## Repressed Memories:

# State Terror and the Street Politics of Memorialization \*

Yuri M. Zhukov

School of Foreign Service Georgetown University

#### **Abstract**

Why do some victims of state repression become memorialized, while others do not? Public "places of memory," like monuments, museums and street signs, are contested political spaces, where efforts to expose and confront historical traumas clash with efforts to advance and legitimate political power. Street-level data on Stalin's Great Terror and contemporary public memorials in Moscow show that memorials to victims are most likely to appear — and are hardest to remove — in locations where repression was initially more severe. Where the cumulative death toll from repression is higher (e.g. where Soviet authorities charged multiple individuals from the same residential building or workplace for the same, usually fictitious, offense), there are generally more memorials to victims. However, the strength of this "severity effect" is not uniform. It varies by victims' ethnicity, political affiliation, and the local presence of state security services today. Larger acts of violence are harder to conceal. Yet memorialization depends not only on the supply of victims, but also on victims' identities, and the proximity of historical repression to contemporary bastions of power.

JEL Classification: D74, F51, H56, N44 Word count: 9,928

<sup>\*</sup>For helpful comments and conversations, we are grateful to Laia Balcells, Kathleen Smith, Anil Menon, Adam Scharpf, Carly Wayne, and workshop participants at the Hertie School and Princeton University.

Most victims of state repression — the use of violence and intimidation to maintain political power — are publicly unknown. By various estimates, governments killed tens of millions of their own citizens over the last century. Yet for every Fred Hampton, Jina Amini and Alexey Navalny, there are countless others who disappear into the dark of the state repressive apparatus, with no statues or commemorative plaques to remind us of their existence. Why are some victims publicly memorialized, but others are not?

Public "places of memory," like monuments, museums, and even street signs, are contested political spaces, where efforts to expose and confront historical traumas sometimes clash with efforts to advance and legitimate political power (Forest and Johnson, 2002). Political actors create and manipulate these physical structures to forge collective memories (Halbwachs, 1980), establish normative standards (Cosgrove, 1998), communicate power relations (Ross, 2009), and construct new identities around symbolic events and ideas (Gellner, 1983; Anderson, 1991). A growing empirical literature in political science and economics has shown that the creation and removal of these symbolic sites can have tangible consequences for public behavior and attitudes, influencing outcomes like electoral turnout and vote shares (Villamil and Balcells, 2021; Rozenas and Vlasenko, 2022; Turkoglu, Ditlmann and Firestone, 2023), racial resentment (Rahnama, 2023), support for restorative justice (Balcells, Palanza and Voytas, 2022), migration choices (Ferlenga, 2023), labor market differentials (Williams, 2021), and housing prices (Green et al., 2022).

Despite scholarly recognition that "places of memory" can meaningfully shape politics and society, we remain limited in our understanding of why some memorials exist while others do not. Most of the studies seeking to unpack this question have focused on the memorialization process itself, rather than on the specific historical events or figures being memorialized. For example, researchers have shown that the fate of monuments can reflect contemporary struggles for "symbolic capital" among elites (Forest and Johnson, 2002), the partisan affiliation of local officials (Núñez and Dinas, 2023), the demographics and political preferences of local residents (Benjamin et al., 2020), and macro-level structural factors like democracy and regime type (Forest and Johnson, 2011). Temporally, these sources of variation emerge well after the historical events being memorialized, and may themselves be consequences of these initial events. For example, if political violence compels

<sup>&</sup>lt;sup>1</sup>Rummel (1994); Anderton (2016)

those threatened by it to leave, we should not be surprised if the remaining residents — some of whom may have been complicit in the violence — oppose memorializing the victims.

What such analyses — particularly quantitative ones — usually overlook is how the "hard facts" of historical events (i.e. who did what to whom, when and where) shape the contestation of memorialization.<sup>2</sup> Acts of state violence vary across many dimensions, including scale, location, and selection of victims. No quantitative study, to our knowledge, has examined how this variation might shape which victims become more publicly visible.

Our theoretical point of departure is that some acts of violence are too big to hide. Memorials to victims are most likely to appear — and least likely to be denied or removed — where repression was initially more severe, in terms of cumulative human cost.<sup>3</sup> However, the strength of this "severity effect" depends on who is being memorialized and where. Memorialization more closely tracks the historical severity of repression where the costs of recognizing a victim are low, relative to the costs of suppressing the victim's memory. This dynamic favors the memorialization of certain categories of victims over others (e.g., ethnic in-groups vs. out-groups), even where the severity of repression is the same. We derive these predictions from a simple theoretical model of contested memorialization. We test them with street-level data on Stalin's Great Terror and public memorials in Moscow.

Specifically, we take advantage of the empirical opportunity presented by the Last Address (Posledniy Adres) memorial project, which since 2014 has installed hundreds of commemorative markers on buildings where victims of the Great Terror resided prior to their execution. Modeled after the Stumbling Block (Stolperstein) project commemorating Holocaust victims in Berlin, Last Address is a nongovernmental organization that receives petitions from private citizens to memorialize specific victims. To install the plaques on public streets, Last Address exploits a legal loophole, bypassing municipal authorities and securing approval directly from the owners of building facades (Veselov, 2018). The owners may approve the request (in which case Last Address installs the plaque), or they may deny or indefinitely delay it. In some cases, unknown parties remove the plaques after installation. This project provides an unprecedented chance to study "grass-roots" memorialization

<sup>&</sup>lt;sup>2</sup>For qualitative studies of memory activism in this context, see Smith (1996, 2019).

<sup>&</sup>lt;sup>3</sup>We define "severity" as the cumulative human cost of repression in a discrete geographic area (e.g. number of persons killed or arrested per building or city block).

of repression victims in an autocratic state, at a micro level.

Using declassified street maps from the Soviet secret police (National Commissariat of Internal Affairs, or NKVD) and detailed data on where the victims of the Great Terror lived prior to their arrest, we digitally reconstruct Moscow's urban landscape in the 1930s. We use these data to compare the distribution of Last Address memorials (and efforts to deny or remove them) to the number of potential victims to be memorialized at each address. Multiple estimation strategies at the levels of city blocks and individual victims, including small-area fixed effects, regression discontinuity design, and spatial autoregressive models, confirm that the number of co-arrestees at the same address (or same workplace) is a strong predictor of whether an individual's name appears on a commemorative marker. This result holds when we compare victims of the same nationality, occupation, class, party, sex and age, who lived in the same type of building in the same part of town.

