The Backlash Effect of State Coercion:

Protest Resilience Under Visible, Costly, and Targeted Repression

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Abstract

The impact of state repression on protests is puzzling. While in some cases repression can deter street mobilization, other times it backfires, increasing protest occurrence. It is not yet entirely clear *which* repressive actions are associated with deterrence or incitement of protest activity, and why. Using novel data on protest and repression in Chile, I study the effect of repressive actions on the occurrence of protest events. Through models that account for special dynamics and lagged effects, I find that police beatings increase subsequent protest activity. Conversely, other repressive acts, such as the use of water cannons or arrests, neither incite nor discourage protests. I argue that repression backfires when it is visible and targeted: when is visible, costs are perceived and, when directed at individuals rather than a group of protesters, repression may be deemed inappropriate and even unjustified. These results help to understand why repression backfires, and also question whether repression is effective in reducing contentious activities in democratic contexts.

Keywords: police repression, protests, state coercion, repressive tactics, mobilization dynamics

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Introduction

Protests have been an important channel for people to communicate their demands and to make themselves heard. Despite the resurgence of protests in recent years[1] and that public demonstrations are regarded as a basic political right in established democracies, protest mobilization keeps encountering severe repression from the state. Coercion and brutality from law enforcement agents toward protesters are not novel practices. However, even in consolidated democratic countries, repression has become more aggressive in recent years[2], to the point that systematic violations of civil and human rights at the hands of law enforcement officials have become a regular practice in the context of street mobilization. This can inhibit the will to protest and ultimately deter people from collective action, diminishing protest activity, but it can also have a backlash effect and increase mobilization, and potentially cause protesters to resort to more violent practices (Rasler, 1996; Sullivan, Loyle, and Davenport, 2012).

Despite this array of connections between repression and dissent, it is still unclear whether specific forms of repression, such as arrests or physical constraints, have particular effects on mobilization, and if this diversity of connections between state coercion and protest can be explained by the type of coercive strategy that is being used –what some authors have called the *repertoire* of repression (Gutiérrez-Sanín and Wood, 2017). The analysis of concrete repressive actions of law enforcement officials based on typologies was identified as a key topic for social movements research more than a decade ago (Davenport, 2007). There have been significant efforts in that regard (e.g. García-Ponce and Pasquale, 2015; Curtice and Behlendorf, 2021; Bautista et al., 2020), nevertheless, empirical research has not yet captured the diversity in the types of repression carried out during contemporary protests in democratic contexts, and whether they have different effects on the occurrence of protests. It is important to inspect not only which forms of repression deter protest but also the ones that increase it, especially considering that when attacks on demonstrators backfire, the political regime might be severely damaged (Smithey and Kurtz, 2018). In such cases, the government in power may even be unable to overcome the crisis of legitimacy caused

by repression when it is considered inappropriate or unjust.

Assessing the effect of different forms of repressive actions is challenging for multiple reasons. Firstly, when measuring state repression, most sources only consider broad categories based on dichotomous classifications, such as police presence/no presence, or lethal versus non-lethal.[3] Secondly, it is difficult to have a temporal segmentation of repressive events and get to know precisely *when* each form of repressive action takes place. This prevents researchers from establishing potential relationships between forms of repression and dynamics of protest mobilization. Since the literature has found different directions on the effect of repression on protests, examining specific forms of repression can shed light on whether these conflicting results are explained by grouping different repressive actions. Additionally, this has prevented scholarship from developing comprehensive theories to explain why and when repression works and to understand, for instance, what types of dangers and threats inflicted by the state end up deterring protests.

Building on the fact that repression can be regarded as an act of strategic communication in the public sphere (Koopmans, 2005), I argue that repressive acts possess three dimensions that can explain their potential effect on protest occurrence: visibility, costs, and targeting. Scholarship has regarded these characteristics as key to understanding the relationship between protest and dissent, but they have not yet been linked to concrete forms of coercion. I argue that most forms of police repression in democracies can be categorized based on these three aspects, and that, depending on their classification, we can anticipate specific outcomes on mobilization. I expect repressive actions that are visible and targeted to have the potential to cause more backlash, increasing the number of protests. Conversely, repressive actions that are not visible, or that are targeted against specific groups of "deserving" protesters (i.e., the ones who engage in radical or violent actions), will not stimulate the subsequent occurrence of protests. Lastly, violent and life-threatening forms of repression will have a deterring effect on mobilization, since they increase their costs. I test these hypotheses through an analysis of the *Estallido Social*, a protest cycle in Chile that

began in October 2019 and lasted until the start of the COVID-19 pandemic. Due to the development of protests over several months, in multiple cities across the country, and the various types of repression that were used to deter protesters, this case serves as an appropriate setting for studying the effects of state coercion on protest dynamics.

Using novel data provided by the Chilean Institute of Human Rights (INDH) on police repression during the previously mentioned period of street protests, along with protest occurrence information obtained from the Armed Conflict Location and Event Database (ACLED), I find that certain types of repressive actions caused an increase in protest activity: protests surged on the day following repressive events that comprised beatings of demonstrators. I test different specifications of my models and the results remain consistent. The effect of beatings on protest occurrence remains significant in these models. Even when these results support recent findings related to how mobilization reacts to repression (e.g. Curtice and Behlendorf, 2021; Ellefsen, 2021; Aytaç, Schiumerini, and Stokes, 2018; Smithey and Kurtz, 2018), as they show repression sometimes can cause backlash and produce more contentious activities, they also offer new evidence regarding *which* forms of state repression produce a backlash, showing that not all forms of repression have the same effect and that, in fact, most coercive techniques commonly used in democratic regimes do not dissuade protests.

Additionally, my results challenge previous findings regarding protest deterrence when the costs and risks associated with participation increase (see Opp and Roehl, 1990; Digrazia, 2014), showing that this association might be too simplistic. Being beaten up by the police carries great risks for protesters, and sometimes even fatal consequences. Nevertheless, such acts increase protest frequency, which shows that costs and potential risks are not key factors in explaining dissuasion, but on the contrary, that they take a secondary place when it comes to repressive actions that are visible and not clearly targeted, not dissuading protests despite the harmful potential of the repressive action. In this sense, it is necessary to review the long-standing theory of the inverted U-shape relationship between repression and mobilization that contends that, after a given threshold, police repression will deter mobilization (Gurr, 1970;

Lichbach, 1987). I do not find evidence that shows that specific forms of police repression represent a hindrance to protesting.

This paper contributes to the literature on social movements and state coercion through the presentation of a novel approach, outlining how various forms of repressive actions can evoke specific responses to dissent and protest. I intend to move beyond previous research, which has focused on police strategies and how they affect protest (e.g. Earl and Soule, 2010), highlighting instead concrete repressive tactics that entail different degrees of visibility, costs, and targeting against those who protest on the streets. Latin America has been going through a series of struggles with police brutality, along with political crises that, for the most part, have exacerbated law enforcement violence against civilians. Understanding which repressive tactics backfire can contribute to the comprehension of persisting conflict in democratic contexts. As Gurr (1970) states, "the public order is most effectively maintained (...) when means are provided for individuals to work towards the attainment of their aspirations" (p. X). If the exercise of inalienable political rights encounters repression, it can severely undermine governance and overall democratic quality.

Repression: Between Protest Coercion and Backfire

Extensive scholarship has been devoted to unveiling the relationship between contentious activities and state repression. Even though repression is not the only state response to protests, it is undeniably central to understanding social movements and their behavior (della Porta, 2012). The conundrum about why repression sometimes works to dissuade protests, but other times it backfires, causing protest to increase instead –a phenomenon known as the *coercion-protest paradox* (Pearlman, 2013)– is at the center of the research regarding the effect of state repression on mobilization.[4] More than a decade ago, Earl and Soule (2010) identified that most conceptualizations of protest policing are simplistic and do not fully capture the multiple strategies used by law enforcement agents. There continues to be little research on, for example, whether protest dynamics react differently to specific repressive strategies and crowd control mechanisms. The research developed by Khawaja (1993) on the effect of repression in the West Bank is, to my knowledge, the first piece of scholarship about the effect of different forms of state repression beyond arrests.[5] The author finds that most forms of repression positively affected collective action, and only home-to-home searches significantly decreased it. However, he recognizes that these results are likely to be applicable only in environments conducive to resistance, where continued repression will not succeed in suppressing collective action and violence, given the strength of the organizational structure in such environments.

More recently, Moss (2014) also assessed how challengers respond to repression, identifying seven repressive tactics ranging from dis-attention to physical confinement and bodily harm. Even when the tactics identified by the author are specific to the context of Jordan in the post-1989 Liberalization period, focusing on activists' tactical adaptations to different repertoires of repression, this classification represents progress toward the construction of typologies, since it considers varieties of repression that have been overlooked by the literature, such as different forms of physical confinement and bodily harm (e.g., kidnapping, imprisoning, among others). In order to subsequently establish the link between theories that explain when repression works

and when it does not, and specific types of repression, in the following sections I argue that visibility, costs, and targeting can explain the potential impact of police repression on mobilization. These characteristics are relevant not only because they theoretically summarize key aspects for understanding the impacts of repression, but also because they serve as cornerstones to classifying forms of coercion in democratic regimes.

The Visibility of the Repressive Action

Visibility refers to the strategic processes between actors with unequal material and symbolic resources that make or prevent something from becoming public (Jiménez-Martínez, 2021). The categorization of the repressive act according to its level of visibility is based on the distinction between covert and overt repression. As Earl (2003) established, repression can be categorized as overt when it is intended to be obvious to both protesters and the general public. Within these overt forms of repression, Davenport (2005b) mentions actions aimed at restricting the behavior of citizens through the imposition of negative sanctions, and actions that physically damage citizens through violations of personal integrity. Repression not only comprises violent and visible forms of coercive tactics executed by state agents but also entails indirect and covert forms of repressive actions conducted by either state or non-state agents (Heuer and Hierman, 2022). Therefore, examining coercive tactics in regards to their visibility would help us understand, for instance, why sometimes less visible forms of state coercion could be preferred in order to prevent the backlash of repression (Carey, 2010), and how individuals react to different strategies of repression based on what they see and perceive.

