, 1987; Moore, 1998, 2000; Davenport, 2007b). Autocracies use cognitive shortcuts (heuristics) to identify the most relevant sources of information and knowledge on repressive strategies. Institutional and experiential similarity serve as heuristics that provide satisfying, proximate models of repression (Neumayer, Plümper & Epifanio, 2014; Odinius & Kuntz, 2015), which in turn facilitate the diffusion of repression between authoritarian regimes.

I test the theoretical expectations regarding diffusion of repression between autocracies in a time-series cross-sectional research design that includes data on state repression from the Varieties of Democracy (V-Dem) Project (Coppedge et al., 2016) with a Spatial Ordinary Least Squares (S-OLS) model that includes single and multiple spatial lags of repression (Franzese & Hays, 2007, 2008; Hays, Kachi & Franzese, 2010). The analysis suggests that repression diffuses between institutionally similar regimes, but not between regimes that face similar dissent. Furthermore, the results also indicate that the transnational dependence in state repression is driven by spill over in outcome (e.g. repression), not covariates (e.g. conflict). These results are robust to alternative explanations and model specifications, alternative measures of the dependent variable, and estimation strategy.

These results have several implications for our understanding of state repression and authoritarian politics (Carey, 2010; Frantz & Kendall-Taylor, 2014; Svolik, 2012). With respect to state repression, this article shows that there is a transnational dimension that drives domestic levels of repression in authoritarian regimes. With respect to diffusion processes in conflict, I show that there is a transnational dimension of regimes' strategies to deal with dissent (Bormann & Hammond, 2016; Buhaug & Gleditsch, 2008; Salehyan, 2007; Salehyan & Gleditsch, 2006). Finally, in relation to international dimensions of authoritarian rule, this is the first study that goes beyond comparative case studies to provide systematic evidence of diffusion of repression between authoritarian regimes (Bader, 2015; Odinius & Kuntz, 2015; Tolstrup, 2015; Way, 2015).

Repression and political order

Repression is one of the primary tools that autocrats use to enforce political order, undermine the opposition and survive in office (Bueno de Mesquita et al., 2003; Escribà-Folch, 2013; Gandhi, 2008; Svolik, 2012; Frantz & Kendall-Taylor, 2014; Rivera, 2017 Sullivan, 2017). Repression is

the actual or threatened use of physical sanctions against individuals or organizations, within the territory of the state, with the purpose of imposing a cost on the target and deterring specific activities or beliefs perceived to be challenging or subversive to the government (Goldstein, 1978). Moreover, violent repression is the ultimate method of arbitration for political conflicts in autocracies (Svolik 2012)[2], as when challenges to the status quo exist, regimes employs repression to counter or eliminate the threat (Davenport 2007a).[3]

The logic of using repression to undermine and eliminate dissent has been explained from a strategic and cost-benefit perspective. The former contends that repression is used with the objective of setting the limits within which citizens can act, to control or eliminate challenges (real or imagined) to the regime's social and political order, and facilitate regime movement in a certain direction (Davenport, 2007b). Moreover, repression allows regimes to extract relevant information from their opponents, while also trying to dissuade, counter and suppress activities that challenge and undermine state power (Moore, 1998; Rivera, 2017). From a cost-benefit perspective, leaders carefully weigh the costs and benefits repression, its alternatives, and likelihood to destroy the opposition. Simply put, if the benefits exceed the costs, alternatives are not favourable, and there is a high probability of success, then increased repression is expected. However, if the costs exceed the benefits, there are alternatives and the probability of success is low, then very little or no repression is expected (Moore, 2000; Shellman, 2006). These explanations about the use of repression assume that repression is primarily driven by domestic factors and processes. Clearly, scholars of state repression have not assumed regimes to be independent units not affected by decisions of other regimes. However, not much of the work on

[2] From here onwards, the term repression is used to refer strictly to violent repression.
[3] Empirical literature on repression shows there is almost a "natural" law like consistency of responding with repression to threats. This was labelled the "Law of Coercive Responsiveness" (see Davenport 2007a for a comprehensive review).

state repression elaborates theoretically on the assumption of unit interdependence, nor tests its empirical implications (Bell, Clay & Murdie, 2012; Danneman & Ritter, 2014; Elkins & Simmons, 2005; Franzese & Hays, 2007). There are two reasons why we should unpack unit interdependence when examining state repression.

First, there is evidence that violence, in the form of protests, riots or civil war, tends to permeate national boundaries and to diffuse between countries (Salehyan, 2007; Salehyan & Gleditsch, 2006; Buhaug & Gleditsch, 2008; Bormann & Hammond, 2016). Danneman and Ritter (2014) find that states increase repression early to prevent externalities from neighbouring civil wars. Similarly, Bell, Clay & Murdie (2012) find that presence of human rights organizations in countries' neighbourhood improves country's human rights performance. These studies focus on states adjusting their levels of repression as a reaction to events and actors in neighbouring countries, not because of changes in levels of repression[4]. More generally, there is an extensive literature on policy diffusion that shows that political actors, governments or non-state groups, follow each other's decisions and actions (Gilardi, 2010; Bamert, Gilardi & Wasserfallen 2015; Böhmelt, Ruggeri & Pilster, 2017; Braithwaite, Maves & Kucik, 2015; Neumayer, Plümper & Epifanio, 2014). For example, Jordan inspired its constitutional reforms from the politically similar, geographically distant, monarchy of Morocco to prevent experiencing mass protests during the Arab Spring (Bank & Edel, 2015). Then, if dissent and policy choices diffuse between countries, it seems quite unrealistic that government strategies would not. Besides comparative case studies (Bader, 2015; Lynch, 2014; Odinius & Kuntz, 2015; Soest, 2015; Tolstrup, 2015; Way, 2015), we still lack any systematic examination of the drivers and sources that facilitate diffusion of repression between autocracies.