While there are generally more memorials where there was more violence, the supply of victims alone cannot explain variation in memorialization. Some victims face higher barriers to recognition than others. For example, victims from locally underrepresented groups (e.g., ethnic minorities, foreign-born) may have fewer advocates in the local community. Victims politically affiliated with the repressive regime (e.g. Communist Party members) may receive low priority due to perceived culpability. Actors' willingness to advocate for (or against) memorialization also depends on the local distribution of political power (Forest and Johnson, 2011; Rozenas and Vlasenko, 2022; Núñez and Dinas, 2023). We find, for instance, that the effect of past repression is more muted on city blocks that host the offices of state security agencies and law enforcement — which may deter family members from requesting memorials, incentivize property owners to deny them, or both. This restrictive local political opportunity structure can dampen the severity effect.

We focus our inquiry on Moscow for several reasons. First are the analytical advantages of studying a single administrative area, where we can hold constant many potential confounding factors — particularly the type of repression being examined (arrests under Article 58 of the Soviet Russian criminal code, on "counter-revolutionary activity") and local laws and regulations governing the installation of monuments. Second is the inherent importance of Moscow as Russia's capital city and most populous federal subject — as Forest and Johnson (2002) note, memorialization dynamics there can have national visibil-

the country's history, and a plurality (46%) agreed that the human costs of his reign were "justified." In 2024, the General Prosecutor's office announced that it will reconsider past decisions to rehabilitate victims of Soviet repression, while the chairman of Russia's Presidential Council on Human Rights criticized Last Address for "rubbing murder in people's faces." If grass-roots memorialization can proceed against these headwinds, we can expect similar dynamics in less prohibitive political settings.

Our study contributes to several strands of scholarship. To the literature on historical legacies of violence and exploitation (Acharya, Blackwell and Sen, 2016; Lupu and Peisakhin, 2017), it casts light on memorialization as a mechanism of intergenerational transmission (Menon, 2023). We show that remembrance is not automatic, and explain why some historical events might resonate more than others. To the growing quantitative literature on "symbolic politics" (Balcells, Palanza and Voytas, 2022; Rozenas and Vlasenko, 2022), and particularly its subset on the manipulation of public symbols (Forest and Johnson, 2011; Johnson, Tipler and Camarillo, 2019; Núñez and Dinas, 2023), we contribute new evidence on an unprecedented micro-scale, showing that the placement and removal of memorials reflect an interaction between contemporary struggles for power, and the attributes of the historical events being memorialized.

Finally, our explanation for why some violent events cast a longer shadow than others should be of general interest to quantitative scholars of conflict (Davenport, 2009) and political communication (Shaver et al., 2022), who have sought to explain how the intensity (Weidmann, 2016), location and timing of violence (Hammond and Weidmann, 2014) affect its public visibility, and its inclusion in social science datasets (Eck, 2012). As we show here, higher-casualty events are indeed more visible — to journalists, data scientists, and the public, decades after they occur — but there are important exceptions to this pattern.

### 1 The Dynamics of Contested Memorialization

The scope of our study is on memorials to individual victims of state violence. This excludes collective memorials to participants of historical events (e.g. battles, massacres, famines), or members of groups (e.g. veterans, victims of massacres and famines) — unless those memorials recognize specific individuals by name. Individualized memorialization requires a more granular level of information than collective memorialization. Beyond basic personally identifiable information (e.g. name, date and place of birth), individualized memorialization typically requires documentary evidence (e.g. arrest orders, court records, personnel files) to establish one's status as a "victim," "veteran" or other memorialized category. In the case of state repression, such memorialization requires knowing not just that arrests took place, but also who was arrested and where, and presenting the paperwork to prove it.

We conceive of memorials to repression victims as products of two countervailing forces: efforts to publicly recognize specific individuals, and efforts to suppress this recognition. The agents of (counter-)memorialization need not have a personal connection to the victim — family members, activists, government officials, and many others can participate in this process. While their motivations may vary across specific cases (e.g. some may wish to honor a grandparent, others may seek to hold governments accountable, or advance a broader social narrative), actors on each side share an intermediate objective of publicly installing (or denying) an individual's memorial. This contested memorialization unfolds across small community units (e.g. city blocks, apartment buildings), differentiated by their historical exposure to repression, and the relative strength of efforts by activists on the two sides. We summarize these dynamics qualitatively below, and formally in Appendix A0.

The outcome we are seeking to explain is the number of historical markers to victims (e.g, memorial plaques) that exist in a given place and time. This number can be as low as zero, and as high as the cumulative number of repression victims who once resided in that location (severity level).<sup>4</sup> The number of markers fluctuates over time, increasing in the relative strength of efforts to recognize victims (recognition rate), and decreasing in the relative strength of efforts to suppress recognition (suppression rate). In practice,

<sup>&</sup>lt;sup>4</sup>We assume there cannot be more markers than victims. The local severity of repression determines an upper bound for memorialization, similar to the concept of "carrying capacity" in population ecology.

recognition may take the form of petitioning for the installation of a memorial plaque, and mobilizing the administrative, legal and logistical resources needed to see this process through (e.g. gathering documents, negotiating with local stakeholders, developing and installing the marker). Suppression may take the form of denying petitions, physically removing markers, or placing pressure on other local actors to do so.

Over time, this process converges to one of two equilibria: one where the number of markers remains stably above zero ("partial remembrance"), and one where no historical markers can durably exist ("complete erasure"). In any location where at least one victim had been repressed, memorials will become permanent only if recognition outpaces suppression. Otherwise, all memorials will eventually disappear. However, this erasure is not instantaneous, and some memorials do not fade easily into the dark.

A formal analysis of these equilibria (Appendix A0) yields three empirical predictions. First, there will be more memorials to victims in locations with greater exposure to repression — net of the strategies proponents and opponents of memorialization adopt. Second, the elimination of memorials will be slower in locations with more exposure to repression. At any given point in time, we should expect more memorials — and a lower share of denials and removals — where there are more victims to be memorialized. Third, and crucially, the impact of past repression is not uniform. If it were, the distribution of memorials would simply mirror the distribution of victims. Yet there is variation in how closely the volume of memorials follows the historical severity of repression. Where the suppression rate is high relative to the recognition rate, the severity effect becomes more muzzled.

Figure 1 illustrates these predictions graphically.<sup>5</sup> As the severity of repression rises, (a) the expected number of memorials to victims increases, and (b) the expected share of denials and removals decreases. The slope of each curve depends on whether suppression can keep pace with recognition. Where it cannot (low suppression-to-recognition ratio, solid lines), memorialization is more responsive to the local severity of historical violence. Where the suppression-to-recognition ratio is higher (dashed line), both curves flatten out, with fewer memorials — and a higher share of them removed — for the same number of victims.