Arguably, visibility precedes cost-benefit calculations. Without it, costs are not perceived by bystanders, and therefore, people cannot update their preferences of mobilization accordingly (Christensen and Garfias, 2018). Since repression works as a communicative act targeted not only at currently engaged demonstrators but also at the general (usually inactive) population, visible acts of repression can incite more protest activity from both protesters and non-protesters (Sharp, 1973). As Earl (2003)

suggests, when repression becomes obvious to both protesters and the wider public, it can stimulate more mobilization. Protesters may engage in further contentious activities when repression does not manage to dissuade protest behavior, whereas non-protesters may newly engage in further contentious activities when they become aware of the levels of repression, which relates to the visibility of the repressive actions. In this way, challengers are able to rebel against harsher forms of repression by making their grievances public (Moss, 2014). If uncommitted individuals or groups are unable to get information about state repression, they cannot experience preference changes. In such cases, increased mobilization after repression is unlikely (Sutton, Butcher, and Svensson, 2014).

During protests, there are forms of repression that cannot be carried out in private spaces, meaning that they will be noticeable to both demonstrators and bystanders. One of the most typical forms of repression under this category is the use of crowd control devices and non-lethal weapons, which may include rubber bullets, tear gas, and water cannons aimed at crowd control. Given that the visibility of these repressive actions is higher, they are also more likely to be reported in the media, reaching people who initially were not aware of these repressive responses by the state. If these actions become visible enough, private citizens could actually observe surges and reductions in coercive repression (Earl, 2003), granting meaning to these repressive events, which could lead to preference changes. It has been argued that when the police are perceived as "overreacting", there is a process of solidarity between those who are the direct target of repression, and more moderate (and usually larger) forces (della Porta, 1997). This may be one of the reasons why the triggers of mobilization are found in visible or excessive measures (Josua and Edel, 2015), pointing to a possibility of an increase in protest activity after highly visible repressive events.

If, when protests reach their maximum information-revealing potential, the likelihood of cascading into a successful uprising increases (Garfias and Magaloni, 2018), I expect that repressive actions with higher visibility to both protesters and bystanders increase subsequent protest activity (*Hypothesis 1*). Traditional forms of repressing protests,

such as crowd control measures, involve a degree of visibility that allows citizens to see and assess the circumstances in which they took place. On the contrary, more covert and non-visible forms of repressive actions will not have an impact (*Hypothesis 2*). For repression to backfire, information about the event or situation needs to be communicated to receptive audiences (Hess and Martin, 2006). However, there could be certain actions that are unlikely to be carried out in public, especially repressive actions that are more targeted to specific individuals. Law enforcement agents could prefer other locations instead, such as police stations or mobile checkpoints, in an effort to minimize the risk of dissent and potential backlash (Esberg, 2021). If the repressive actions are not publicly displayed, they would lack mobilization potential.

The Costs of Mobilization

In the context of state repression, costs have been widely studied within the repression-concession continuum (e.g. Klein, Cuesta, and Chagalj, 2022; Shadmehr and Boleslavsky, 2022). When given a choice to concede or repress, the regime opts for whichever strategy is "cheapest" (Lachapelle, 2021). Understanding the costs of mobilization is therefore useful not only to understand why the regime decides to repress but also when people decide to mobilize. According to the resource mobilization theory (Gamson, 1975; Tilly, 1978), cost-benefit calculations are made when individuals decide to participate in collective action, which becomes more likely if the potential benefits are greater than the potential costs. But repression increases the feeling of relative deprivation (Gurr and Moore, 1997) and overall sense of disadvantage, and when these feelings are sensed collectively, they can ultimately drive the group members to do something about it (Van Zomeren et al., 2004).

Since repression can change people's behavior by affecting the parameters considered in the cost-benefit decisions about dissent and their perceived risks (Young, 2019), we can expect that more violent forms of repression increase the perception of danger, and therefore, dampen protest activity. But, at the same time, more violent (and therefore, conceivably more costly) forms of repression have a greater propensity

to generate outrage, which could induce people to adopt a confrontational stance toward authorities, becoming potential supporters of the collective cause (Khawaja, 1993, 67). This is one of the reasons why several authors have concluded that repression makes people angry, an emotional response that could encourage citizens to join the protests (della Porta, 2013; Jasper, 2014), especially when these repressive events generate public outrage (Hess and Martin, 2006). More people joining street mobilizations, or new people participating in them, can increase not only the frequency of protests but also how persistent they are over time.

The re-examination of the resource mobilization theory and the emphasis it places on costs has led to the recognition that popular rebellion, rather than resulting from a decline in the costs of dissent, can be the context in which individuals accept costs that they previously had not accepted (Pearlman, 2013). The uprisings of the Arab Spring were key to questioning the role of costs in protest participation. As Pearlman (2013) states, what those uprisings held in common was that repression generated indignation that gave energy and courage to protesters, propelling people into the streets. This dynamic has also been identified in the case of the Catalan independence movement, where the backlash effect of repression caused an increase in the positive attitudes towards the social movement prerogatives (Balcells, Dorsey, and Tellez, 2021). In these contexts, if repression is considered unjustified and demonstrators are integrated into networks that potentially encourage protests, micromobilization processes promoting protests could be set in motion (Opp and Roehl, 1990).

Prior studies have utilized terms like "strength" or the "severity" of repression to capture the impact of repression on those who experience such acts. Of special importance has been the study of styles of repression –for instance, diffused versus selective, or reactive versus preventive (della Porta and Fillieule, 2004). Recent qualitative assessments have shown that sustained mobilization can be explained by emotional mechanisms produced by repression, such as guilt, when participants feel that they have not contributed enough to the movement, and moral commitment and solidarity when witnessing clashes between protesters and police officers (Mok, 2022).

To incorporate these crucial elements, I anticipate that more violent and life-threatening forms of repression will exert a deterrent effect on subsequent mobilization (*Hypothesis 3*). This recognition underscores the intricate interplay between emotional dynamics and the potential chilling effect of severe repression on the trajectory of collective action.

Targeted vs. Indiscriminate Repression

Targeting has been widely explored as an aspect of political violence in armed conflicts in contrast to indiscriminate violence (Gutiérrez-Sanín and Wood, 2017). Since the purpose of repressive actions is to prevent or diminish direct and non-institutional challenges to social, cultural, and/or political power, state coercion often has a bigger degree of targeting compared to, for instance, diffuse systems of social or political control (Earl, 2011). Della Porta (2012) identified the importance of "selection" to understand the different strategies of protest policing in Italy and Germany from 1950 to 1990. According to the author, the distinction between "selective" and "diffuse" is based on the range of groups subject to repression. Selective police targeting is opposed to more escalating tactics since it mainly focuses on more violent groups. On the contrary, indiscriminate repression targets the mass public, regardless of its involvement with the opposition (Brockett, 1993). If state violence is targeted and carried out through, for instance, selective imprisonment, torture, and murder of a select group of dissidents, repression is not likely to have the effect of igniting mass rebellion (Christensen and Garfias, 2018).

By targeting dissidents, repression aims to diminish the capacity and will of individuals to engage in collective action (Kobayashi, Song, and Chan, 2021). But since repression also works as a communicative act aimed not only at currently engaged protesters but also at the general (and usually inactive) population, state coercion also has the potential to incite more protest activity from both demonstrators and non-demonstrators (Sharp, 1973), a possible backlash when repression is conducted in a non-targeted way. Therefore, targeting is the third aspect of repression that contributes to understanding its impact on mobilization. As Sullivan (2016)

summarizes, repression that indiscriminately affects the general population can increase support for the movement, and therefore, cause an escalation of conflict. Conversely, if coercion targets only movement participants and their allies, it can effectively deter support, leading to de-escalation.

With this in mind, I expect that among the visible repressive actions, those that appear to be more indiscriminate (in the sense of affecting large portions of not only protesters but also bystanders) are the ones that will cause a greater increase in subsequent protest activity (*Hypothesis 4*). The focus lies in determining whether the repressive action is aimed at a crowd or an individual. As a result, targeting hinges on the physical characteristics of the repressive techniques employed. When the government directs repression at clandestine mobilization activities or fringe groups, it is more likely to undermine their organizational capacity, diminishing subsequent challenges. On the contrary, when repression is directed towards overt collective challenges (e.g., an ongoing demonstration), the challenger can publicize abuses and "deliver the necessary incentives to promote further challenges" (Sullivan, 2016). When using certain crowd dispersion techniques, the target of law enforcement officers is less likely to be specific "troublemakers" individuals, and more likely to be an anonymous collective, focusing their coercive measures on indiscriminately dispersing the entire crowd (Waddington, 1997). An example of this could be the use of water cannons to disperse crowds of people. This can increase the uncertainty about the aims of the intervention, which can subsequently provoke protest escalation (della Porta, 1997). Since these crowd dispersion techniques aim at large portions of protesters, even bystanders are at risk of being affected by them, which could increase the overall willingness to engage in subsequent collective action (Ayanian and Tausch, 2016).

Context: The Chilean Social Outburst

The so-called *Estallido Social* ("social outburst") that began in Chile in October 2019 could be categorized, in Tarrow's words, as a "turbulent point in history" (Tarrow, 1994). The Chilean case represents an interesting puzzle to study police repression and its effects because the protests and riots that took place during the following months were characterized by their almost daily occurrence in both big and small cities and their high turnout. But, unfortunately, this period of social mobilization was marked by brutal repression carried out by law enforcement agents. This protest cycle allows tracing different repressive tactics and their effect on mobilization trends. The fact that protests unfolded for almost six months makes it possible to assess the repression-contention nexus, beyond particular and dispersed protest occurrences.

After the return of democracy following the 1989 Plebiscite that ended Augusto Pinochet's dictatorship, multiple social movements developed in Chile, the most emblematic ones being the student movements of 2006 and 2011. Even when the student movement achieved significant political victories, such as the repeal of the General Education Law (*Ley General de Educación*, LGE), sustaining steady protest activities for almost entire academic years, neither the 2006 nor the 2011 movement had the same level of protest frequency and sustained turnout as the 2019 *Estallido*. What unfolded for almost six months was a real routine of protest activity with little to no organization. In Santiago, people gathered in Plaza Baquedano (later renamed *Plaza Dignidad* by the protesters and supporters of the movement) almost every afternoon, with Fridays being the most frequented day of the week for people attending the protest. Similar dynamics occurred in other cities. According to data provided by the national police *Carabineros*, over 4,300 protest events occurred across the country from 18 October 2019 to 31 March 2020.