[4] See the appendix for a more detailed discussion on the differences.

Second, repression is costly because it involves allocation of resources, sacrifice of human life and (potential) political backlash. Additionally, we cannot reasonably expect the government to have the capacity to repress all forms of mobilization and challenges (Wintrobe, 2000; Sullivan, 2017). Moreover, repression can increase dissent by undermining the legitimacy of the regime and exacerbating population grievances (Lichbach, 1987; Moore, 1998). If regimes use repression pre-emptively, in the expectance of conflict, they alienate their citizens and can transform their latent grievances into active antagonism (Thoms & Ron, 2007). Hence, an erratic use of repression by governments can defeat its purpose by increasing dissent rather than diminishing it. Then, regimes are forced to understand better the conditions under which, what are the targets and to what extent increases in state repression can diminish dissent. One commonly used avenue for this is regimes' previous experiences with repression. The issue with this approach is that government agencies seek to perpetuate this behaviour in order to justify their existence rather than learn from it and adapt accordingly (Carey, 2006; Davenport, 1996; Davis & Ward, 1990). During the Arab Spring, the Bahraini government used repression techniques such as house raids that were common during the so-called Intifada in the 1990s, yet the strategic environment of the two uprisings was largely different (Ulrichsen, 2013). As such, reliance on previous experiences with repression can lead to situations when autocracies rely on outdated or sub-optimal methods of repression.

Diffusion of repression

Considering that repression can be socially and politically costly, and (possibly) ineffective, what are the sources that inform and help autocrats update their knowledge and adjust their repressive tactics? I argue that information obtained from institutionally and experientially similar autocracies serves as an input into the decision-making that autocrats make about domestic levels of repression. Autocrats use repression strategically to set limits for social and political

participation, to eliminate challengers and force society in the direction (ideological, economic, social, etc.) envisioned by the leader. Other autocracies experience with repression and dissent informs autocracies use of repression alongside domestic factors and their own past experience with repression (Böhmelt, Ruggeri & Pilster, 2017; Neumayer, Plümper & Epifanio, 2014).

Diffusion has been conceptualized as interdependence among units (i.e. regimes, countries, etc.), where the adoption of a practice by one unit affects the probability that another unit will adopt the same practice (Elkins & Simmons, 2005). In this case, levels of repression in one (or several) authoritarian regimes influences domestic levels of repression in other authoritarian regime(s) (Gilardi, 2016). In other words, autocracies observed their autocratic peers in order to obtain additional information about repressive tactics and adjust their domestic levels according to the information they gleaned from their peers. In its determination to preserve one party rule, the Communist Party of China examined the causes of failure of the Soviet Union, the workings of other one party regimes and the success of one-party rule in Singapore (Ortmann and Thompson 2014; Shambaugh 2008). The Syrian regime's infiltration and obstruction of mass demonstrations shows striking similarities with the tactics used by the Iranian regimes to disrupt the Green movement in 2009. Furthermore, the Syrian's regime attempt to court Christian community leaders and make implicit deals with Kurdish groups resembles the Iranian's regime strategy to take advantage of the disconnect between minority groups from the provinces and the Green movement.

Repression diffuses between regimes by observing their peers' actions and/or by cooperating with them. For instance, the regime of Bashar al-Assad formed a special committee during the Arab spring, whose aim was '*to examine the possibility of protest spreading to Syria, and how to avert or respond to them*' (Abbas, 2011: 1). The Syrian President hinted at learning by blaming the failures of other regimes on their inability to upgrade and adapt with the changes in society,

both as state and institutions (Heydemann & Leenders, 2014). Conversely, cooperation between authoritarian regimes takes several forms, ranging from intelligence and data sharing to active involvement in suppressing popular protests in other autocracies. For example, during Operation Condor, the intelligence services of the participating countries would organize cross-border "disappearances" operations of dissidents and leftists or would actively share intelligence over a specially established telecom system (McSherry, 2002). During the Arab Spring, Jordan provided advice and expertise to Kuwait on improving policing methods, and increased coordination and consultation with Bahrain on security and policing issues. Also, the head of the Revolutionary Guards of Iran admitted that his security forces were giving intellectual and advisory help, and exchanging experiences with the forces of the Syrian regime (Heydemann & Leenders, 2014).

The main issue with selecting who to observe and cooperate with is that regimes' ability to interact, observe, collect and process information is bounded by their own capacity. Then, regimes need a reference group to compare their circumstances, preferences and policies (Kahneman, Slovic, & Tversky, 1982). Similarity in structural characteristics (e.g. institutions) and challenges (e.g. dissent) serve as a cognitive shortcut (heuristic) to identify the reference group and to make sense of complicated policy choices in an uncertain environment. In their decision on how to adjust domestic levels of repression, autocracies rely on information about policies of similar regimes as it '*is one of the simplest and most effective cognitive heuristics in the calculation of utilities*' (Elkins & Simmons 2005: 45). Then, similarity in institutions and dissent serve as heuristics that provide autocracies immediate and proximate models of repression (Neumayer, Plümper, & Epifanio, 2014).

