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**DICTATORS, REPRESSION AND THE  
MEDIAN CITIZEN: AN “ELIMINATIONS  
MODEL” OF STALIN’S TERROR  
(DATA FROM THE NKVD ARCHIVES)**

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*PUBLIC POLICY and  
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# **Dictators, Repression and the Median Citizen: An “Eliminations Model” of Stalin’s Terror (Data from the NKVD Archives)**

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## ABSTRACT

### Dictators, Repression and the Median Citizen: An “Eliminations Model” of Stalin’s Terror (Data from the NKVD Archives)

This paper sheds light on dictatorial behaviour as exemplified by the mass terror campaigns of Stalin. Dictatorships – unlike democracies where politicians choose platforms in view of voter preferences – may attempt to trim their constituency and thus ensure regime survival via the large scale elimination of citizens. We formalize this idea in a simple model and use it to examine Stalin’s three large scale terror campaigns with data from the NKVD state archives that are accessible after more than 60 years of secrecy. Our model traces the stylized facts of Stalin’s terror and identifies parameters such as the ability to correctly identify regime enemies, the actual or perceived number of enemies in the population, and how secure the dictator’s power base is, as crucial for the patterns and scale of repression.

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## **NON-TECHNICAL SUMMARY**

# 1 Introduction

Stalin’s killing and imprisonment of millions of Soviet citizens are cited as an irrational acts attributed by psychiatrists to paranoia or worse mental illness (Rancour-Lafferiere, 2004), to his violent Caucasus upbringing (Baberowski, 2005), or to other idiosyncratic factors that render the deaths of millions a “historical accident.” If dictatorial behavior, such as this, is the consequence of personality quirks, historical accidents, or mental illness, further economic investigation is closed off. Such subject matter would be the stuff for historians; economists are interested in motivations that are general (“Stalin killed millions because he thought it would secure his regime”) rather than idiosyncratic (“Stalin killed millions because he was crazy”) (Harrison, 2006).

In this paper, we propose a dictator’s “elimination model” that explicitly captures a striking feature of brutal dictatorships: Unlike democracies, where politicians adjust policies to the median voter to be elected, brutal dictators adjust their constituency by eliminating citizens who are in opposition to the regime. Research on these issues has previously been hindered by the lack of access to data. The facts of Stalin’s mass terror campaigns against the general population were earlier hidden behind a veil of secrecy. In fact, many associate the Great Terror only with Stalin’s decimation of the party elite. However the facts of mass repressions have been revealed in great detail with the opening of the Soviet state and party archives starting in the 1990s. The planning of terror campaigns, it seems, was like the planning of goods and services, although the “product” was different – executions and imprisonments of political enemies versus the production of goods and services. Those charged with fulfilling plans, industrial managers, in the case of economic plans, and the OGPU or NKVD, in the case of terror plans, were judged on the basis of fulfillment of plan “limits”.<sup>1</sup> These archival data – despite the horrible reality behind the numbers – contain a wealth of information and thus the unique opportunity to research the inner workings and logic of dictatorships.

A trimming of the constituency by a dictator can either occur via physical eliminations (execution, imprisonment or exile) or legal (disenfranchisement of voters or candidates). Our data and model primarily covers physical eliminations. Furthermore, within the model we assume that the dictator may choose to act once the share of enemies in the population exceeds some critical limit at which he will be (or believes to be) subject to overthrow. Although this approach might seem, at first glance, exotic or even bizarre, it follows a tradition of modeling dictators, beginning with Hayek’s brutal dictator (1944), Olson’s (1995) pro-growth stationary bandit, and Wintrobe’s (1990) cursed dictator. Our model’s intellectual predecessors are Glaeser and Shleifer’s (2005) electorate remolding through targeted transfers (The “Curley Effect”) and Acemoglu and Robinson’s (2006) dictatorial revolution constraint.