The protests and riots started in the capital Santiago after the announcement of an increase in public transportation fares of 30 Chilean pesos, but they quickly spread to other cities. After the announcement of the tariff increase, students from several public high schools in the capital organized mass evasions of public transport, specifically in

subway stations (Baeza, 2019). During the following week, police officers were constantly monitoring the entrances of the stations, closing accesses to have greater control over the transit of pedestrians. The most critical stations were closed for several hours per day, especially during evenings, when most people get off work. On the afternoon of Friday, October 18, the situation escalated after thousands of people were not able to commute from their jobs to their homes. Barricades and the destruction of subway access gates occurred. During that night, multiple subway stations were set on fire.

As a response to the fires in the subway stations, president Sebastián Piñera declared a state of emergency and a subsequent curfew that started on October 19. Riots occurred in other parts of the country during that weekend, and the repressive actions of the police exacerbated the social unrest. Government support for police actions ultimately translated into more social unrest and discontent. Despite the constant pressure from the Government to "return to normality", and the announcement of an action plan called "New Social Agenda" (*Nueva Agenda Social*) (Rogel, 2019), which, according to the Government, aimed to solve the main problems and struggles of the population, social unrest did not stop. The feeling that the Government's measures were not aimed at structural reforms, coupled with high levels of repression, ultimately generated a constant state of skepticism and anger in the society. Protests and riots lasted until the COVID-19 outbreak in mid-March 2020.

According to data provided by *Carabineros*, more than five million people took part in the protests between October 2019 and March 2020.[6] This high turnout did not prevent demonstrators from being physically repressed. The level of repression exercised mostly by *Carabineros*, but also by other law enforcement institutions such as the military and the marines, was unprecedented for the democratic history of the country. International organizations such as Human Rights Watch and Amnesty International acted as observers of what was happening on the streets, and continuously called out the disproportionate use of force against protesters and persistent non-compliance with protocols that resulted in thousands of people with eye injuries caused by rubber bullets (Amnesty International, 2020). The severity of the accusations against *Carabineros* and their practices caused

considerable outrage in the population. Abuses were not limited to what happened on the streets while protesting but also occurred in other places. The media informed about several cases of undressing in police stations, even of minors (INDH, 2019), along with other occurrences of gender-based violence such as rape threats (Rojas, 2019). Given that the frequency and participation levels of protests remained relatively stable over the next few months, despite the variety and intensity of repressive actions committed by *Carabineros* and other law enforcement institutions, it is worth examining the effect of these repressive actions and whether they were linked with an increase in protest activity.

Research Design

Variables and Measurement

Using data available in the Armed Conflict Location and Event Database (ACLED), I gathered information at the municipal level (lowest administrative unit) on the dependent variable *protest events occurrence*, which measures the number of protests that occurred within a specific municipality, in a specific date. ACLED database identifies different event types associated with social mobilizations, such as battles, explosions, protests, and riots, as well as their exact date and location, using national and international news as sources of information.[7] I considered all the events categorized as protests or riots[8] that occurred between 18 October 2019 to 31 March 2020, along with information on their place of occurrence (municipality) and exact date.

I supplemented this protest occurrence information with data on *repressive actions* by law enforcement officials provided by the Chilean Institute of Human Rights (INDH). The INDH is an autonomous public entity, and although it is publicly funded, it does not depend on any state power. During the 2019 protest cycle, they were a key actor in documenting and communicating wrongdoings by law enforcement officers. The INDH produced an extensive database containing all judicial actions from civilians who claim to have been subjected to any type of abuse, excessive violence, or violation of basic rights by state agents. The fact that this database was elaborated based on civil lawsuits decreases the risk of reporting bias since it is not at the discretion of the administrative entity which cases to record and which not to.[9] The database included 22 types of repressive actions, of which I considered only those with more than 1 percent of occurrence from the total number of repressive actions, thereby working with only 8 repressive actions. For each of these actions, I measure the total number of repressive events under each category, by municipality, at a specific date. Details about the full set of categories and their distribution are available in Appendix A.

Combining these two sources of information, 235 municipalities (from 346) presented at least one protest event or one action of repression during the mentioned period. Based

on that, I constructed a time-series database comprising a total of 187 municipalities for each of the 166 days, getting a final data set of 31,208 observations.[10] Table 1 summarizes the distribution of repressive actions and contentious events by region, month, type of repressive action, and type of contentious event for those locations that have at least one protest or repressive event.

Table 1: Distribution of repressive actions and contentious events

	Repressive actions	**Protest events**
Region		
Metropolitan Region	34.15 (949)	24.24 (593)
Other Regions	65.85 (1,830)	75.76 (1,853)
Type of Repressive Action		
Arrests	9.86 (274)	
Beating	34.40 (956)	
Gassed	3.27 (91)	
Hit by a car	1.66 (37)	
Other	1.70 (46)	
Shooting	45.27 (1,258)	
Threats	1.44 (40)	
Unauthorized entry/home invasion	1.08 (30)	
Water impact	1.69 (47)	
Month		
October 2019	49.37 (1,372)	23.96 (586)
November 2019	33.29 (925)	41.17 (1,007)
December 2019	5.07 (141)	9.44 (231)
January 2020	5.33 (148)	8.59 (210)
February 2020	1.73 (48)	4.01 (98)
March 2020	5.22 (145)	12.84 (314)
Total (N)	2,779	2,446

Note: Entries in percentages with N in parenthesis. Only repressive actions with more than 1% of occurrences were considered.

Estimation

Given the panel structure of the data, having is information per municipality per day, and the fact that both the dependent and the right-hand side variables are counting variables, it is necessary to use an estimation that (1) allows for overdispersion, that (2)

accounts for the existence of zeros in the data generating process, and that (3) works for unbounded counts. I use a negative zero-inflated negative binomial model as suggested by Brooks et al. (2017). According to the authors, zero-inflated GLMs allow us to model count data using a mixture of a Poisson or negative binomial distribution, and a structural zero component, i.e., extra zeros. This model also allows for events to be correlated.

Following Sudduth and Gallop (2023) implementation, I use the `glmmTMB` package which allows me to account for overdispersed protests and police repressive events data, as well as for the presence of zeros (i.e., municipalities that did not have protests or repressive events on a given day, which means having to deal with rows containing only zeros). It also allows me to account for specific dispersion parameters in the dependent variable, such as the day of the week, or dependence on climate conditions.[11]

Additionally, following the literature that highlights the importance of lagged variables in the study of social movements and protests (e.g. Beck and Katz, 1996; Earl and Soule, 2010; Opp and Roehl, 1990), and how they can be used to eliminate serial correlation of the errors (Beck and Katz, 2011), I included lagged explanatory variables of the dependent variable *protest events occurrence*, as well as lagged specifications for each of the nine types of repressive actions, since I am interested in how previous experiences with police repression affect subsequent protest occurrence.

The outcome $Y_{i,t}$ is the observed count of protest events for municipality i on day t which follows a distribution of $Y_{i,t} \sim ZINB(\psi_{i,t}, \lambda_{i,t}, \alpha)$. $Y_{i,t}$ is a structural zero with probability $\psi_{i,t}$ (the zero-inflation component), or otherwise, a count with expected value $\lambda_{i,t}$ and overdispersion α in order to estimate the count component $log(\lambda_{i,t})$. Therefore, the estimated models have the following structure:

$$Protest\ Events_{i,t} \sim ZINB(\psi_{i,t}, \lambda_{i,t}, \alpha) \tag{1}$$

where:

$$\psi_{i,t} = Logit(\alpha + \beta_m Z_{i,t-k} + \mu_i) \tag{2}$$

and:

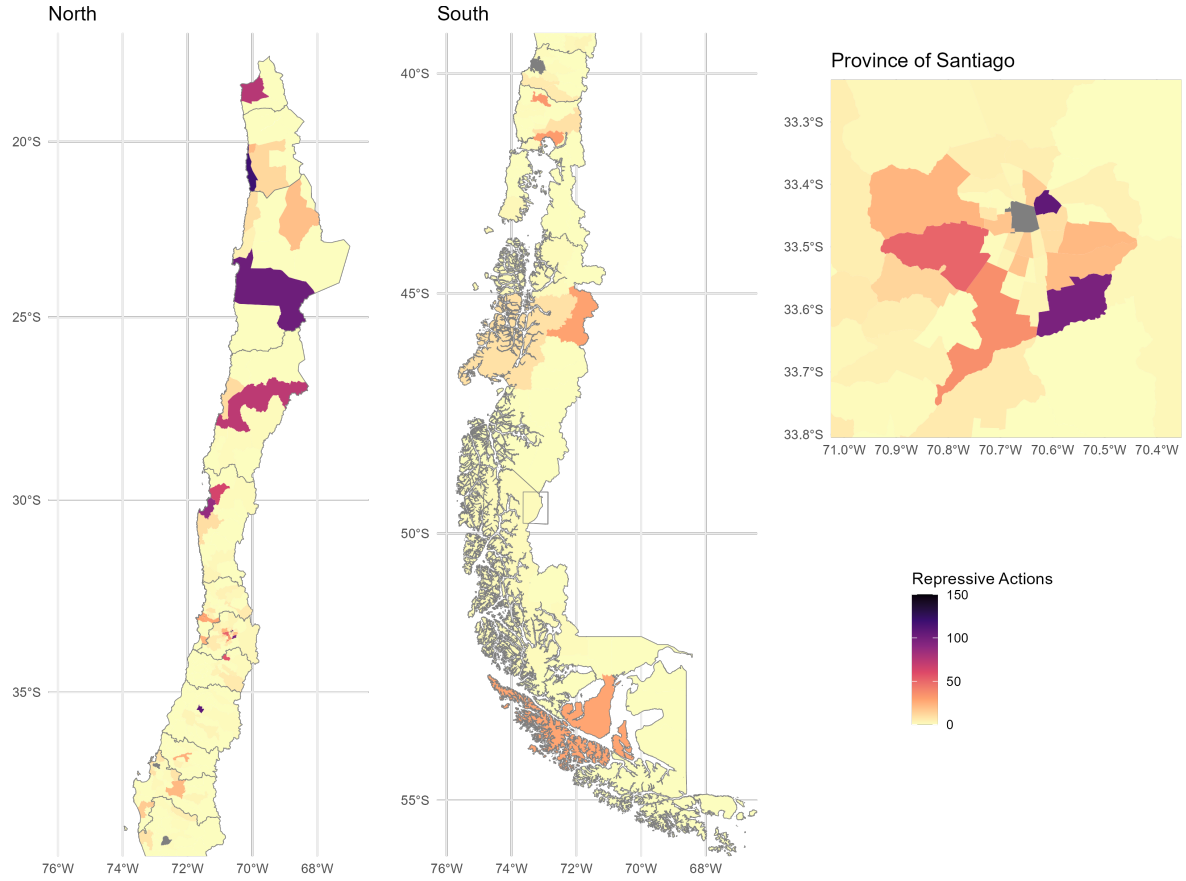
$$log(\lambda_{i,t}) = \gamma_0 + \gamma_n X_{n,i,t-k} \tag{3}$$