Institutional and experiential diffusion of repression

Structural characteristics refer to the use of political institutions (political parties and legislature) to co-opt the opposition (Gandhi 2008; Svolik 2012). The logic of why autocracies adjust repression levels based on information from institutionally similar regimes is the following: institutionalization as a co-optation mechanism arises in an autocracy as a best response to potential for conflict and violence between the regime and opposition (Gandhi 2008). More simply, autocracies use legislatures and political parties to offer concession to an opposition that cannot be destroyed through repression. Institutions help autocracies differentiate better between supporters and opponents, and facilitate more selective repression (Svolik, 2012; Frantz & Kendall-Taylor, 2014). Then, institutionally similar regimes face similar structural weaknesses towards the opposition. Svolik (2012) finds that autocrats with a legislature and a political party are less likely to be ousted from office via an uprising or a coup. Similarly, Ulfelder (2005) finds that single-party regimes are more likely to breakdown due to strikes, but are largely unaffected by riots.

Autocracies screen institutionally similar regimes for more information and knowledge regarding repression as a tool for authoritarian survival (Escribà-Folch, 2013). Research on alliance formation and treaty ratification shows that regimes with similar institutions are more likely to form alliances and cooperate internationally due to shared policy preferences (Downs, Rocke, and Barsoom 1996; Koremenos, Lipson, and Snidal 2001; Leeds 1999). Then, similar institutions serve as signalling device of shared policy objectives: (in)ability to control the opposition and mobilization vulnerabilities (Ulfelder 2005). Repression is costly since it requires resources to produce repressive legislation, to publicize it, to police the obedience and punish offenders (Wintrobe 2000). An example is the civil war that ensued in Algeria in 1991 following

the closing of the legislature by the military after the Islamic Salvation Front was poised to win most seats. Conversely, adjusting repression levels based on information obtained from regimes with similar structural characteristics is more straightforward and does not require massive changes in policies or institutions.

For example, Syria, while geographically distant from Libya, but sharing a history of divided societies with a minority ruling coalition (Bank & Edel, 2015), paid close attention to Gaddafi's tactics. The Syrian regime feared a similar fate to the Libyan regime since their political and institutional environment was very similar. More precisely, the Syrian regime wanted to avoid a Benghazi like scenarios from materializing on their territory. To this end, the Syrian army responded swiftly and disproportionate when a significant force of military defectors tried to defend residents of the small city called Rastan, not far from the Lebanese border. The rationale behind this was to prevent this group of defectors from consolidating their independence and lead to international intervention (Heydemann & Leenders, 2014). Similarly, the monarchies of the Gulf region engaged in extensive collaboration, exchange of information and resources to repress any mobilization against their regimes because they feared that the fall of a monarchy would lead to a domino effect (Yom, 2016). As a result, the hypothesis regarding the diffusion of repression between institutionally similar regimes follows:

Hypothesis 1: Autocracies' level of repression is positively influence by levels of repression from institutionally similar regimes.

The main objective of institutional co-optation is to move contentious behaviour from the streets within institutions. These provide a more controlled bargaining space between the dictator, elites and the groups they represent (Gandhi, 2008; Svolik, 2012). Because conflict is an inherent feature of authoritarian politics (Fjelde, 2010; Hegre et al., 2001), autocrats need to be well

prepared to deal with outward dissent. Shared experience with dissent leads to the diffusion of repression between regimes.

Autocracies experiencing dissent share similar policy objectives: defeat the insurgency and survive in office. This increases the sharing of information, skills and resource on how to deal with dissent. Furthermore, manifestations of dissent change the perceived benefits of repression and co-optation because their pre-dissent combination was not successful in preventing dissent. The challenge for these regimes is to figure out what levels of repression can destroy dissent, while ensuring regime survival. Increases in repression can antagonize regime supporters, radicalize moderates and increase participation in dissent against the regimes. For example, Venezuela's increased violence against the students protesting the Maduro regime increased participation in protests from all sectors of society (Popovic & Joksic, 2014).

In the case of outward dissent, the regime faces a more dynamic environment in which it needs to make decisions quickly and adjust repression levels to destroy dissent. Institutional concessions are more static and they work in times of relative peace, but are no longer efficient during times of upheaval (Maves & Braithwaite, 2013). For example, when the protests erupted in Egypt during the Arab Spring, Hosni Mubarak vowed to stand down at the next elections, but he would stay in power until then to oversee a stable transition. The problem with political concessions is that they require time to be implemented, while repression is a more instant response. Furthermore, protesters are unwilling to award any more time to autocrats once they've taken their grievances into the streets. Then, autocracies scout their external environment for models of repression that could provide them with information regarding on how to deal with dissent more efficiently. Regimes that face similar dissent provide this type of information which

leads the observing regime to adjust its levels of repression based on the experience of its dissent peers. Then, it follows that:

Hypothesis 2: Autocracies' level of repression is positively influenced by levels of repression from regimes that experience similar dissent.

Research design

I use a time-series cross-sectional research design with time coverage between 1951 and 2008 to test the hypotheses regarding diffusion of repression between institutional and experiential autocratic peers. The analysis focuses on a global sample of 102 authoritarian regimes with country-year as unit of analysis. Authoritarian regimes are defined as a set of informal and formal rules that determine the interests that are represented in the authoritarian leadership group and whether these constrain the dictator. These interests influence the dictator's policy choices, responses to opposition challenges, how well it deals with challenges and how it collapses (Geddes, Wright & Frantz, 2014).