<sup>&</sup>lt;sup>5</sup>See Appendix A0 for derivations and details.

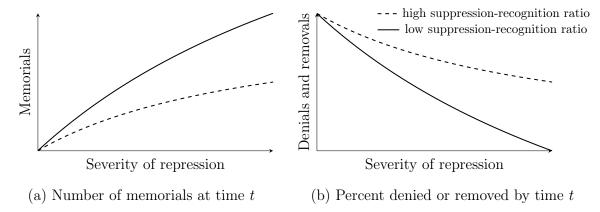


Figure 1: **Expected patterns of memorialization**. See Appendix A0 for full details on model specification, proofs, and parameter values used in numerical integration.

What drives the suppression-to-recognition ratio? We cannot observe this parameter directly, but can reasonably expect it to correlate with the costs of recognizing a particular victim in a particular place. Some individual cases are costlier to pursue than others, and resources spent memorializing one victim usually cannot be spent memorializing others. Because resources are limited, activists must be selective in their efforts. Administrative costs may be higher for certain victims, like foreign-born persons for whom documentation is more scarce, and lower for victims more deeply embedded in local social networks (e.g., with multiple ancestors and acquaintances still living in the area). Grass-roots pressure to memorialize may also be stronger in the latter case, if the community members who knew the victims wrote memoirs, petitioned for rehabilitation, and transmitted memories to new generations. These vectors of pressure may be weaker for victims from numerically underrepresented groups, like ethnic and religious minorities, with fewer community members advocating on their behalf. Some victims may be reputationally costly to recognize, like repressed members of the security services or former ruling party, due to perceptions of complicity or guilt. Others may be costly not to recognize, due to community pressure.

Opponents of memorialization face similar considerations in deciding how aggressively to push back. The cost of suppression may be lower for certain victims (e.g. foreigners and other socially-isolated persons), and higher for others (e.g. well-known public figures).

<sup>&</sup>lt;sup>6</sup>We are grateful to Kathleen Smith for this insight.

Opposition may be easier to mobilize against memorials perceived as transgressive against dominant norms or narratives, or honoring victims from marginalized social groups. The cost of suppression is lower still if memory activists can be deterred from making a petition in the first place, through a credible fear of retribution. For example, the local presence of state security services and law enforcement can contribute to a restrictive political opportunity structure, where efforts at collective action are more easily monitored, interrupted and punished. Looking ahead, memory activists may expect memorials to provoke more effective obstruction and punitive action in such areas, and shift their efforts elsewhere.

The number of historical markers in a given place and time reflects (a) the local severity of historical repression, and (b) the case-specific and location-specific incentives facing contemporary memory activists and their opponents. This argument advances existing scholarship on memorialization, which has conceptualized this process as part of an underlying political struggle between elected officials (Núñez and Dinas, 2023), their constituents (Benjamin et al., 2020), and other interested parties (Forest and Johnson, 2002). Our theory places this political struggle in the context of the historical events being memorialized, and shows how the historical severity of repression interacts with the (highly variable) desire of local political actors to promote or challenge memorialization.

## 2 The Great Terror and Its Victims

To see if our theoretical predictions align with empirical reality, we use novel individualand street-level data on memorials to Stalin-era repression victims in Moscow.

### 2.1 Background

Between the October Revolution of 1917 and the communist regime's collapse in December 1991, the Soviet Union executed, arrested, exiled or otherwise punished 12.5 to 13.7 million of its citizens for suspected political dissent (Zhemkova, 2017). This includes some 3.8 million people charged on an individual basis for alleged "counter-revolutionary" activity, and millions of victims of collective punishment, like famine, mass deportation, counter-insurgency operations, and other government-caused deaths. The vast majority of this

repression occurred under the rule of Josef Stalin (1923-1953), with a peak in 1937-1938 during a series of campaigns collectively known as the Great Terror. The Main Directorate of State Security (GUGB) within the People's Commissariat for Internal Affairs (NKVD) was the secret police agency that planned and implemented the Great Terror, on orders from the Central Executive Committee (TsIK) of the Communist Party. The agency's mission was to preserve and protect the Soviet regime, in part by investigating, arresting, punishing and deterring those who "threaten the Soviet order" (Gregory, 2009, pp. 5-6).

Every layer of Soviet society fell under the secret police microscope at some point, but authorities consistently branded several categories of citizens as "socially malign." These included individuals suspected of collaborating with foreign governments (e.g. ethnic minorities, people who studied or traveled abroad), perceived political rivals (e.g. military officers, bureaucrats, Trotskyites), "class enemies" (e.g. wealthy farmers, clergy, academics), and "social parasites" (e.g. criminals, sex workers, long-term unemployed). The document that kicked the Great Terror into high gear was NKVD Order No. 00447 ("On the operation to repress former kulaks, criminals and other anti-Soviet elements") from July 30, 1937. Order 00447 called for the "extirpation of anti-Soviet elements" on a national scale, and issued quotas for executions and prison sentences to each regional NKVD directorate.

Ultimate responsibility for identifying, investigating, detaining and interrogating suspects, and carrying out sentences, rested with NKVD branches at the district (rayon) level (RO UNKVD). There was, on average, one RO for every 60,000-70,000 citizens (Vatlin, 2004, p. 7), including one branch in each of Moscow's 23 city districts. While RO's were under intense pressure to complete their work at a fast pace, they had discretion in implementing orders. Cases under Order 00447 almost always followed — at least on paper — a standard investigative procedure, with a separate criminal case opened and specific charges filed for each arrest. However, individualized accusations did not imply selective targeting, and individualized charges were usually little more than pretext, as part of a prosecutorial strategy optimized to expedite conviction (Junge, Bonvech and Binner, 2009, p. 55).

In broad terms, the NKVD looked for signs of "counter-revolutionary activity," but what counted as "counter-revolutionary activity" was open to interpretation. Article 58 of the 1926 criminal code defined this term as "any action directed at the overthrow, sabotage or weakening of the power of worker-peasant Soviets ... or weakening of the foreign

security of the USSR and main economic, political and national achievements of the proletarian revolution" (VTsIK, 1926). This definition was broad enough to politicize ordinary criminal offenses, and to criminalize everyday administrative incompetence, negligence and mismanagement (Gregory, 2009, p. 121). Under Article 58-12, a failure to report counterrevolutionary activity was also a form of counterrevolutionary activity.