In Equation 2, β_m represents the coefficients corresponding to each zero-inflation predictor represented by $Z_{i,t}$ for each municipality i lagged by $t-k$. In Equation 3, γ_n are the coefficients corresponding to each count component predictor, and $X_{n,i,t-k}$ are the count component predictors for each municipality i lagged by $t-k$. Finally, α and γ_0 are the intercepts of the zero-inflation model, representing the baseline probability of excess zeros, and the intercept term in the count component model, representing the baseline mean of the negative binomial distribution, respectively. This proposed model facilitates the capturing of micro-dynamics within the interplay between protest and repression.

Results

Figure 1 shows the occurrence of repressive actions throughout the country, from 18 October 2019, until 31 March 2020. We can see a remarkable occurrence of repression in the Metropolitan Region, particularly in the Province of Santiago, which is related to the greater proportion of protests concentrated in that area. But how does the distribution of repressive actions correlate with subsequent protest activity?

Figure 1: Number of Repressive Actions by Municipality



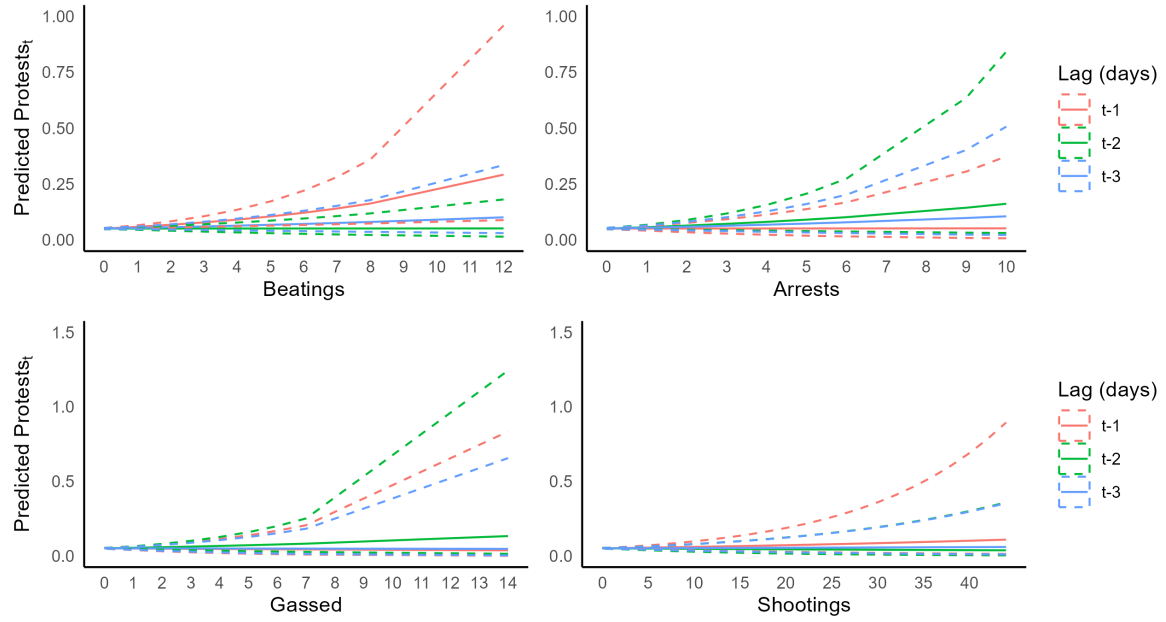
Note: The top right panel zooms into the Province of Santiago, which includes the capital (Santiago).

Since I am interested in exploring how *previous* acts of repression affect subsequent protest events, I estimated the zero-inflated negative binomial (ZINB) models with lagged independent variables $t-1$ to $t-3$, that is, one, two, and three days before.[12] Figure 2 shows the results of selected types of repressive actions based on Model 3, which is the one with a better fit (full models available in Table B.1). This model includes fixed-

effects by municipality and lagged variables up to three days before. As shown in the directed acyclic graph of Figure B.1, this approach is necessary since repressive actions at time $t - i$ could be affecting both repressive actions at time $t - 1$ and t as well as protest events at time $t - 1$ and t. We see that only being beaten up by the police (beatings) at time $t - 1$ (that is, the day before the protest) possess a consistent effect through all the models.

Previously, I argued that most of the repressive repertoires used in democratic countries can be classified according to their level of visibility, the cost they carry for demonstrators, and the level of targeting with which they are deployed. With the results of this first estimation, we see that repressive actions that are arguably visible, such as the use of water cannons or tear gas, do not increase the frequency of subsequent protest events. In light of these results, there is not enough evidence in favor of *Hypothesis 1*. Additionally, covert and non-visible forms of repression (for instance, threats or home invasions) are not relevant in explaining mobilization, which is consistent with *Hypothesis 2*.

Figure 2: Predicted protests at different levels of repressive actions



Note: Selected repressive actions from Model 3 in Table B.1, which shows different ZINB models. Dashed lines represent the confidence intervals at 95%.

Hypothesis 3 stated that more violent and life-threatening forms of repression will have a deterring effect on mobilization. Being shot by a rubber bullet and being a victim of a beating are arguably the most costly repressive actions of the ones measured in this study. Hundreds of protesters in Chile lost one or both eyes due to rubber bullets. Chile became the country with the highest worldwide rate of ocular trauma caused by kinetic impact projectiles during protests (Rodríguez et al., 2021). Additionally, police beatings can also represent high costs to the physical integrity of protesters. However, contrary to *Hypothesis 3*, these two repressive actions do not deter protest but, on the contrary, beatings increase the occurrence of protests, and the shooting of rubber bullets has a statistically non-significant effect. This puts into question the effectiveness of these widely used police repression tactics in decreasing mobilization by making participation more costly.

Regarding the targeting or indiscriminate application of the repressive action, *Hypothesis 4* indicated that more indiscriminate repressive actions will be more likely to cause an increase in subsequent protest activity, whereas more targeted ones are expected to be aimed at specific groups of "troublemakers" protesters, which could favor their justification. However, according to the results, we can see that the indiscriminate forms of repression such as water impact or the use of teargas, are not associated with an increase in protest events. On the contrary, targeted forms of repression such as beatings (which are carried out one-on-one) ended up increasing the volume of protests. According to these results, repressive activities that entail the combination of high costs, while targeting protesters are the same time, which is the case of police beatings, are the ones that generate a backlash effect.

In light of these initial explorations, I conducted additional analyses. Firstly, to rule out the possibility that the results are driven by the estimation strategy, I modeled the data using Poisson models and negative binomial models, without considering the zero-inflated part of the data generation process. Appendix C contains the results of these estimations, showing that the findings are consistent. Secondly, I estimated new models with new variables that can act as confounders, such as weekday/weekend, connectivity of

the municipality (measured in distance to the province capital), rainfall, and anomalous temperature (measured in standard deviations from the mean temperature for that day in each municipality). Table 2 shows the results of these models. As the model fitness improves, police beatings lose statistical significance after the inclusion of repressive actions up to three days before. We see that protests occur more during weekdays and less when it rains or when there are anomalous temperatures, and decrease in municipalities that are farther away from the province capital.

Table 2: Zero-inflated negative binomial models with control variables

	Model $t-1$	Model $t-2$	Model $t-3$
Protest events$_{t-1}$	1.230***	0.931***	0.768***
	(0.045)	(0.048)	(0.048)
Shootings$_{t-1}$	0.050**	0.012	0.010
	(0.025)	(0.024)	(0.022)
Tear Gas$_{t-1}$	0.086	0.084	0.040
	(0.094)	(0.099)	(0.114)
Water canon impact$_{t-1}$	0.279	0.244	0.033
	(0.258)	(0.252)	(0.263)
Beatings$_{t-1}$	0.197***	0.109**	0.077
	(0.050)	(0.049)	(0.049)
Arrests$_{t-1}$	0.128	0.007	−0.018
	(0.089)	(0.090)	(0.096)
Unauthorized entry/invasion$_{t-1}$	0.101	0.021	0.074
	(0.244)	(0.224)	(0.219)
Threats$_{t-1}$	0.535**	0.357	0.174
	(0.264)	(0.260)	(0.239)
Hit by a car$_{t-1}$	−0.025	−0.138	−0.502
	(0.412)	(0.412)	(0.448)
Other$_{t-1}$	0.629**	0.434*	0.450*
	(0.251)	(0.254)	(0.246)
Controls			
Weekday	0.460***	0.575***	0.750***
	(0.063)	(0.067)	(0.072)
Distance to Province Capital (Kms.)	−0.009***	−0.008***	−0.007***
	(0.001)	(0.001)	(0.001)
Precipitations	−0.124**	−0.121*	−0.177***
	(0.061)	(0.062)	(0.063)
Anomalous Temperature	−0.396***	−0.322***	−0.272***
	(0.058)	(0.059)	(0.059)
Observations	26 400	26 240	26 080
R^2 Marg.	0.053	0.080	0.099
AIC	12 521.1	12 003.2	11 509.3
BIC	12 660.1	12 223.9	11 811.6
RMSE	9.23	1.92	1.16

Note: Full models with all the lagged variables available in Table B.2. Zero-inflated negative binomial models include lagged versions of the repressive actions, specifically the day before, two days before, and three days before the measurement of the dependent variable *protest events*$_t$. Lagged versions of the dependent variable are also included. All models control for weekday (weekend as reference), and weather variables at the province level such as precipitations (no precipitations as reference), and anomalous temperature (1 standard deviation over the mean for that given day). * p < 0.1, ** p < 0.05, *** p < 0.01

Description of the Mechanism

To understand the results (namely, that police beatings increase protest occurrence, whereas other forms of repression do not have an impact), it is necessary to bring back the three characteristics that I mentioned previously that serve to classify the potential impact of repressive events: visibility, costs, and targeting. I argued that one reason why police repression could spark protests instead of deterring them depends on the visibility of the repressive act: those repressive actions that are carried out in plain view so demonstrators and bystanders can see them, possess a greater potential to increase subsequent contentious activities, whereas more covert forms of repression will not have an impact. Visibility allows costs to be perceived, as well as an assessment of the level of targeting of the police action that is been carried out.