Dependent variable

Repression is measured using data from the Varieties of Democracies project (V-Dem) (Coppedge et al., 2016). In this context, repression is understood as violations of physical integrity rights by the government (i.e. political killings and torture). Torture is conceptualized as the purposeful infliction of extreme physical or mental pain, with the aim to extract information or intimidate victims, who are in a state of incarceration. Political killings are killings by state agents without due process of law with the purpose of eliminating political opponents and as a result of deliberate use of force. Both variables measure the level of respect for these physical integrity rights (torture and political killings):

(0) Not respected by public authorities. Torture or political killings are practised systematically by the government.

(1) Weakly respected. Torture and political killings are frequently used. These are not incited by political leaders, but they do not actively oppose them nor try to prevent them.

(2) Somewhat. Torture and political killings are occasionally practised, but not approved by approved by top leaders.

(3) Mostly respected by public authorities. Torture and political killings are practised only in a few isolated cases, but are not incited nor approved by top leaders of government.

(4) Fully respected by authorities. Torture and political killings are non-existing.

The dependent variable is a physical integrity index formed by point estimates from a Bayesian factor analysis model including the two ordinal indicators for torture and political killings[5]. It ranges between 0 and 1 so that lower values indicate less respect physical integrity rights (more repression) and higher values represent more respect for these rights (less repression). The value of the index has been subtracted from 1 and multiplied by 100 so that higher values of the index correspond to higher levels of repression, and vice versa[6]. There are several advantages of using repression data from V-Dem. First, being a continuous measure allows us to estimate a Spatial OLS model that yields consistent and unbiased estimates under simple theoretical assumption of the data generating process (see Anselin 1988; Elhorst 2014). Second, its spatio-temporal coverage is broader compared to the Political Terror Scale or CIRI Human Rights Dataset

[5] This measure is provided by V-Dem. More importantly, the empirical analysis is focused on explaining the diffusion of the violent repression types measured by the dependent variable.

[6] This facilitates the interpretation of the coefficients.

(Cingranelli & Richards 2010; Wood & Gibney 2010). Third, the data is coded by country experts and an Item Response Theory Bayesian model is used to estimate the value of the latent measure for repression (Coppedge et al., 2016). This circumvents the problem of changing standards of accountability for human rights abuses present in CIRI and PTS (Fariss, 2014)[7].

Independent variable: Repression spatial lags

Two types of measures are used to capture transnational linkages between autocracies. The linkages between regimes are captured with a connectivity matrix W given by a NT × NT matrix (with T N × N sub-matrices along the block diagonal) with the element $w_{i,j}$ capturing the relative connectivity of regime j to regime i. The spatial lag represents a weighted average of all other observations of the lagged dependent variable[8] (excluding the country under observation) with each weight specified by $w_{i,j}$. More importantly, using a temporally lagged spatial lag alleviates endogeneity, in turn leading to a more conservative estimate of the coefficient and a more stringent test for the hypotheses (Franzese & Hays, 2007).

Each connectivity matrix is row standardized so that the estimated values of ρ reflect the average influence of other states (excluding the regime under study)[9]. Row standardization ensures that the spatial lag has the same metric as the dependent variable and its coefficient is directly interpretable as strength of interdependence (Franzese & Hays, 2008; Plümper & Neumayer, 2010). The theoretical assumption behind row-standardization is that the effect of other regimes

[7] See the online appendix for the models with Fariss' (2014) latent measure of repression as a robustness check and a comparison of the models with all repression measures as dependent variables (V-Dem, Fariss, CIRI and PTS).

[8] The decision to use a temporally lagged spatial lag rest on the assumption that regimes require time to feedback the information they observe in their peers and to react accordingly. Also, the spatial lag is temporally lagged to avoid simultaneity issues in the spatial OLS model. The models from the main text of the article are also estimated with spatial maximum (S-ML) models that do not need a temporally lagged dependent variable. In the S-ML models, the simultaneity bias inherent to spatial models is being addressed directly by the model (Franzese & Hays, 2007).

[9] All the interpretation of the findings in the article refer to the diffusion of the repression strategies captured by the latent measurement (torture and political killings).

becomes proportionally smaller the higher the number of countries one is connected with (Plümper & Neumayer, 2010). In other words, the observing regime has a limited number of resources to gather information. Then, the ability to gather more information from each regime is reduced by the number of regimes to which the observing regime is connected with.

The first linkage between authoritarian regimes is captured by institutional similarity. The institutional structure of authoritarian regimes is based on the institutional cooptation measure proposed by Frantz & Kendall-Taylor (2014) with data on political institutions from Cheibub, Gandhi & Vreeland (2010) dataset[10]. The variable measuring the status of the legislature (*closed*) takes a value of 0 if the legislature is closed, 1 if the legislature is appointed and 2 if it is elected. Similarly, the variable measuring the status of political parties (*defacto2*) takes a value of 0 if all political parties are banned, 1 if the regime relies on a single party or a regime united front of parties, and 2 if multiple political parties exist outside the regime's influence. From these variables, an institutional cooptation variable is generated which takes a value of 1 if the legislature is closed and political parties are banned, 2 if the legislature is closed and there are one or more political parties or if legislature is open, but political parties are banned, 3 if the legislature is open and there is one political party/regime front, and 4 if the legislature is open and multiple political parties exist. Finally, states in a dyad receive a value of 1 if they have the same institutional or cooptation level, and are considered institutionally peers/similar. Otherwise, the dyad receives a score of 0 and the two countries are not connected by institutional similarity.