Evidence of the commission of a crime was not necessary to convict under Article 58. To keep pace with the scale of operations in 1937-1938, the NKVD modified its administrative procedures and norms, in three ways. First, investigative efforts shifted away from the collection of material evidence, and toward the extraction (usually by torture) of signed confessions. By Soviet law, a signed confession was sufficient evidence for conviction, and effectively the only piece of information needed to complete an investigation. Second, the NKVD prioritized espionage and conspiracy cases, which carried a lower evidentiary bar due to "state secrets" that by law could not be openly articulated in charging documents. Third, the NKVD increasingly relied on group arrests, processing multiple managers from the same factory, or multiple residents from the same building in a single case. These events occurred in clusters of about 10 arrests each, as RO's used lists of workers from local factories, farms and other enterprises to assemble — and then neutralize — entirely fictitious "counterrevolutionary-diversionary groups" (GARF 10035/2/23854-23857).

In one such group arrest, the RO UNKVD in Kuntsevo charged five stablehands from the town public works department with membership in an alleged "terrorist group," on the basis that horse care is evidence of counterrevolutionary leanings. This argument succeeded in obtaining a guilty verdict from a special collegium of the Moscow oblast court (GARF 10035/23043, cited in Vatlin, 2004, p. 27). All five were executed.

These mass killings allowed ROs to meet their quotas sooner, but they made state violence transparently indiscriminate. The type of information the NKVD previously used to obtain an arrest warrant (e.g. denunciations, performance reviews, evidence of foreign contacts) was now collected after the arrest, and back-dated (Vatlin, 2004, p. 34). In some cases, NKVD asked citizens to sign blank denunciation documents, promising to add specific accusations later (Vatlin, 2004, p. 49). In other cases, NKVD officers invented fictitious "informants" and "witnesses" from whole cloth (Vatlin, 2004, p. 52). These practices created a widespread perception that repression was mostly arbitrary (Conquest, 2008, 434).

In 2014, a group of Russian dissident journalists and human rights activists launched a grass-roots project, Last Address (Posledniy Adres), to memorialize the individual victims of Soviet repression. Inspired by the German Stumbling Block (Stolperstein) project, Last Address sought to place commemorative plaques listing individuals' names, professions, dates of birth, detention, death, and rehabilitation on the facades of the buildings where they last lived before their arrests (Zabalueva, 2019, 184). Anyone can petition for the installation of a commemorative plaque. Applicants pay for the cost of the plaque, while volunteers with Last Address seek consent from the owners of the facade. The project started in Moscow and St. Petersburg, and has since expanded to dozens of Russian cities.

The Last Address project is distinctive for three reasons. First, unlike state-supported memorial projects in Russia, Last Address circumvents municipal authorities by exploiting a loophole in Russian law, by which the only consent needed to install an "informational" plaque on a building is that of the facade's owner (Veselov, 2018). This relative lack of government involvement makes Last Address a rare "grass roots" effort, in a country where memorialization projects are almost always state-directed. Second, Last Address is unique in its focus on the remembrance of individual victims in separate, geographically dispersed locations, following the motto "One name. One life. One sign." This sets the project apart from collective monuments, like Moscow's "Wall of Grief" (Smith, 2019), which depersonalize the memory of state terror and focus instead on its massive scope (Zabalueva, 2019, 185). Third, the timing of the Last Address project — launched in the wake of Russia's 2014 invasion of Ukraine, and intensifying crackdown on dissent — leaves little doubt about the future fate of this project. In the context of our theory, the system appears headed toward a "complete erasure" equilibrium. This leaves a small and closing window of opportunity to investigate a "hard case," where opponents of memorialization have a clear upper hand in the local balance of political power. If our theoretical expectations find empirical support here, we can expect similar patterns in less politically restrictive environments.

#### 2.2 Data

Testing our theoretical predictions requires linking contemporary data on memorials to historical data on repression victims, and estimating the impact of the latter on the former.

We do so at two levels of analysis: (1) city blocks, and (2) individuals. A block-level analysis enables us to situate individuals within a common set of spatial units, and to evaluate how memorialization co-varies not only with the number of victims per block, but with victims as a (rough) percentage of local residents. An individual-level analysis enables us to address ecological inference concerns, and account for differences in memorialization across professions, ethnicities, age groups, sexes, and other individual-level characteristics.

Because many decades of urban development separate Stalin-era repression from contemporary memorialization, we use historical sources to reconstruct Moscow as it existed at the time of the Great Terror. Our primary data source is a tactical map of Moscow in 1938 from the NKVD's Main Directorate for Geodesic Surveying and Cartography (Krasil'nikov, 1938). The map's resolution (300 meters to one centimeter, or 1:30,000) provides sufficient topographic detail to navigate every street corner and alleyway in the Soviet Union's largest city. The map also includes information on trolley, bus, light rail, ferry and metro stops, cultural sites, parks, gardens and city district boundaries in 1938. Importantly for our needs, the map reflects the NKVD's own information set — this very same map hung on the walls of RO NKVD branches when they were planning and conducting operations.

We georeferenced the NKVD map and vectorized the polygons representing city blocks. Overall, there are 5,400 city blocks in this dataset, including 1,646 (30%) in neighboring settlements that had not (yet) been incorporated into the city proper (e.g. Davydkovo, Kuntsevo). We classified the blocks by zoning with information from Memorial's "Topography of Terror" (topos.memo.ru) project and supplementary sources. We identified 4,897 (91%) blocks with residential buildings, including 3,305 (88%) within city limits.

Our data source for exposure to repression is *Memorial*'s "Victims of State Terror in Moscow" database (mos.memo.ru), which contains the names, residential addresses and biographical information for 11,035 Moscow residents executed by the secret police between 1921 and 1953, including 9,526 in 1936-1938. The *Memorial* database represents the population of cases from which *Last Address* petitions are drawn, due to organizational links between the projects, and *Last Address*' focus on victims who were executed, not incarcerated. We geocoded victims' residential addresses at time of their arrest.

<sup>&</sup>lt;sup>7</sup>Until its liquidation in 2021, *Memorial* was an organizational partner of *Last Address*. *Last Address* still uses the *Memorial* dataset in its work, to (1) factually validate petitions, and (2) in cases when

Figure 2a shows 5,400 city blocks in Moscow, as rendered on the digitized 1938 NKVD map of the city. Figure 2b shows the last known street addresses of 11,035 local residents, whom the NKVD executed between 1936 and 1938. Most of the NKVD's victims lived in the city's historic center, inside the so-called Garden Ring — one of Moscow's several concentric ring roads. This is where the city's population was densest, prior to Moscow's expansion and the mass construction of apartment blocks in the 1950s and 1960s. Most residents lived in low-rise communal flats, with two or more families sharing one apartment.