Following the conceptualization of "patterns of violence" by Gutiérrez-Sanín and Wood (2017), the authors claim that for each repertory of violence, we can identify three elements: its (1) frequency, and (2) technique which is the way in which violence is carried out against the (3) targeted population. Extending on that model, the main result of this study can be understood as different combinations of targeting (targeted or non-targeted forms of repression), and the visibility of the techniques (visible or covert).

Figure 3 presents a classification of the repertoires of repression that were considered in this study. Certain police actions can be both visible and non-visible: for instance, beatings and arrests can be carried out in plain sight when they take place on the street or in other public spaces, but they can also take place in closed locations, such as in a police vehicle or a police station. Likewise, some forms of repression can also be targeted or indiscriminate, depending on the circumstances. For instance, arrests can be targeted at specific individuals in a demonstration on a one-to-one basis, but they can also happen *en masse* if large portions of demonstrators are taken away by the police without a clear discernment or selection of who is getting arrested.

Figure 3: Distribution of repressive actions based on visibility, costs, and targeting

		Technique	
		Visible	**Covert**
Targeted	**Yes**	Beatings Arrests	
		Hit by a car	Home invasion Threats
	No	Shootings Tear gas Water cannon Hit by car	Arrests

Note: Based on conceptualizations made by Gutiérrez-Sanín and Wood (2017).

Considering this combination in light of the importance of visibility (a requirement for perceiving costs and making targeting discernment possible), police beatings carry a backlash effect *when* they are visible, making the costs perceivable. But beatings are also targeted at particular individuals, which, according to my initial expectation, could make the repressive action more tolerated or justified. Ultimately, this could prevent the backlash effect of the repressive action. But conversely, we see that this is not the case, given that a visible and targeted action incites more mobilization. However, not all visible and targeted acts have this effect, since arrests do not appear to have the same impact. To make sense of this result, it is necessary to consider an additional element that can explain the backlash of repression: the public legitimacy of the repressive action.

Carrying out arrests is within the normal range of actions that police can execute. But, on the contrary, beating demonstrators is unlikely to be seen that way, especially when there are potential asymmetries of power between the police official and the demonstrator who is being attacked. As previous surveys have indicated, beating demonstrators tends to be regarded as less justifiable when compared to other forms of repression, for instance, the use of tear gas (Table D.1). Additionally, arrests do not entail high risks in terms of bodily harm, compared to police beatings. This can cause arrests to be deemed more legitimate by the public, compared to other forms of visible and targeted techniques, such as police beatings.

Della Porta (2012) identified key dimensions within the classification of repressive forms, distinguishing between "hard" and "soft" dimensions, according to the degree of force involved, and "dirty" versus "lawful", according to the degree of respect for legal and democratic procedures. Public repudiation of beatings by law enforcement officers may be an important factor explaining why this type of repression leads to more protests, especially when challengers frame repressive actions as illegitimate sanctions of dissident behavior, finding new incentives to mobilize against the system that sanctioned them (Francisco, 2004; Sullivan, Loyle, and Davenport, 2012). Even when beatings could be allegedly developed within a specific legal framework of police repression (for instance, as a self-defense technique by the police officer), it is necessary to consider the possibility that such actions do not possess the legitimacy of public opinion, compared to arrests.

On the other hand, I also hypothesized that costly repressive actions would have a deterrent effect on protests. However, forms of repression that increase protest activity can be granted as highly costly, in terms of potential physical harm, such as in the case of beatings. Conversely, other forms of costly repression, e.g., shootings of rubber bullets, do not have a mobilizing potential. This form of repression can also be granted as disproportional, especially if we consider the significant levels of morbidity and mortality from penetrative injuries and head, neck, and torso trauma, including ocular trauma, that these rubber bullets provoke (Haar et al., 2017). For the case of Chile, between October 18 and November 30, 2019, 259 patients sought medical care due to ocular trauma at the Eye Trauma Unit at Hospital Salvador, one of the biggest hospitals in the Metropolitan Region (Rodríguez et al., 2021). Nevertheless, the results of this study do not provide evidence for a mobilizing or demobilizing effect of this form of repression. This shows the importance of targeting as a factor in explaining backlash, along with its justification: wounded demonstrators by rubber bullets are usually framed as an unintended consequence, as an error by the police officer in not following the protocols, and as a misuse of the ammunition in question. This was certainly the discourse used by Piñera's government and Carabineros.

Finally, since police beatings can have devastating and arbitrary consequences, it

comes as no surprise that when these repressive tactics take place, they become part of the news cycle rather promptly, which can cause further mobilization. This added to the fact that there were neither reparations to the victims nor a robust response from Sebastian Piñera's government to deal with these abuses [13], a continuous flow of information was generated regarding the cases and the victims, which may contribute to the sustained presence of these human rights violations in the public discussion. When protesting without facing repression becomes a rare possibility, it can also affect perceptions of how much the current regime respects basic political rights. Erosion of rights and state repression can represent structural threats that intensify existing grievances and create new ones, ultimately stimulating collective action (Almeida, 2019).

External Validity

As I mentioned previously, the Chilean *Estallido Social* serves as a suitable case for studying protest dynamics and how they react to police repression. Despite the violence of police response to protests, the repressive tactics that were used fall within the standard of state coercion in democracies. The use of police batons, hand-held chemical irritants or chemical irritants launched at a distance (i.e., tear gas), kinetic impact projectiles, and water cannons, among others, are forms of repression that are categorized as "non-lethal" and are part of the United Nations (2020) guidelines on principles for the use of force. Additionally, protocols from *Carabineros* directly establish that the right to peaceful reunion without announcement nor weapons can only be restricted based on general dispositions of the police, which are part of the International Covenant on Civil and Political Rights[14] and the American Convention on Human Rights.[15] At the same time, these protocols establish that the use of force should be guided by international juridical instruments from the United Nations.[16]

Human Rights Watch (2020) recognizes abuses by security forces during the 2019 protests in Chile, identifying abuses during the process of detentions, such as brutal beatings and sexual abuse. Several other countries that experienced political turmoil during 2019-2020 also experienced similar forms of police misconduct (Amnesty

International, 2021). For instance, in the U.S. in the context of the Black Lives Matter movement, security forces also misused firearms and less lethal weapons such as tear gas, resulting in unlawful killings and injured civilians. Human rights violations also occurred in Bolivia during the post-election period in 2019, where the National Police and Armed Forces severely repressed demonstrators. In the 2017/18 report, Amnesty International (2019) also documented police restrictions against public assemblies in France and Spain, resorting to emergency measures to ban public assemblies and to restrict freedom of movement to prevent individuals from participating in demonstrations. It is clear that Chile is not an exception when it comes to police abuses against demonstrators, nor in the tools used to repress them.

Regarding the limitations of this study, it is unlikely that the results would apply to authoritarian cases or countries in danger of democratic backsliding. Despite the abuses, the Chilean national police are still under strict control of the Government, and it is an institution that, even with recent episodes of abuse and corruption, still holds legitimacy. Although there are certainly high risks for demonstrators in terms of physical harm, other forms of repressing protests such as altered court proceedings and extrajudicial killings are still exceptional cases. This could be a reason why repression does not achieve protest deterrence in the case of Chile: because there is never a sufficiently generalized and high enough risk to discourage protests.

Another limitation relates to the conceptualization of backlash as an increase in protest frequency. Confining the understanding of backlash merely to its frequency oversimplifies its intricate nature. This limited perspective overlooks the various dimensions inherent to backlash itself. For instance, it fails to encompass nuanced shifts in strategies (transitioning from nonviolent to aggressive approaches), alterations in the demographics of mobilized individuals (transitioning bystanders into active demonstrators), the endurance of mobilization efforts (the propensity of protesters to sustain their activism following repressive incidents), and also different forms of backlash, e.g. sabotage (Hager and Krakowski, 2022). As underscored by Ellefsen (2021), the scope of backlash is notably diverse, encompassing a multitude of forms and

expressions. In any case, the results from this study show valuable insights on one important type of backlash.

A final limitation is related to the difference between protest occurrence versus protest size. This paper only examines protest occurrence and finds a backlash effect. However, other studies have found that state violence generates an n-shaped correlation with subsequent protest size (Steinert-Threlkeld, Chan, and Joo, 2022). Unfortunately, I do not have information about the size of the protests, only about their occurrence. In that regard, it could be possible that the protests that emerge after episodes of state violence are fringe protests, formed by more radical groups, or that are smaller in terms of turnout. There is no way to discern that from the data that I have. Nevertheless, the results obtained here present a good starting point for analyzing the effect of different police control strategies on protests.

Conclusion

How can specific repressive actions increase the occurrence of protests when such crowd control mechanisms are supposed to do exactly the opposite? Tilly (1978) argued that state coercion increases the costs of collective action, and therefore, that repression has negative effects on mobilization. More recent studies have also shown that people engage less in street protests when their perceptions of violence and risk increase (Dave et al., 2020; Steinert-Threlkeld, Chan, and Joo, 2022). However, these findings have also been contested. In the literature on social movements, there is little consensus on whether state coercion and police repression work in preventing protest behavior, or if they backfire. Given that this association is very context-dependent, I examined how this relationship unfolds in the case of the Chilean protests that took place starting in October 2019, proposing a novel approach that distinguishes between different forms of police repression that are used in democratic regimes.