The second linkage between authoritarian regimes is captured via experience with outward dissent. It is defined as a contested incompatibility over government and/or territory where the use

[10] This measure of regime similarity is preferred as it allows comparison across the same conceptual dimensions. In the appendix you can find a discussion and robustness checks using similarity in regime type as proposed by Geddes et al. (2014) (see also Svolik 2012 and Wilson 2014).

of armed forces between two parties, of which at least one is the government, resulted in more than 25 battle related deaths for that calendar year (Gleditsch et al., 2002). The variable capturing the type of civil conflict receives a value of 0 if there is no civil conflict, 1 if there is an ongoing armed incompatibility over government, 2 if it is over territory and 3 if a regime faces both types of armed incompatibilities. States in a dyad receive a score of 1 if they experience same type of ongoing armed incompatibility and are considered experiential peers, and 0 otherwise.

Model estimation

The hypotheses are tested with the use of spatial temporal autoregressive models or "spatial lag models" (Franzese & Hays 2007; 2008). Estimating the effect of spatial dependence or policy diffusion can be challenging because there is a feed-back loop in which the observed policy (i.e. repression) is an output for the observed unit, but an input for other units that influence directly the output of the observed unit. More simply, there is a simultaneity problem that needs to be addressed directly by the estimation model. Under certain assumptions, the use of a temporally lagged spatial lag in a spatial ordinary least squares model (S-OLS) circumvents this problem[11] (Ward & Gleditsch, 2008). Then, the proposed causal mechanism of the spatial dependence of repression is tested with an S-OLS model that takes the following form:

$$y_t = \phi y_{t-1} + \beta X_t + \rho W y_{t-1} + \varepsilon,$$

where y_t is the dependent variable, y_{t-1} is the temporally lagged variable, X_t are the set of control variables and the constant, ε is the error term, and Wy_{t-1} is the spatial lag with the spatial coefficient ρ capturing the strength of interdependence through the connectivity matrix. Furthermore, to rule

[11] The models from the main text of the article are also estimated with the use of spatial maximum likelihood models (S-ML) that address the problem of simultaneity head on (Franzese & Hays 2007; 2008). The core findings are robust to this type of model. Moreover, the temporal lag of the spatial lag is based on the intuition that regimes require time to collect the information about repression and to process it.

out the possibility that increases in repression are due to spatial clustering, the model includes a set of control variables that capture exogenous-external conditions (or common shocks) and spatially correlated unit factors (Franzese & Hays 2007; 2008). The temporally lagged dependent variable aims to account for temporal dependence in the data, while the country fixed effects account for path dependence and cross-sectional heterogeneity. Similarly, year fixed effects account for temporal shocks common to all states in a given year (e.g. collapse of the Soviet Union in 1991) (Ward & Cao, 2012). Furthermore, the role of these methodological fixes and the inclusion of a set of theoretically informed control variables ensure that the diffusion effect we observe is not due to clustering of state characteristics (Buhaug & Gleditsch, 2008).

Control variables

There are two challenges when estimating spatial models. First, the so-called "Galton's problem" requires us to correctly specify the model so that we can distinguish between the variation explained by unit interdependence ("spatial lag") and by domestic, exogenous-external, and/or context-conditional factors (Franzese & Hays, 2008). Failure to properly estimate these effects would lead to either over estimating the importance of common shocks and domestic factors/context factors; or, it leads to overestimating the importance of interdependence at the expense of common shocks. Second, there is "reverse Galton's problem" as the observed spatial clustering of repression are "*due to a corresponding distribution of relevant state characteristics… that may be both spatially clustered and potentially related*" to repression (Buhaug & Gleditsch, 2008: 216). More simply, it means that we need to account for unit specific characteristics that explain variation in repression, besides the fixes that eliminate temporal and spatial dynamics, and unit heterogeneity.

Population size from Gleditsch (2002) is included as more populous have been found to be more repressive because of their higher potential for collective mobilization (Mitchell & McCormick, 1988). The size of GDP/capita is accounted for because poorer countries will tend to use repression as an alternative to the provision of public goods (Bueno de Mesquita et al., 2003)[12]. The model includes a binary variable to account for the incidence of civil conflict in a country-year (Gleditsch et al., 2002) to account for the possibility that increased levels of repression are due to dissent (Hill & Jones, 2014) Furthermore, a variable capturing the percentage of countries experiencing a civil war within 950 km of the regime under observation is included to account for the possibility that regime repress pre-emptively to avoid the conflict spilling over (Buhaug & Gleditsch, 2008; Danneman & Ritter, 2014). Next, the co-optation level of the regime is included because more institutionalized regimes are better equipped to use repression discriminately (Frantz & Kendall-Taylor, 2014). Finally, a dummy variable is included to account for the effect of the Cold War on the ability of countries to get training and resources as a part of the proxy war between the US and Soviet Union.