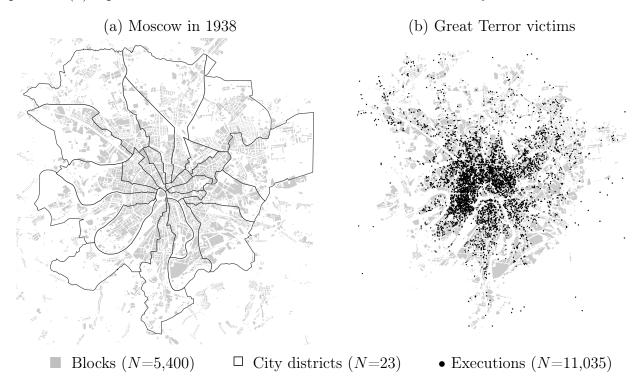
We extracted data on memorials from the *Last Address* website (poslednyadres.ru), which contains information on the name, address, date, geographic coordinates, and status (requested, installed, denied) of commemorative plaques in Moscow, among other cities. We supplemented this information with press reports of illegal plaque removals. Within Moscow's 1938 city limits, we identified 1,292 petitions to install plaques, 610 (47%) of which resulted in approval and installation, and the remainder of which resulted in a denial (17, 1%), removal (39, 3%) or no response from facade owners (626, 48%). Because formal denials and physical removals are less common than simply ignoring petitions, we combine the latter three bins into a general "denial/removal" category for our analyses.

To account for additional variation in repression and memorialization, we supplemented these data with information on the borders of Moscow's city districts (rayony). The district boundaries (Krasil'nikov, 1938), which remained in place from 1936 to 1960, reflect the territorial-jurisdictional organization of RO NKVD branches. They also allow us to link our data to district-level population counts from the Soviet Census (Central Statistical Directorate of USSR, 1939). Because official block-level population statistics are unavailable, we disaggregated district population counts through dasymetric spatial interpolation (Mennis, 2003), which employs ancillary data to obtain filtered area-weighted local estimates.<sup>8</sup>

donations arrive without naming a specific person, to select individuals for memorialization.

<sup>&</sup>lt;sup>8</sup>Dasymetric interpolation loosens the uniformity assumption of traditional area-weighted interpolation, by excluding non-residential blocks, parks, roadways, and other uninhabitable areas from local estimates.

Figure 2: **Spatial distribution of data**. Each polygon in (a) represents a city block. Each point in (b) represents the last known address of a citizen executed by the NKVD.



To account for the local administrative costs of repression, we collected data on the locations of RO NKVD branches and other organs of state security (Krasil'nikov 1938, topos.memo.ru). As the RO's raced to meet their repression targets, the need to follow bureaucratic procedures constrained their actions — at least nominally. These procedures had been greatly simplified by the late 1930s, but officers still had to hand-deliver sensitive documents, interface with prosecutors and party officials, physically find and apprehend suspects, and transport them to local holding facilities for processing and interrogation.

We identified 32 physical NKVD facilities in Moscow, including a branch in each city district, several detention centers and other administrative buildings. These facilities tended to be located close to the nearest prosecutor's office and Communist party office. Across the city, the average "intra-Troika distance" (i.e. distance from residential block to nearest NKVD branch, plus the distance from that NKVD branch to its nearest prosecutor and

party offices) was two kilometers. These travel and coordination costs were predictive of the local scale of repression. In blocks with a below-mean "intra-Troika distance" (i.e. under two kilometers), the NKVD executed 4.9 people, on average. In blocks with an above-mean distance, they executed 1 person, on average. Muscovites' chances of surviving the Terror depended, in part, on how costly it was for security services to reach and process them.

## 3 Memorialization and the Severity of Repression

We test our theory in two steps. We first test the two "severity" predictions, which expect more commemorative markers — and lower rates of denial and removal — in locations more heavily exposed to repression. In Section 4, we test the "non-uniformity" prediction, which expects the strength of the severity effect to depend on victim identity and location.

#### 3.1 Variation Across City Blocks

We begin with a "big picture" look at memorialization, by examining variation across the full population of residential city blocks that existed in Moscow during the Great Terror. Our block-level analyses revolve around the following core model specification:

$$y_i = g^{-1} \left( \gamma \cdot \log(\text{Repression}_i) + \beta' \mathbf{X}_i + \text{District}_{k[i]} + \text{Zoning}_i + f(\text{Long}_i, \text{Lat}_i) + \epsilon_i \right)$$
 (1)

where  $y_i$  is the memorialization outcome in block i (e.g. logged number of petitions for commemorative markers, percent denied or removed) and Repression<sub>i</sub> is the number of block residents whom the NKVD executed in the 1930s.  $\mathbf{X}_i$  contains location-specific covariates capturing the logistical costs of repression, including the distance from i to the nearest NKVD branch, and from that NKVD branch to its nearest prosecutor and party offices ("intra-Troika distance"). To account for differences across RO NKVD jurisdictional lines, we include fixed effects for the city district k in which block i was located in 1936-1938. Because memorialization may face different obstacles on mixed-use city blocks, where residential properties share space with commercial, cultural, or government facilities, we include fixed effects for zoning. To capture local, within-district geographic trends, we include a spatial spline,  $f(\text{Long}_i, \text{Lat}_i)$ .  $g(\cdot)$  is a link function.

Table 1 reports coefficient estimates for the block-level models. The first two columns correspond to linear regression models, where the outcomes are (1) the number of petitions per city block and (2) the percent of these petitions that resulted in denials or removals. These models use an identity link function with log-transformed outcomes (to reduce skewness). The third column corresponds to a Binomial model with a logit link, where the outcome is re-scaled as the proportion of petitions that resulted in denial or removal. Because measurement of proportional variables is more precise where the denominator is large, we weight observations by estimated block population size (see Appendix A1).

The estimates in Table 1 align with theoretical expectations. According to columns 1 and 2, for each percentage-point increase in repression, there will be a 0.3 percentage point rise in petitions on the same city block, and a 10.6 percentage point decline in the share of these petitions that result in denial or removal. Column 3 further reports that doubling exposure to repression is associated with a 46 percentage point decline in the odds of denial or removal (i.e., coefficient implies a change in odds by a factor of  $2^{-0.88} = 0.54$ ).