My main goal was to probe if repressive actions against demonstrators during protests inhibited or encouraged the occurrence of subsequent contentious events. Through the analysis of novel data and the use of causal inference methods, I have illustrated that, in the case of the 2019 Chilean social outburst, repression never deters protests and that, on the contrary, specific forms of repression have a backlash effect, increasing their occurrence. Particularly, police beatings of protesters are the main repressive action that has a significant impact on increasing subsequent contentious events. This result is aligned with other studies that have shown how costly forms of repression can generate outrage and increase mobilization (Khawaja, 1993; della Porta, 2013; Jasper, 2014), making individuals accept the costs that they previously had not accepted (Pearlman, 2013). My results offer new evidence about the relationship between repression and dissent, pointing to the importance of considering other dimensions of the repressive actions, such as the visibility of the repressive act, or how targeted it is, and not only costs. The literature on the effect of repression on protests has focused on costs as a factor of deterrence, or as a factor of incitement if the costs produce outrage. The results of this research show that costly repression can also produce backlash.

The devastating effect of police repression and, particularly, physical violence against demonstrators, is not exclusive to Chile or Latin American countries. There are documented cases of disproportionate use of police violence against protesters in Northern Ireland (Rocke, 1983), Palestine (Jaouni and O'shea, 1997), and France (Lartizien et al., 2019), among others. But unfortunately, the study of the consequences of repression has always been a challenge for social movements researchers: not only is data on police repression scarce and hard to get but also there are a series of endogeneity problems associated with it since the likelihood of realizing dissent is endogenous to repression and unobservable (Ritter and Conrad, 2016). I try to sort out that difficulty by accounting for spatial dynamics and short-term responses to police repression. However, some difficulties remain, such as the under-reporting of protest events. Even when ACLED data suffers from minimal underreporting when compared to protest events obtained through pictures posted in social media for the case of Chile (Steinert-Threlkeld and Joo, 2022), it would be challenging to replicate this study in other contexts, especially in countries where there is little media diversity, or where the state exerts control over media or social network sites.

In the future, it is necessary to consider a geographical perspective and to examine if there is a geographical variation in protest response to repression. Historically, conflict has had a regional development in Chile: the south is marked by the Mapuche conflict, while the center and the north are characterized by environmental issues, engaging people in conflict with both the government and private corporations. I would like to explore how geographical characteristics can affect how people respond to police violence. Additionally, I previously mentioned the relevance of more emotional reactions to state coercion, in the sense that sometimes repression generates outrage, and through such outrage, it can enhance mobilization. It would be valuable for future inquiries to explore this topic and to assess which forms of repression can generate outrage, and why. Finally, it would be interesting to examine how protest engagement could foster other types of political participation, especially considering that a constituent process is under development in Chile for the elaboration of a new

constitution, after the draft elaborated by the constitutional convention was rejected in September 2022. Given that other Latin American countries have also experienced long periods of social mobilization and unrest in the last years, a comprehensive analysis of the link between protest and political behavior in institutionalized arenas would contribute to a better theoretical understanding of the scope of the effects of contentious mobilization.

Notes

[1]According to ACLED data, we can see a remarkable increase in protest event occurrence since 2015.

[2]Along with protests increase, ACLED data also shows a big increment of violence against civilians perpetrated by state forces. Unfortunately, there are no statistics regarding violence against protesters, specifically.

[3]For instance, Earl, Soule, and McCarthy (2003) distinguished six forms of police repressive tactics through categories such as the use of physical force and use of weapons, without distinguishing the level of physical force being used, nor the type of weapon. In many cases, the availability of data makes such distinctions impossible to achieve.

[4]See Davenport (2005a) and Earl (2011) for an extensive review.

[5]Khawaja (1993) considered forms of individualized repression such as the use of tear gas, shootings, dispersion by force, and arrests, among others, and also collective punishment such as curfews, military checkpoints, and raids.

[6]This data was provided as a response to a request through Transparency Law. Attendance is calculated based on a methodology used by *Carabineros*, which considers two different counting mechanisms: for low turnout protests, the calculation is according to the assessment of the police personnel present at each event; for protests with high turnout, the calculation is based on the use of drone images and geographic function application that divides the territory into polygons based on the density of the attendees and the area in square meters.

[7]Events data sources like ACLED are sometimes criticized for their heavy reliance on media sources (Eck, 2012); however, its focus on disaggregated data on events on a specific day in an exact location is useful to obtain contextually rich conclusions (Raleigh et al., 2010). Recent research has demonstrated that, for the specific case of Chile, ACLED data works well in reporting protest events (Steinert-Threlkeld and Joo, 2022).

[8]ACLED (2019) defines protest as a public demonstration in which the participants do not engage in violence, though violence may be used against them. Conversely, riots are violent events where demonstrators or mobs engage in disruptive acts (e.g. rock-throwing, property destruction, etc.). I included both measures indistinctly since Chilean protest dynamics usually present a co-existence of them.

[9]Under-reporting is still possible, considering that not all those who were victims of police abuse decide to report and file a complaint. However, there is a certainty that the events comprised in this database did effectively occur at the time and the place that was reported.

[10]The number of effective observations is down up to 31,042 since the database is lagged by one day.

[11]Protests are more frequent during weekdays than during the weekend. Climate conditions, such as

extreme temperatures (which are likely to happen during the summer), can also deter protests and/or police activity. Given that three of the six months contained in the data are summer months, this has to be taken into account.

[12]After the third day, the lags do not present a consistent pattern, as shown in Figure B.2

[13]It was not until leftist President Gabriel Boric came to government that reparations to victims of human rights violations during the *Estallido Social* began to be implemented.

[14]Article 21.

[15]Article 15.

[16]Such as the "Code of Conduct for Law Enforcement Officials" ratified by the UN in 1979, and the "Basic Principles on the Use of Force and Firearms by Law Enforcement Officials" ratified in 1990.

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Online Supplementary Information

The Backlash Effect of State Coercion:

Protest Resilience Under Visible, Costly, and Targeted Repression

August 2023

Contents

A Data and Variables

A.1 Repressive acts during the Chilean social crisis

The repression faced by protesters during the so-called "social outburst" that took place from October 2019 to March 2020 caused great concern both in the national and international community. Reports elaborated by Amnesty International and Human Rights Watch provided valuable information regarding the police abuse and human rights violation that occurred during the initial months of protest. A longer-standing record was elaborated by the National Institute of Human Rights (*Instituto Nacional de Derechos Humanos*, INDH). The INDH is a Chilean organization founded in 2005, although officially constituted in 2010, in charge of the promotion and protection of human rights within the national territory. One of its functions is to "communicate to the government and different state organisms its opinion about situations regarding human rights inside the country", about which INDH is entitled to both request and elaborate reports.

In the context of the *social outburst*, the INDH elaborated a first report containing information from October 17 to November 30, 2019, where they systematize, describe, and analyze the serious human rights violations within this period (INDH, 2019). Intending to contribute to the clarification of the truth and obtain justice and reparation for victims of human rights violations, the INDH made available to researchers, academics, and citizens in general, a database with the information contained in the legal actions filed by the INDH to denounce the events that occurred between October 2019 and March 2020, in the context of the social crisis (INDH, 2020).

A.1.1 Conceptualizing Human Rights violations

The glossary that accompanies the database "Human Rights violations in the context of the social crisis" defines the concept of "human rights violation" as any action or omission that deprives the enjoyment of rights guaranteed, nationally or internationally, to a person or group of persons. This definition engages the responsibility of the State,

since “a State directly engages its international responsibility when its agents violate the human rights of persons under its jurisdiction”.

A.1.2 Acts denounced by victims

The database in question was elaborated by a specific department within the INDH (Studies and Memory Unit), which coded and processed the content of all the briefs filed by the INDH in courts to denounce human rights violations in the context of the social mobilizations that occurred between October 2019 and March 2020. The final product combines information from three nested sources: the victims, the judicial actions (complaints and denounces), and the actual facts denounced.

Among the acts denounced in the database, which were later recoded to create the final four types of repressive acts, are the following, along with the descriptions. Each description is a construction based on the facts reported by the victims.

1. Asphyxia: the act of being subjected to the obstruction of the respiratory tract by one or more state agents, through the use of arms, plastic bags, or other elements.
2. Attack with animals: the act of being attacked by animals acting on the orders of agents of the state, such as dogs, horses, or others.
3. Beating: the act of being assaulted by one or more state agents, either with blows of the fist, kicks, or blunt objects.
4. Breaking of telephone: the act of having one’s cell phone destroyed by state agents, preventing the detainee from communicating or recording events.
5. Burned: the act of being the object of an attack with incendiary elements by agents of the state (e.g. to bring a detained person close to a burning barricade, causing burns on purpose).
6. Detention: the act of being retained and/or transferred by State agents from one place to another. This act is coded not to declare the legality of the illegality of the act, but to leave a record of the act.
7. Denial or obstruction of medical assistance: act in which one or more agents of the state impede, interrupt, or prevent the provision of medical assistance of the transfer of the victim to a health center.
8. Destruction of personal items: the act of destruction of objects or movable property of a personal nature, by state agents.
9. Follow-up: the act of being observed, investigated, and persecuted to their homes by state agents generally dressed in civilian clothes, with unknown objectives.

10. Gassing: the act of being sprayed directly or indirectly by pepper spray and/or other chemical agents such as tear gas.

11. Hit by car: the fact of being run over by vehicles operated by law enforcement officers, either on a roadway intended for vehicular traffic or in a pedestrian traffic area.

12. Home invasion: illegal or unauthorized entry to the victim's home.

13. Irregular interrogation: the act of being questioned by state agents, in a place not determined for these purposes, and without the presence of a defense attorney (e.g. in a police car, or jail cell).

14. Shooting: the act of receiving projectiles thrown directly at the body of the demonstrators.

15. Stigmatization: the act of being the object of disparagement or belittlement by an agent of the state.

16. Stone throw: the act of receiving projectiles from stones thrown directly at the body, by agents of the state.

17. Stripping: the act of being forced by state agents to take off one's clothes, totally or partially.

18. Threat, death threat, rape threat: the act of being the object of announcements of possible physical or psychological acts of violence, possible assassination or forced disappearance, or announcements of possible sexual crimes by agents of the state.