Empirical results

Table 1 summarizes the spatial ordinary least squares (S-OLS) models used to test the theoretical expectations regarding diffusion of violent repression between authoritarian regimes. Model 1 and 2 include each of the spatial lags for institutional and experiential similar regimes, while Model 3 includes both spatial lags. The coefficients of the spatial lags can be interpreted directly for S-OLS models because of the continuous measurement of the dependent variable. However, there are several caveats to the interpretation of these spatial models. First, the

[12] GDP/per capita is measured in real 1996 dollars, and both GDP/capita and population size were logged due to their skewed distribution. Then, their unit averages were included in the model because modelling these slow-moving variables at state-year level might induce substantial collinearity (Danneman & Ritter, 2014).

introduction of the lagged dependent variable in the model determines the effect estimates to reflect only the short-term effects (the effect of the control variables or spatial lag in the current year) (Ward & Gleditsch, 2008). The long-term effects of the spatial lag were estimated using the formula of the coefficient of the temporally lagged dependent variable proposed by Plümper, Troeger, & Manow (2005: 336):

$$\sum_{t=1}^{T}(\rho \sum_{j=1} w_{ij} y_{jt-1})\beta_0^{T-t}$$

where β_0 is the coefficient of the lagged dependent variable, T is the number of periods with t denoting one-time period, and *i* and *j* representing the units (authoritarian regimes in a dyad). Both the short and long-term effects of the spatial lag are summarized in the Figure 1 and Table 2, and discussed in more detail below. Second, the interpretation of the coefficients in a model with spatiotemporal interdependence is a bit more complex because the coefficients of the control variables represent only the pre-dynamic impulses from those variables to the outcome (Ward & Gleditsch, 2008; Hays, Kachi & Franzese, 2010). In other words, the coefficients of the control variables indicate how these affect the outcome for one unit, but do not provide any indication of how it affects the actual diffusion between units[13].

The discussion of the results starts with interpreting the coefficients of the control variables which are consistent and robust across models. First, the coefficient of the lagged dependent variable indicates that previous reliance on repression increase the likelihood of regimes using repression in the future. This finding confirms previous arguments that once momentum gather around repressive policies, it is hard to disrupt them, and government agencies perpetuate this

[13] We would need to calculate the spatiotemporal multipliers to make inferences about the effect of the covariates on the diffusion of repression. These spatiotemporal multipliers are not estimated given the focus of the article on the effect of the spatial lags on domestic levels of repression.

behavior to legitimize and motivate their existence (Davis & Ward, 1990; Davenport, 2007b). Second, the incidence of civil war indicates higher levels of state repression as states react by force to outward dissent against the regime. Moreover, conflict in neighboring countries does not seem to increase domestic levels of repression, showing that autocrats do not repress pre-emptively to avoid spillovers. This finding is contrary to the findings of Danneman & Ritter (2014)[14], yet it could be explained by the fact that autocrats are more concerned about the challenges from within their ruling coalition than of popular protests (Svolik, 2012). Contrary to the findings of Frantz & Kendall-Taylor (2014), the coefficient of cooptation indicates that cooptation reduces significantly the use of state repression[15]. Finally, the coefficient for population size is positive and statistically significant size while the coefficient GDP/capita is negative and statistically significant which is in harmony with previous findings (Mitchell & McCormick, 1988).

The positive and statistical significant ρ coefficient ($Wy^{\text{institutional similarity}}$) of the spatial lag from Model 1 indicates that repression diffuses between regimes with similar institutions. This finding offers support to the argument that autocracies learn and emulate from regimes with similar structural characteristics. Contrary to the theoretical expectations, the ρ coefficient ($Wy^{\text{experiential similarity}}$) of the spatial lag from Model 2 is negative, but statistically insignificant and indicates that repression does not diffuse between experientially authoritarian regimes[16]. When including both spatial lags in the S-OLS model (Table 1, Model 3) we can observe that the coefficient of the

[14] In the online appendix I estimate a S-OLS model using CIRI as dependent variable (similar to Danneman & Ritter 2014). The spatial lag of neighbouring conflict become statistically significant and all the results reported in Table 1 remain identical.

[15] A caveat to this finding is that the estimation sample and measurement of repression differs from the one of Frantz & Kendall-Taylor (2014).

[16] This null finding holds regardless of the model specification or connectivity matrix specification: violent vs non-violent dissent, minor vs major civil conflict, shared history of coup attempts or shared history of irregular leader exit from office. These null findings are not reported in the article nor the appendix since the purpose of the article is not to find a statistically significant p-value, but rather to contrast two plausible diffusion pathways.

spatial lag for institutionally similar regimes stays positive and statistically significant, while the coefficient of the spatial lag for experiential similarity remains statistically insignificant.

Table I. Diffusion of repression within authoritarian institutional and experiential peer groups, 1951-2008.

VARIABLES	(Model 1) Institutional peer group	(Model 2) Experiential peer group	(Model 3) Both peer groups
$Wy^{\text{institutional similarity}}$: ρ	0.0276*	--	0.0276*
	(0.0120)		(0.0120)
$Wy^{\text{experiential similarity}}$: ρ	--	-0.00130	-0.00124
		(0.00382)	(0.00382)
Lagged physical integrity index	0.901**	0.903**	0.901**
	(0.00754)	(0.00751)	(0.00754)
Co-optation	-1.432**	-1.439**	-1.433**
	(0.142)	(0.142)	(0.142)
Log GDP/capita$_{\text{unit}}$	-1.506**	-1.727**	-1.518**
	(0.513)	(0.506)	(0.514)
Log population size$_{\text{unit}}$	0.199	0.317	0.195
	(0.462)	(0.459)	(0.462)
Incidence of conflict	0.922**	0.918**	0.921**
	(0.224)	(0.224)	(0.224)
Share of conflict in neighboring countries	0.215	0.246	0.216
	(0.597)	(0.597)	(0.597)
Cold War	1.336	1.311	1.337
	(1.270)	(1.271)	(1.270)
Constant	19.31*	21.83**	19.49*
	(7.543)	(7.498)	(7.563)
Observations	3,863	3,863	3,863
Country and Year Fixed Effects	Yes	Yes	Yes
R-squared	0.947	0.947	0.947

Standard errors in parentheses: ** p<0.01, * p<0.05, † p<0.1.