Outcome	Petitions	Denied/Removed (%)	
Model	1. Linear	2. Linear	3. Binomial
Estimate Std. error	0.3 (0.04)**	-10.56 (2.35)**	-0.88 (0.22)**
Rayon FE	$\checkmark$	$\checkmark$	$\checkmark$
Zoning FE	$\checkmark$	$\checkmark$	$\checkmark$
$Adj. R^2$	0.54	0.31	
Pseudo $\mathbb{R}^2$			0.48
RMSE	16.51	1283.51	0.25
N	3305	1191	1191

Estimates from Linear and Binomial fixed effect regression models. Treatment is number of city block residents executed (logged). Outcome is log-transformed in Linear model, rescaled as proportion between 0 and 1 in Binomial model. Robust standard errors in parentheses, clustered by rayon. All models include spatial spline and block-level covariates. Observations (blocks) weighted by population size. Significance levels (two-tailed):  $^{\dagger}p < 0.1$ ;  $^{\ast}p < 0.05$ ;  $^{\ast}p < 0.01$ .

Table 1: Severity of repression and memorialization.

<sup>&</sup>lt;sup>9</sup>We estimate models 2 and 3 on a subsample of city blocks with at least one petition.

These results withstand multiple robustness tests and supplementary analyses (Appendix A2), including (a) conditional and spatially autoregressive models, to further account for non-independence of observations and to test whether proximity to early markers inspire others in the neighborhood to apply, (b) a fuzzy regression discontinuity design that exploits exogenous variation in repression levels across the boundaries of neighboring NKVD jurisdictions, and (c) re-estimation with a per-capita measure of repression. In all cases, estimates retain their signs and levels of significance.

#### 3.2 Variation Across Individual Victims

Zooming in for a closer look, we examine variation in memorialization across individual victims. These analyses employ the following specification:

$$y_j = g^{-1} \left( \gamma \cdot \log(\text{Repression}_j) + \beta' \mathbf{X}_j + \text{District}_{k[j]} + \text{Zoning}_{i[j]} + \text{Nationality}_j + \text{Industry}_j + \epsilon_j \right)$$
(2)

where  $y_j$  is the memorialization outcome for victim j (petition, denied or removed) and Repression<sub>j</sub> is the number of other victims who shared an address ("repression at home") or an employer ("repression at work") with victim j.<sup>10</sup>  $\mathbf{X}_j$  includes basic biographic information like j's sex, age, party membership, association with the clergy, military, and whether j held a managerial post at their place of work. To account for differential rates of memorialization and repression across socio-economic groups, we include fixed effects for j's nationality and industry of employment.<sup>11</sup> As before, we include fixed effects for district and zoning.

Individual-level estimates align with theoretical expectations. Figure 3 reports predicted probabilities of petition and denial/removal, as a function of repression levels at j's home address. As Figure 3a illustrates, the probability of a petition is 0.05 for "solitary" victims (i.e. zero neighbors executed), and 0.15 for those with 242 victimized neighbors (the maximum observed number in the data). The magnitude of the statistical relationship is larger for denials and removals. In Figure 3b, the probability of denial or removal is 0.82

<sup>&</sup>lt;sup>10</sup>We fit separate models for repression in the two contexts (domestic and workplace).

<sup>&</sup>lt;sup>11</sup>We used industry classifications from the All-Union Classifier of Economy Branches (OKONKh).

<sup>&</sup>lt;sup>12</sup>Full set of coefficient estimates is in Appendix A3.

for "solitary" victims and 0.10 for those with the maximum number of executed neighbors.

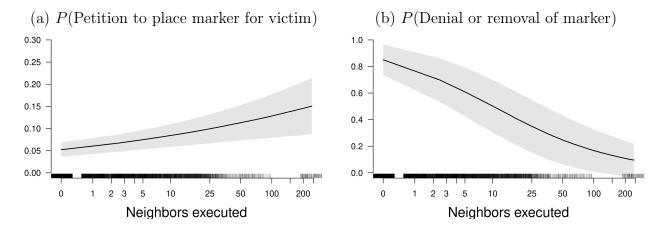


Figure 3: Repression at home and victim's memorialization. Black lines are predicted probabilities from the individual-level model in equation (2); grey regions are bootstrapped 95% confidence intervals. Horizontal axis on logarithmic scale.

The NKVD conducted group arrests not only in residential buildings, but also in the workplace. Figure 4 presents a separate set of model predictions, showing how one's chances of memorialization vary with the severity of repression against one's co-workers.<sup>13</sup> These patterns are consistent with those in Figure 3. Victims of mass workplace arrests have a significantly higher predicted probability of petition than "solitary" victims (0.29 for the maximum of 96 co-workers executed and 0.04 for 0 co-workers executed). The impact on denials and removals is weaker than for residential repression, but still negative.

<sup>&</sup>lt;sup>13</sup>"Co-workers" are individuals with a common employer, per Memorial.

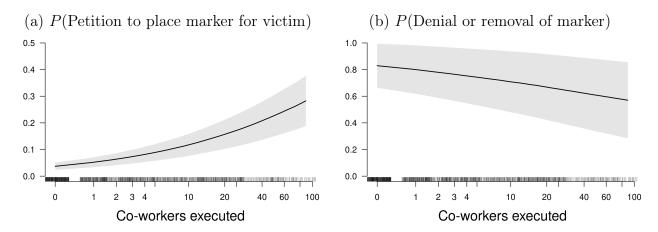


Figure 4: Repression at work and memorialization. See note under Figure 3 for details.

### 4 Obstacles to Memorialization

Our theoretical argument holds that the historical severity of repression will impact memorialization dynamics more strongly where recognition outpaces suppression, and more weakly where suppression and recognition approach parity. We cannot observe these parameters directly, but can consider how the estimated severity effect varies across hypothetical scenarios where the suppression-to-recognition ratio is likely to be relatively high or low. First, we might expect this ratio to be higher (and the severity effect to be weaker) for victims from ethnic and religious out-groups, potentially due to under-representation among memorialization activists. Second, the ratio may be higher for victims politically affiliated with the repressive regime (i.e. Communist Party members), whom citizens may perceive as targets of an internal purge, rather than chance victims of indiscriminate state violence. Third, the ratio should be higher in communities where the political opportunity structure favors opponents of memorialization — where the presence of state security services or other government agencies deters petitions and incentivizes denials and removals.

### 4.1 Victim Identity

The Great Terror disproportionately targeted minorities. While ethnic Russians represented 87% of Moscow's population in the 1939 census, they account for 44% of the city's repression victims during the Great Terror. The remaining victims include Jews (19%), Latvians (10%), Poles (8%), Germans (4%), Ukrainians (3%), Belarusians (3%), Hungarians, Armenians, Estonians, Lithuanians, Chinese (1% each), and representatives of 56 other groups (less than 1% each). We each each each each individuals identities are more aligned with those of the local population (Benjamin et al., 2020). In line with past research, we expect the suppression-to-recognition ratio to be higher—and the severity of repression to have a weaker impact on petitions, denials and removals—for non-Russian victims.