19. Touching: the act of being subjected to forced palpation by state agents in the genital area, or other areas of sexual connotation.

20. Unauthorized entering: the irruption of agents of the state into public and/or private institutions without following protocols of previous authorization, such as schools, universities, unions, or workplaces.

21. Water impact: the act of directly receiving water thrown by the water cannons operated by state agents.

22. Wetting with chemicals: the act of spraying the victims with water mixed with chemical elements that cause burns or other injuries.

Additional acts were included in the report as a type, but they were not in the database, such as rape or introduction of objects, robbery, electrical shock, and placement of tear gas bombs on clothes.

A.1.3 Recodification of repressive acts

Water impact and wetting with chemicals were merged into the same category, home invasion, and unauthorized entering.

Table A.1: Distribution of the total of repressive actions

Repression Type	Frequency	%
Shooting	1258	45.448
Beating	956	34.538
Detention	274	9.899
Gassed	91	3.288
Water impact	47	1.698
Threats	40	1.445
Hit by a car	37	1.337
Unauthorized entry/invasion	30	1.084
Asphyxia	7	0.253
Stripping	7	0.253
Obstruction medical assistance	4	0.145
Stone throwing	4	0.145
Touching	4	0.145
Stigmatization	3	0.108
Destruction personal items	2	0.072
Follow up	2	0.072
Attack with Animals	1	0.036
Burned	1	0.036

B Models

B.1 Lagged variables

Arguably, the occurrence of protest events at time t will be influenced by previous protests and repressive acts at time t–1. In this case, we would have to deal with a dynamic stochastic process. Taking Figure B.1, I am interested in capturing the effect of repressive actions at time t–1 and their effect on protest occurrence at time t (red line). To accurately capture this, I need to include lagged specifications of both variables in the final models.

Figure B.1: DAG

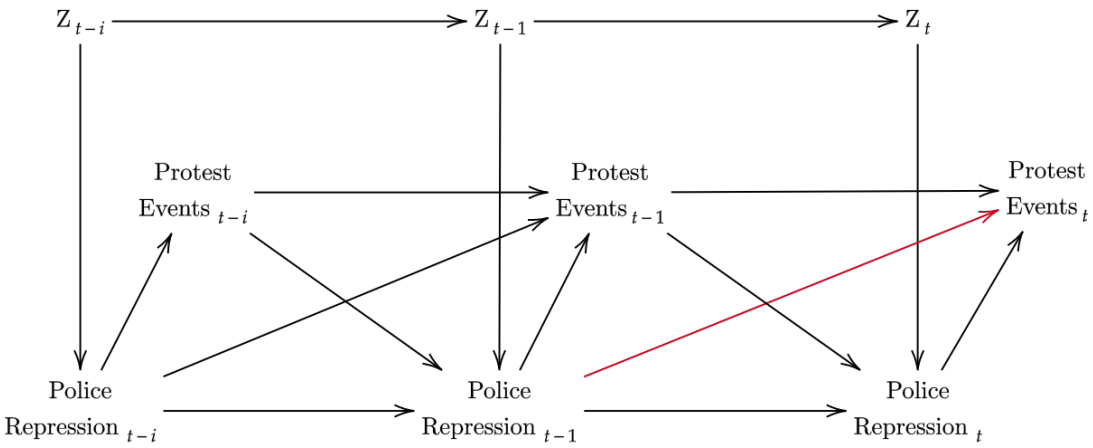

Figure B.2: Residuals vs. Lags Scatter Plot

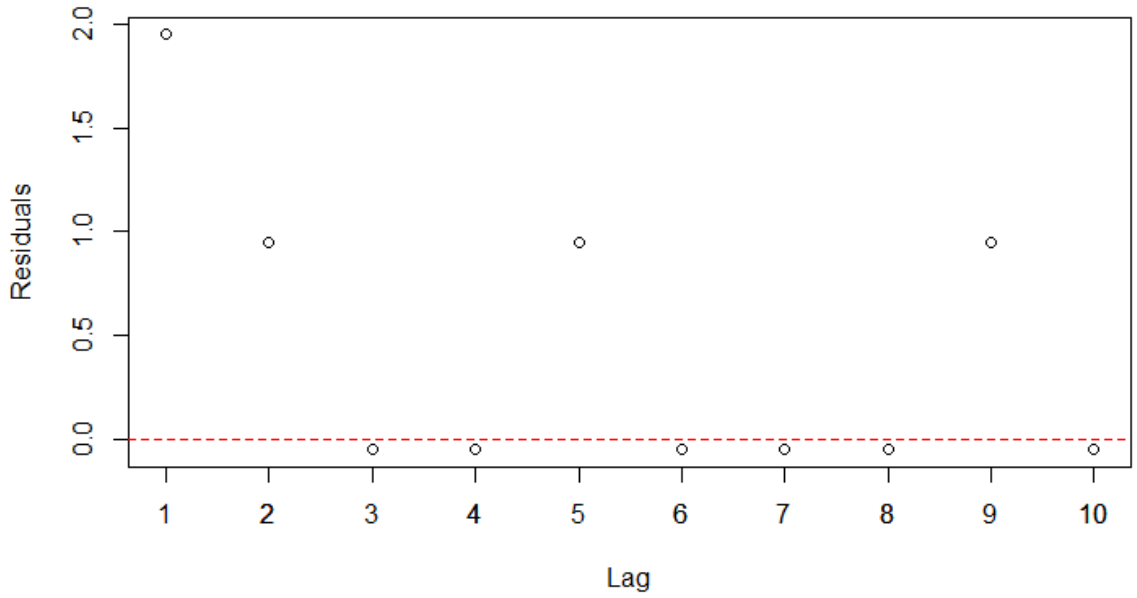

Table B.1: Zero-inflated negative binomial models with lags, fixed effects, and random effects

	Model $t-1$	Model $t-2$	Model $t-3$	Model $t-3$ FE	Model $t-3$ RE
Protest events$_{t-1}$	1.419***	1.047***	0.865***	0.402***	0.424***
	(0.042)	(0.044)	(0.045)	(0.031)	(0.032)
Shootings$_{t-1}$	0.065**	0.018	0.017	0.010	0.010
	(0.029)	(0.026)	(0.024)	(0.013)	(0.013)
Tear Gas$_{t-1}$	0.015	0.027	−0.022	0.033	0.033
	(0.095)	(0.098)	(0.113)	(0.067)	(0.069)
Water canon impact$_{t-1}$	0.283	0.213	−0.023	−0.246	−0.240
	(0.280)	(0.265)	(0.280)	(0.171)	(0.177)
Beatings$_{t-1}$	0.281***	0.185***	0.146***	0.070**	0.075**
	(0.052)	(0.050)	(0.051)	(0.032)	(0.033)
Arrests$_{t-1}$	0.198**	0.038	0.002	0.035	0.034
	(0.094)	(0.093)	(0.101)	(0.058)	(0.060)
Unauthorized entry/invasion$_{t-1}$	0.138	0.026	0.097	−0.060	−0.049
	(0.254)	(0.239)	(0.232)	(0.137)	(0.146)
Threats$_{t-1}$	0.720**	0.391	0.183	0.036	0.043
	(0.305)	(0.280)	(0.254)	(0.160)	(0.164)
Hit by a car$_{t-1}$	0.058	0.070	−0.193	−0.038	−0.043
	(0.404)	(0.388)	(0.430)	(0.259)	(0.268)
Other$_{t-1}$	0.544*	0.289	0.362	0.203	0.207
	(0.283)	(0.275)	(0.268)	(0.155)	(0.161)
Protest events$_{t-2}$		0.833***	0.602***	0.215***	0.232***
		(0.046)	(0.048)	(0.033)	(0.034)
Shootings$_{t-2}$		0.020	−0.007	−0.006	−0.006
		(0.024)	(0.026)	(0.014)	(0.015)
Tear Gas$_{t-2}$		0.078	0.069	0.071	0.073
		(0.085)	(0.081)	(0.064)	(0.066)
Water canon impact$_{t-2}$		−0.322	−0.193	−0.184	−0.180
		(0.295)	(0.284)	(0.182)	(0.187)
Beatings$_{t-2}$		0.069	0.001	−0.003	−0.002
		(0.052)	(0.053)	(0.035)	(0.036)
Arrests$_{t-2}$		0.179**	0.116	0.075	0.077
		(0.083)	(0.084)	(0.055)	(0.056)
Unauthorized entry/invasion$_{t-2}$		−0.549**	−0.466*	−0.202	−0.212
		(0.264)	(0.260)	(0.152)	(0.157)
Threats$_{t-2}$		0.335	0.095	0.144	0.143
		(0.236)	(0.233)	(0.136)	(0.142)
Hit by a car$_{t-2}$		0.751**	0.725**	0.402*	0.430*
		(0.334)	(0.332)	(0.231)	(0.238)
Other$_{t-2}$		−0.122	−0.300	−0.216	−0.222
		(0.308)	(0.325)	(0.192)	(0.197)
Protest events$_{t-3}$			0.680***	0.262***	0.281***
			(0.046)	(0.032)	(0.033)
Shootings$_{t-3}$			0.004	0.001	0.001
			(0.021)	(0.013)	(0.014)
Tear gas$_{t-3}$			−0.005	0.015	0.015
			(0.096)	(0.071)	(0.073)
Water canon impact$_{t-3}$			−0.318	−0.224	−0.228
			(0.275)	(0.189)	(0.194)
Beatings$_{t-3}$			0.057	0.015	0.018
			(0.051)	(0.034)	(0.035)
Arrests$_{t-3}$			0.073	0.066	0.067
			(0.080)	(0.056)	(0.057)
Unauthorized entry/invasion$_{t-3}$			−0.196	0.119	0.107
			(0.197)	(0.118)	(0.122)
Threats$_{t-3}$			0.440**	0.219*	0.227*
			(0.196)	(0.129)	(0.135)
Hit by a car$_{t-3}$			0.233	0.133	0.148
			(0.355)	(0.251)	(0.258)
Other$_{t-3}$			0.372	0.194	0.202
			(0.260)	(0.167)	(0.172)
Observations	30 855	30 668	30 481	30 481	30 481
R^2 Marg.	0.024	0.039	0.048	0.574	0.013
R^2 Cond.					0.224
AIC	15 071.8	14 404.4	13 812.8	12 578.8	12 755.1
BIC	15 180.1	14 596.0	14 087.5	14 402.0	13 038.1
RMSE	24.14	4.47	2.23	0.29	0.30
Fixed Effects	X	X	X	Municipality	X
Random Effects	X	X	X	X	Municipality
ICC					0.2