The statistically insignificant effect of the spatial lag for experiential similarity should be understood with reference to previous literature on whether positive or negative experiences influence more the learning process. The literature has not yet reached a consensus whether success or failure is more relevant for the formation of learning peer groups (Bennett, 1991; Gilardi, 2012; Simmons, Dobbin & Garrett, 2007; Gilardi, 2016). In the current setting, the incidence of civil war

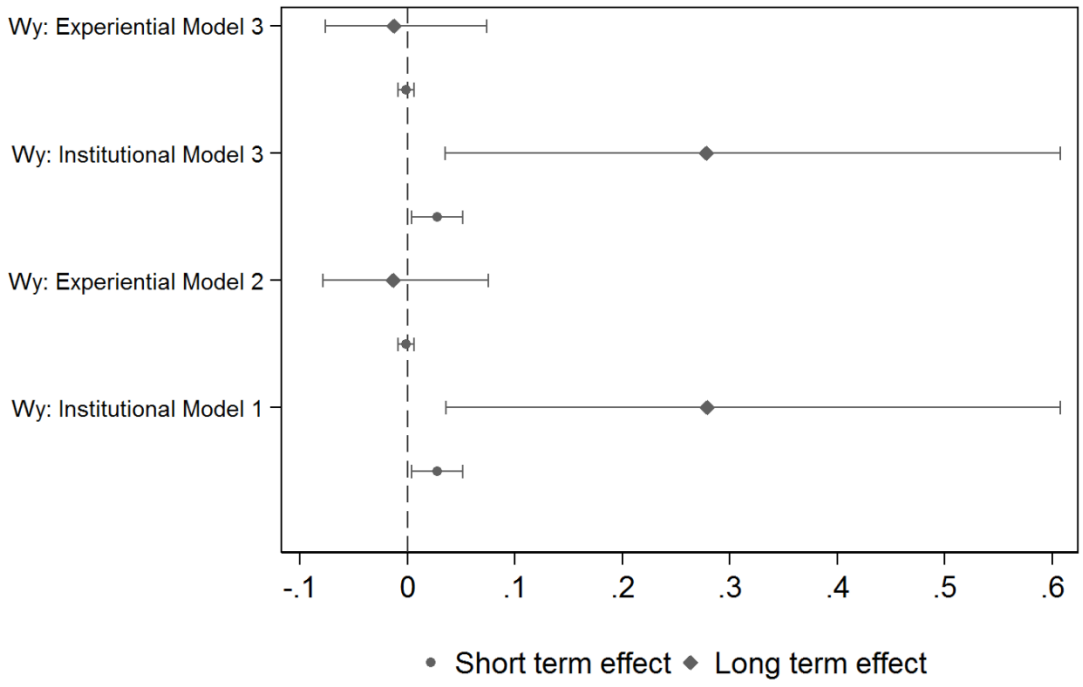
could be an indication of a failure of the regime to prevent outward challenges through cooptation. However, it could also be that leaders are not necessarily troubled by a civil war as they are more concerned about potential challenges from within their ruling coalition (Svolik, 2012). Then, while regimes might be connected through this shared experience of having to face a rebellion, it could be that the null effect of this spatial lag is determined either by conflicting information from the observed country (evolution of conflict) or that simply regimes have difficulties parsing out relevant information from background noise.

Table II. Short-term and Asymptotic Long-term effects of Spatial Lag Variables (Models 1-3)

	Estimate	**Lower CI**	**Upper CI**	
$Wy^{Institutional}$ Model 1	0.0276078	0.004045	0.051171	**Short term**
	0.2788723	0.035548	0.607675	**Long term**
$Wy^{Experiential}$ Model 2	-0.001304	-0.00879	0.006183	**Short term**
	-0.013403	-0.07849	0.074903	**Long term**
$Wy^{Institutional}$ Model 3	0.0275809	0.004015	0.051147	**Short term**
	0.2785657	0.035277	0.60732	**Long term**
$Wy^{Experiential}$ Model 3	-0.001243	-0.00873	0.006239	**Short term**
	-0.012558	-0.07667	0.074078	**Long term**

Note: confidence intervals (CI) pertain to the lower and upper bound of 95% confidence interval.

Figure 1: Short-Term and asymptotic long-term spatial effects of spatial-lag variables



The short and long term effects of the spatial lags from Models 1-3 from Table 1 were calculated using the equation from Plümper, Troeger & Manow (2005) and are summarized in Figure 1 below[17]. The short-term estimate of $Wy^{institutions}$ from Model 1 has a statistically significant value of 0.027 while the asymptotic long-term effect of the same spatial lag has a statistically significant value of 0.27. Conversely, the short-term estimate of the experiential spatial lag from Model 2 has a statistically insignificant value of -0.001 and asymptotic long-term effect of -0.01. Finally, the short-term effect of the institutional spatial lag from Model 3 has a statistically significant value of 0.027 and an asymptotic long term of 0.27. Also, the short and long-term

[17] The horizontal bars are 95 percent confidence intervals and the vertical dashed line represents a spatial effect of 0. Estimates are based on models in Table 1.

effects of the experiential spatial lag from Model 3 are statistically insignificant. All the values of the short-term and asymptotic long-term effects are summarized in Table 2.