To test this possibility, we expanded the individual-level model specification in equation (2) to include the interaction term  $\log(\text{Repression}_j) \times \mathbb{1}\{\text{Nationality}_j = \text{``Russian''}\}$ , where  $\text{Repression}_j$  is the number of repression victims who shared an address with victim j and the second term is an indicator equal to 1 if j's nationality is Russian and 0 otherwise.

Figure 5 reports simulations from this expanded model, for Russian (solid line) and non-Russian victims (dashed line). Figure 5a confirms that the severity effect is stronger for ethnic Russians. The probability of a petition is 0.05 for "solitary" Russian victims and 0.20 for Russian victims with the maximum observed number of victimized neighbors. For non-Russian victims, the fitted curve is lower and flatter, rising from 0.02 to 0.04. Figure 5b reveals a similar pattern for denials and removals. For Russians this probability drops from 0.89 to 0.05; for non-Russians this curve is flatter and higher, ranging from 0.91 to 0.43. Memorials to non-Russian victims are less common and less durable, and their chances of memorialization are less sensitive to the severity of local repression. We find similar patters for foreign-born victims of the Great Terror (Appendix A3).

<sup>&</sup>lt;sup>14</sup>Statistics from Memorial's *Victims of State Terror in Moscow* database.

<sup>&</sup>lt;sup>15</sup>We define "foreign born" individuals as those born outside the original (1922) borders of the USSR.

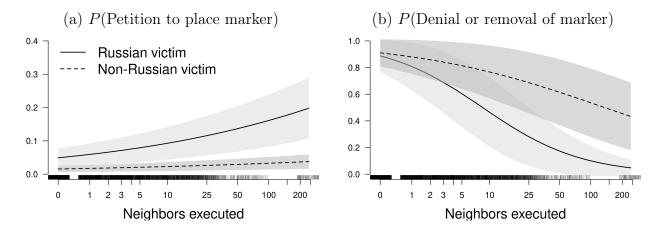


Figure 5: Ethnicity and victim's probability of memorialization. Solid and dashed lines represent point estimates for ethnically Russian and non-Russian victims, respectively; grey regions are bootstrapped 95% confidence intervals from 1000 simulations.

#### 4.2 Victim Political Affiliation

The Great Terror originated as an internal party purge, targeting potential political rivals to Stalin within the All-Union Communist Party (Bolsheviks) (VKP(b)). However, most victims in Moscow (55%) had no known party affiliation. Past research has consistently shown that individuals respond differently to violence that they perceive as selective (i.e. conditional on the target's behavior) versus indiscriminate (i.e. applied regardless of target's behavior) — with the latter case provoking a stronger attitudinal backlash (Lyall, Blair and Imai, 2013; Benmelech, Berrebi and Klor, 2015). While most criminal charges against VKP(b) members were fabricated, just as they were for others, activists may see some of these victims as political insiders (targeted "selectively"), not as ordinary citizens (targeted indiscriminately). We expect the suppression-to-recognition ratio to be higher — and the severity effect to be weaker — for victims who were members of the VKP(b).

The data generally align with this expectation. Figure 6 reports simulation results from an expansion of the individual-level model (2), interacting repression of a victim's neighbors

<sup>&</sup>lt;sup>16</sup>Last Address explicitly rejects petitions for individuals who played an active role in repression. Installation of a marker requires: (1) formal rehabilitation of the victim, and (2) "absence of documentary evidence that the repressed person was an active organizer of mass political repression."

with victim's VKP(b) membership.<sup>17</sup> Party members' probability of petition is generally lower and less responsive to the local severity of repression, rising from 0.06 (solitary victims) to 0.09 (maximum), compared to 0.04 to 0.25 for non-members. The predicted probability of denial or removal for VKP(b) members is also less sensitive to repression severity — ranging from 0.81 to 0.29, compared to 0.87 to 0.05 for non-members. We find similar patterns with an expanded measure of party affiliation, which includes VKP(b) candidates and members of the party's youth wing (Appendix A3).

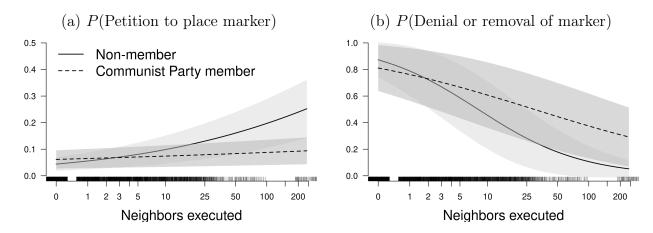


Figure 6: Party membership and victim's memorialization. Solid and dashed lines represent point estimates for victims without and with VKP(b) membership.

### 4.3 Local Political Opportunity Structure

A third potential barrier to memorializing victims is a fear of retribution — against those who write petitions requesting such memorials, and against those who are reluctant to deny or remove them. Past research on social movements and repression has sought to identify conditions — "political opportunity structures" — that constrain or facilitate collective action (Kitschelt, 1986; McAdam, 1982, 1986). While definitions of political opportunity structures vary, a common thread is the perceived deterrent capacity of the state, and particularly its perceived potential for renewed repression (Gleditsch and Ruggeri, 2010;

<sup>&</sup>lt;sup>17</sup>Formally, the interaction term is  $\log(\text{Repression}_j) \times \text{PartyMember}_j$ , where  $\text{PartyMember}_j$  is equal to 1 if j was a VKP(b) member at the time of arrest, and 0 otherwise.

Rozenas and Zhukov, 2019). While much of the literature has focused on macro-level variation in this retributive threat over time and space, our research question necessitates a focus on local sources of variation, like the physical presence or geographic proximity of government agencies. This includes state security services, law enforcement, and any other public administration entities capable of imposing political, economic or legal pressure on citizens. We expect the suppression-to-recognition ratio to be higher — and the severity effect to be weaker — where such agencies are visibly present.

We used Bureau van Dijk's Orbis database to identify entities with industry codes corresponding to state security services (NACE codes 8422-8424). There are 579 such entities within the city of Moscow, which were active in the time period overlapping with the Last Address project. This includes 282 entities marked as "public order and safety" (e.g. Federal Security Service, Ministry of Internal Affairs, and local branches), 195 judicial entities (e.g. courts, Ministry of Justice), and 102 defense entities (e.g. military units, recruitment stations). We matched these entities to city blocks by address, and expanded the model in equation (1) to include the interaction  $\log(\text{Repression}_i) \times \text{StateSecurity}_i$ , where StateSecurity<sub>i</sub> is equal to 1 if at least one such entity is currently located on city block i.