Note: Zero-inflated negative binomial models include lagged versions of the repressive actions, specifically the day before, two days before, and three days before the measurement of the dependent variable *protest events*$_t$. Lagged versions of the dependent variable are also included. * p < 0.1, ** p < 0.05, *** p < 0.01

Table B.2: Zero-inflated negative binomial models with lags, fixed effects, and control variables

	Model $t-1$	Model $t-2$	Model $t-3$
Protest events$_{t-1}$	1.230^{***} (0.045)	0.931^{***} (0.048)	0.768^{***} (0.048)
Shootings$_{t-1}$	0.050^{**} (0.025)	0.012 (0.024)	0.010 (0.022)
Tear Gas$_{t-1}$	0.086 (0.094)	0.084 (0.099)	0.040 (0.114)
Water canon impact$_{t-1}$	0.279 (0.258)	0.244 (0.252)	0.033 (0.263)
Beatings$_{t-1}$	0.197^{***} (0.050)	0.109^{**} (0.049)	0.077 (0.049)
Arrests$_{t-1}$	0.128 (0.089)	0.007 (0.090)	−0.018 (0.096)
Unauthorized entry/invasion$_{t-1}$	0.101 (0.244)	0.021 (0.224)	0.074 (0.219)
Threats$_{t-1}$	0.535^{**} (0.264)	0.357 (0.260)	0.174 (0.239)
Hit by a car$_{t-1}$	−0.025 (0.412)	−0.138 (0.412)	−0.502 (0.448)
Other$_{t-1}$	0.629^{**} (0.251)	0.434 (0.254)	0.450 (0.246)
Protest events$_{t-2}$		0.731^{***} (0.049)	0.559^{***} (0.051)
Shootings$_{t-2}$		0.016 (0.023)	−0.009 (0.025)
Tear Gas$_{t-2}$		0.099 (0.082)	0.090 (0.081)
Water canon impact$_{t-2}$		−0.106 (0.274)	0.064 (0.260)
Beatings$_{t-2}$		0.058 (0.051)	−0.010 (0.053)
Arrests$_{t-2}$		0.142^{*} (0.080)	0.086 (0.081)
Unauthorized entry/invasion$_{t-2}$		-0.448^{*} (0.243)	−0.378 (0.236)
Threats$_{t-2}$		0.255 (0.227)	0.084 (0.222)
Hit by a car$_{t-2}$		0.684^{**} (0.345)	0.584^{*} (0.345)
Other$_{t-2}$		−0.067 (0.282)	−0.182 (0.291)
Protest events$_{t-3}$			0.605^{***} (0.049)
Shootings$_{t-3}$			−0.006 (0.020)
Tear Gas$_{t-3}$			−0.015 (0.095)
Water canon impact$_{t-3}$			−0.218 (0.259)
Beatings$_{t-3}$			0.049 (0.049)
Arrests$_{t-3}$			0.033 (0.082)
Unauthorized entry/invasion$_{t-3}$			−0.086 (0.191)
Threats$_{t-3}$			0.345^{*} (0.190)
Hit by a car$_{t-3}$			0.251 (0.346)
Other$_{t-3}$			0.411^{*} (0.239)
Controls			
Weekday	0.460^{***} (0.063)	0.575^{***} (0.067)	0.750^{***} (0.072)
Distance to Province Capital	-0.009^{***} (0.001)	-0.008^{***} (0.001)	-0.007^{***} (0.001)
Precipitations	-0.124^{**} (0.061)	-0.121^{*} (0.062)	-0.177^{***} (0.063)
Anomalous Temperature	-0.396^{***} (0.058)	-0.322^{***} (0.059)	-0.272^{***} (0.059)
Observations	26 400	26 240	26 080
R^2 Marg.	0.053	0.080	0.099
AIC	12 521.1	12 003.2	11 509.3
BIC	12 660.1	12 223.9	11 811.6
RMSE	9.23	1.92	1.16
Fixed Effects Municipality	✓	✓	✓

Note: Zero-inflated negative binomial models include lagged versions of the repressive actions, specifically the day before, two days before, and three days before the measurement of the dependent variable *protest events*$_t$. Lagged versions of the dependent variable are also included. All models control for weekday (weekend as reference), and weather variables at the province level such as precipitations (no precipitations as reference), and anomalous temperature (1 standard deviation over the mean for that given day). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

C Robustness

Table C.1: Poisson Model and Negative Binomial Model

	Poisson Model	Negative Binomial Model
Protest events$_{t-1}$	0.379*** (0.027)	0.402*** (0.030)
Shootings$_{t-1}$	0.008 (0.010)	0.010 (0.012)
Tear Gas$_{t-1}$	0.030 (0.057)	0.033 (0.064)
Water canon impact$_{t-1}$	-0.293** (0.148)	-0.246 (0.164)
Beatings$_{t-1}$	0.065** (0.028)	0.070** (0.031)
Arrests$_{t-1}$	0.034 (0.051)	0.035 (0.056)
Unauthorized entry/invasion$_{t-1}$	-0.121 (0.106)	-0.060 (0.119)
Threats$_{t-1}$	0.028 (0.143)	0.036 (0.155)
Hit by a car$_{t-1}$	-0.018 (0.226)	-0.038 (0.255)
Other$_{t-1}$	0.210 (0.134)	0.203 (0.152)
Protest events$_{t-2}$	0.198*** (0.030)	0.215*** (0.032)
Shootings$_{t-2}$	-0.007 (0.012)	-0.006 (0.014)
Tear Gas$_{t-2}$	0.058 (0.059)	0.071 (0.063)
Water canon impact$_{t-2}$	-0.187 (0.162)	-0.184 (0.178)
Beatings$_{t-2}$	0.002 (0.031)	-0.003 (0.035)
Arrests$_{t-2}$	0.071 (0.050)	0.075 (0.054)
Unauthorized entry/invasion$_{t-2}$	-0.174 (0.132)	-0.202 (0.146)
Threats$_{t-2}$	0.159 (0.112)	0.144 (0.131)
Hit by a car$_{t-2}$	0.281 (0.200)	0.402* (0.220)
Other$_{t-2}$	-0.192 (0.172)	-0.216 (0.188)
Protest events$_{t-3}$	0.250*** (0.029)	0.262*** (0.031)
Shootings$_{t-3}$	-0.001 (0.012)	0.001 (0.013)
Tear Gas$_{t-3}$	0.008 (0.066)	0.015 (0.071)
Water canon impact$_{t-3}$	-0.194 (0.170)	-0.224 (0.187)
Beatings$_{t-3}$	0.012 (0.031)	0.015 (0.034)
Arrests$_{t-3}$	0.071 (0.050)	0.066 (0.055)
Unauthorized entry/invasion$_{t-3}$	0.160* (0.096)	0.119 (0.118)
Threats$_{t-2}$	0.191* (0.107)	0.219* (0.125)
Hit by a car$_{t-3}$	0.075 (0.223)	0.133 (0.243)
Other$_{t-3}$	0.212 (0.146)	0.195 (0.165)
Observations	30481	30481
AIC	12594.4	12576.8
BIC	14400.9	14391.6
Log.Lik.	-6080.191	-6070.410
F	23.849	
RMSE	0.29	0.29
Fixed Effects Municipality	✓	✓

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

D OLES Survey

The survey elaborated by the *Observatorio de Violencia y Legitimidad Social* is a study conducted as a part of a bigger project called Centre for Social Conflict and Cohesion Studies (COES), which develops collaborative research on issues related to social conflict and cohesion (coexistence) in Chile, through a multidisciplinary team from the social sciences and humanities.

In particular, the objectives of the OLES survey are (1) to evaluate the perceptions of legitimacy about the police *Carabineros* in the Chilean population over time, (2) to evaluate the effect of perceptions of justice on the treatment and procedures used by *Carabineros* when interacting with the citizenry, and the perception of legitimacy of the same, and (3) to evaluate the effect of the perception of legitimacy on the justification of violence, the tolerance of state violence, and the approval of repressive or punitive social control measures.

Methodologically, this study involved conducting an online panel (longitudinal) survey, considering three measurements with three months between each wave (January 2021, June 2021, and November 2021). The universe was considered to be people over 18 years of age living in Chile.

This project has the approval of the Ethics Committee of the Universidad Diego Portales. The data are available upon request.

Table D.1: Justification of *Carabineros* Violence

Variable	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
Use of tear gas	22.70 (1221)	18.52 (996)	32.18 (1731)	15.32 (824)	11.28 (607)
Use of rubber bullets	49.76 (2679)	17.37 (935)	15.23 (820)	9.68 (521)	7.97 (429)
Beat demonstrators if destroying public property	42.05 (2263)	17.95 (966)	19.64 (1057)	11.22 (604)	9.14 (492)
Beat demonstrators if resisting arrest	47.39 (2548)	19.96 (1073)	16.79 (903)	8.26 (444)	7.61 (409)
Beat demonstrators inside police vehicle	73.57 (3959)	8.77 (472)	8.33 (448)	5.58 (300)	3.75 (202)
Insult demonstrators	80.59 (4330)	6.29 (338)	6.23 (335)	4.50 (242)	2.38 (128)
Evicting students from occupied school	41.11 (2209)	17.16 (922)	21.61 (1161)	11.26 (605)	8.86 (476)

Note: Numbers in percentages, observations within parentheses. These questions are part of Module B of the survey, titled "Attitude towards *Carabineros* violence". The Module lists a series of actions linked to the main question "There are different actions that the carabineros can carry out as part of their task of maintaining order at demonstrations. To what extent do you think the following actions are justified?".

References

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