Several robustness checks were performed to rule out alternative explanations for the diffusion effect we observe between institutionally similar regimes[18]. First, the models were re-estimated with Fariss' (2014) latent measure of human right violations as dependent variable. The results reported in the main text of the article remain identical with this alternative dependent variable. Second, previous research shows that geographic proximity captures diffusion effects, but the reasons why we observe diffusion over geographic space are not clearly determined (Baybeck, Berry & Siegel, 2011), are sometimes misleading and outdated (Shipan & Volden, 2012), and not comprehensive enough (Desmarais, Harden & Boehmke, 2015). Two repression spatial lags were included in the models to account for potential unobserved spatial heterogeneity and/or spatial clustering of state characteristics. For this, the first connectivity measure captures whether two countries are geographic neighbours based on the 950 km limit proposed by Gleditsch & Ward (2001), while the second connectivity is based on an inversed distance because '*near things are more related than distant things*' (Tobler, 1970: 236). The inclusion of these two geographic spatial lags does not change anything in the reported results.

Third, it is possible that the diffusion effect between institutionally similar regimes is explained by the fact that the observed autocracy experiences dissent while the observing one does not. Then, despite institutionally similar, the observing regimes might react to conflict in institutionally similar regimes, not to their use of repression. To rule out this alternative explanation, I re-estimate a model in which I include a spatial lag that captures the proportion of

[18] A more extended discussion and additional robustness checks can be found in the online appendix. I thank the reviewers for pointing out several potential confounders and alternative explanations. All the reported and additional unreported robustness checks can be found in the appendix.

institutionally similar regimes that experience a civil war. This new model specification does not affect the reported results. Fourth, several spatial lags that capture proportion of irregular leader exit via coup or non-violent campaign and proportion of coup attempts in the neighbouring countries are included to account for a pre-emptive repression (Danneman & Ritter, 2014) or for a potential diffusion of dissent tactics by the opposition. Again, the inclusion of these variables does not affect the main findings. Fifth, a spatial lag measuring the average level of democracy in the geographic neighbourhood is included to account for a potential diffusion effect of institutional features (Gleditsch & Ward, 2006). Next, variables capturing whether autocracies are allied with the US and/or Soviet Union/Russia, and the level of foreign aid/capita they receive were included to account for any international mechanisms that could undermine or enhance their repressive efforts, or the international costs associated with it. Neither of these variables affects the reported results. Sixth, the structure of the security forces (Greitens 2016) has been found to affect the use of extreme repression by autocracies. The structure of security forces and autocracies' similarity in this dimension (Böhmelt and Clayton 2018) have been included as potential confounders for institutionalization and the diffusion of repression between autocracies. The inclusion of these controls does not affect the reported results in the article.

Conclusion

This article provided a theoretical account and empirical evidence that repression diffuses between authoritarian regimes through learning and emulation. Current models of state repression greatly emphasize how repression is the result of domestic processes and factors while ignoring its spatial context and transnational linkages between authoritarian regimes (Davenport, 2007b; Carey, 2010; Abouharb & Cingranelli, 2007; Nordås & Davenport, 2013; Sullivan, 2017; Hill & Jones, 2014; Rivera, 2017). The article provided a theoretical explanation and empirical evidence

that domestic factors create transnational linkages between authoritarian regimes, and how in turn, these influences domestic levels of repression. This happens because authoritarian regimes adjust their levels of repression based on knowledge and information from regimes with which they share similar policy objectives. Autocrats use this information because repression is politically and socially costly, and its effect on dissent is highly uncertain (Davenport, 2007b). Institutionally and experientially similar regimes serve as heuristics that provide satisfying, proximate models of repression in an uncertain policy domain. The former offers information regarding similar vulnerabilities to mobilization, while the latter provides information as to how destroy dissent once it is manifest.

The results suggest that repression is not only a product of domestic processes, but rather there is also a strong diffusion effect between institutionally similar regimes. More specifically, levels of repression in institutionally similar regimes positively influence each other. However, despite recent research indicating that civil wars are the most contagious type of event cross-nationally (Miller, Joseph & Ohl, 2018), the results indicate that the use of repression to defeat an insurgency is not influenced by repression levels of autocracies facing similar dissent.

This article brings several contributions to the literature on state repression, and to the one on conflict processes more general. First, it shows autocrats' strategies of dealing with the opposition are not only determined by domestic processes, but rather their own structural characteristics create an interdependence that influences their use of repression. Second, with respect to diffusion process in conflict research, the result show that besides conflict, governments' strategies on how to solve it permeate national boundaries and diffuse between regimes. Finally, this study is the first one to systematically test and demonstrate in cross-national framework the diffusion of repression between authoritarian regimes (Lynch, 2014).

Despite bringing these important contributions to the literature, the study still leaves out a few important questions that should be answered. First, geography is considered to be an a-theoretical concept, but there is some evidence that it geography matters when studying conflict processes (Fearon & Laitin, 2003). Then, future research could consider how geographical factors exacerbate or attenuate the diffusion of repression between regimes. Second, authoritarian regimes do not use only violent repression against their citizens, but they also violate their civil and political rights (Frantz & Kendall-Taylor, 2014). From this follows that we should extent our scope and understand also how violations of civil and political rights diffuse between regimes. Finally, future studies should consider how other types of interactions between states (foreign aid, trade, alliances) affects diffusion of human rights practices between regimes more generally (democracies and autocracies alike).

Data replication: The dataset, online appendix, and do-files for the empirical analysis in this article can be found at http://www.prio.org/jpr/datasets.'

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