The simulation results in Figure 7 show that the presence of public order and safety institutions suppresses the local severity effect. Consistent with our theory, the historical severity of local repression increases the predicted probability of petitions more for victims who resided on blocks without government agencies (solid line), than on blocks with at least one state security agency (dashed line). The heterogeneity is less pronounced for denials and removals, although the dashed line is flatter. We find similar results when we expand the set of government agencies to include courts and the military (Appendix A3).

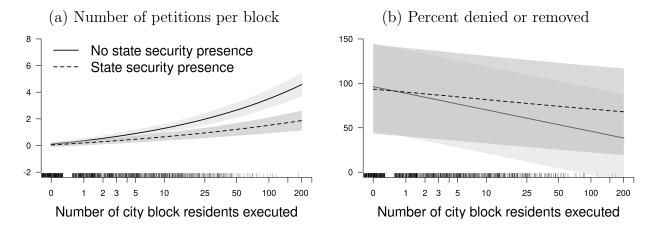


Figure 7: State security agency presence and memorialization. Solid and dashed lines represent point estimates for city blocks with no vs. at least one state security agency, respectively; grey regions are bootstrapped 95% confidence intervals from 1000 simulations.

### 5 Repressed Memories

Are there more memorials where there are more people and events to be memorialized? In the case of repression memorials in Moscow, the answer is "it depends."

Some acts of state violence are too big to hide. Micro-level data on the memorialization of Stalin's Great Terror suggest that memorials to individual victims are more likely to appear, and less likely to disappear, in locations where the NKVD executed more people from the same address or workplace. Our theoretical model shows that this pattern holds irrespective of the relative power of contemporary political actors to advance or suppress memorials. It should hold even where opponents of memorialization are on track to prevail and ultimately eliminate all memorials to victims. The path to this "complete erasure" equilibrium is longer and costlier where the set of individuals to potentially be memorialized is large. Our empirical analysis indicates that this may be the case in Moscow today.

At the same time, this "severity effect" does not extend to all victims equally. The effect is stronger for ethnic Russians and native-born persons than for victims from minority groups and foreign-born individuals. It is similarly weaker for victims who were Communist Party members and in locations where a local state security presence may deter petitions.

We interpret this heterogeneity as indicative of selective allocation of limited resources by memory activists and their opponents, prioritizing cases that are less costly to pursue.

Beyond these inequities, our findings suggest that efforts to expedite and reduce the administrative costs of repression (for example, by arresting multiple individuals from the same factory or building for the same fictitious crime) can have the unintended effect of making victims harder to forget. For example, the NKVD executed 20 residents of 37 Pokrovka street. These victims included one ethnic Pole, two Ukrainians, six Jews and 11 Russians, ranging in age from 47 to 60. All but one were male. The main thing these victims had in common, besides their address and age group, was that half of them worked in the same industry, including five at the same cooperative association (Artel' "Tekhnokhimik"). Their cases bear all the hallmarks of the NKVD's mass arrest strategy—the "Tekhnokhimik" workers were prosecuted together, and four of them were executed on the same day, March 3, 1938. The remaining worker, the only one in a management position, survived slightly longer, until June 3, 1938. As of today, this building has received five petitions for commemorative plaques, with no denials or removals (so far).

To take another example, the NKVD executed 23 people from 15 Chaplygina street—all males aged 47 to 65, with a similar ethnic breakdown. These victims included 10 workers from the same industry and five from the same enterprise (Artel' "Poligraftrud")—all of whom were processed together and executed on the same day, February 28, 1938. At the time of writing, the building has received three petitions, with no denials or removals.

In each instance, at least one of the petitions was to commemorate a victim from the group cases of "Tekhnokhimik" and "Poligraftrud," and the remainder commemorated other residents of the building. Yet a closer look suggests that very few of these executions were independent, one-off events. Besides the five "Technokhimik" workers, three victims at 37 Pokrovka street were "Poligraftrud" employees, executed on the same day as their co-workers from 15 Chaplygina. Another two victims in each building worked for a third cooperative, Artel' "Khimkraska." The NKVD executed one "Khimkraska" worker on February 28 (same day as the "Poligraftrud" workers from 15 Chaplygina) and another on March 7 (same day as the "Tekhnokhimik" workers from 37 Pokrovka). These examples illustrate the NKVD's efforts to draw connections between cases (usually through residential or workplace association), to simplify paperwork, expedite sentencing, and meet quotas.

While street-level evidence from Moscow strongly supports the view that larger-scale state violence casts a longer, more indelible shadow in a city's collective memory, our analysis also raises new questions, which future research will need to more directly confront. First and foremost is the question of generalizability. The same factors that make Moscow stand out — its capital city status, the scale of its historical repression, its increasingly inhospitable political environment, the unique (and fleeting) opportunity presented by *Last Address* — make broader conclusions more difficult to draw. While we can assert with some confidence that Moscow is a "hard case" due to the political barriers facing memorialization there, how far our results travel beyond its streets is an open empirical question.

Second, there is much we still do not know about the data-generating process that drives repression, particularly as regards the interdependence of individual cases. Our paper did not seek to model this process directly, given our focus on consequences rather than drivers of repression. Yet the NKVD's mass arrest strategy, by design, sought to forge connections between cases, creating networks of interdependence that may carry over to the memorialization process. Our results are robust to specifications that account for autocorrelation between geographically proximate locations and fixed differences across jurisdictions, but the structure of interdependence may be more complex than these models assume.

Third, perpetrators can be subjects of memorialization, too. Alongside the *Last Address* project, Russia has seen concerted state and private efforts to rehabilitate the image of Josef Stalin and the NKVD, in part through the installation of monuments. In the context of our theory, we can view these efforts as a more aggressive version of counter-memorialization, which can potentially help us uncover equilibria beyond "remembrance" and "erasure."

A related question is that of purges within the security services themselves, which blur the line between perpetrators and victims. For example, the NKVD executed 19 people from 20 Pokrovka street (just a few blocks from 37 Pokrovka). Of these, at least 18 were NKVD officers, seven of whom were executed together on August 25, 1938. The same strategy of group arrests that applied to the repression of civilians extended to internal purges. Whether the same logic of memorialization applies here as to other victims is less clear. Despite the high toll, 20 Pokrovka has received no petitions and hosts no plaques. Commemorating these individuals requires first acknowledging their status as victims, which neither the critics nor the apologists of Stalin's Great Terror seem eager to do.

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