The contribution of our paper is twofold. Firstly, it provides a concise and archival data based account of Stalin’s three large scale terror campaigns directed against his own citizens occurring between 1930-1940. We distill the stylized facts of dictatorial repression from these data. Secondly, the paper proposes a simple “eliminations” model and applies it to the stylized facts of Stalin’s mass repressions. We ask whether a relatively simple model – a dictator eliminating enemies in order to not exceed a certain revolution constraint – explains (or is consistent with) stylized historical facts. In doing this the present paper puts aside issues of morality. Con-

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<sup>1</sup>The OGPU was formed in 1921 as the successor to the first Bolshevik secret police, the Cheka, created by Lenin in the first days of Bolshevik rule. The OGPU denotes the “United Main Political Administration”. The OGPU was folded into the NKVD (Peoples Commissariat of Internal Affairs) in July 1934. The OGPU was responsible for the execution of repression campaigns in the early 1930s. The NKVD and its successor the MVD, conducted repressions from 1934 until Stalin’s death in March of 1953.

demnation of a dictator’s lack of morality does not really further understanding of dictatorial systems as such. Stalin’s routine arrests of spouses and siblings of his closest associates were immoral,<sup>2</sup> but, for a dictator who requires absolute loyalty, loyal service after such arrests was the ultimate test. Stalin’s deputy, V.M. Molotov, at first refused to vote for his wife’s arrest, but belatedly gave in.<sup>3</sup> Lazar Kaganovich, Stalin’s other deputy, responded to his brother’s arrest by saying it was not any of his business. But the fact that brutal repression of own citizens repeat in history and appear to be linked to specific types of economic and political systems makes systematic examination paramount. Research into dictatorial systems must – whether we like it or not – abstract from moral issues and concentrate on rational choice behavior based upon a dictatorial objective function if it is to be applicable to other times, places and circumstances.

This paper is not about Stalin’s purge of political rivals, which peaked between December of 1934 and 1938, during which, according to Nikita Khrushchev’s secret speech of February 1956, 1,108 of the 1,966 delegates to the Seventeenth Party Congress were arrested on charges of counter-revolutionary crimes [of whom 848 were executed].<sup>4</sup> Palace intrigues of this sort are commonplace throughout history. We study instead the repression and elimination of massive numbers of ordinary citizens – i.e. a trimming of the constituency. Stalin ordered three such mass repressions: the “dekulakization” of the countryside between 1930 and 1932, the “mass operations” of the Great Terror in 1937 and 1938, and “national operations” against ethnic minorities starting in 1937 and proceeding into the early postwar period. These operations were directed against Stalin’s own citizens and on a massive scale.

Official state security statistics show that 715,272 persons were executed and 928,892 persons were imprisoned in camps of the Gulag in the years 1930-1932 and 1937-1938 for counter-revolutionary offenses by extra-judicial tribunals.<sup>5</sup> These astonishing figures cumulate to equal 1.5 percent of the adult population of the Soviet Union in the 1930s.

Democracies rarely repress their own citizens but authoritarian and totalitarian regimes do. According to one estimate (See Table 1), of the 110 million persons repressed by Marxist-Leninist regimes in the twentieth century, more than ninety percent were their own citizens. In democracies, less than half of one percent were own citizens. It is statistics, such as these, that suggest some “generality” in Stalin’s behavior. Empirical studies also suggest that totalitarian regimes generate more “violence” than democracies (Mulligan, Gil, Sala-I-Martin, 2004).

**Table 1: Victims of Repression, Twentieth Century (through 1993)**

Type of government	Total	Own Citizens	Others
Democratic	2,028,000	159,000	1,858,000
Authoritarian	28,676,000	26,092,000	2,584,000
Totalitarian, non-Marxist-Leninist	27,691,000	1,265,000	26,425,000
Marxist-Leninist	110,286,000	101,929,000	8,357,000
Other (guerillas)	518,000	464,000	54,000

Source: Gunnar Heinsohn, *Lexikon der Völkermorde* (Hamburg: Rowolt, 1998: 53).

<sup>2</sup>Among others, Stalin arrested the wives of his loyal deputy V. Molotov, his personal secretary, his state security heads, G. Yagoda and Nikolai Ezhov, and of his nominal head of state, Mikhail Kalinin. On this, see Baberowski (2005), p. 98.

<sup>3</sup>Molotov: “I acknowledge my heavy sense of remorse for not having prevented Zhemchuzhina [Molotov’s wife], a person dear to me, from making her mistakes and from forming ties with anti-Soviet Jewish nationalists, such as Mikhoels.” Cited in Gorlizki and Khlevnyuk, (2004), pp.75-79:

<sup>4</sup>[http://faculty.goucher.edu/history231/khrushchev\\_secret\\_speech.htm](http://faculty.goucher.edu/history231/khrushchev_secret_speech.htm)

<sup>5</sup>“Report about the numbers of those sentenced according to cases of organs of the NKVD” Colonel Pavlov, “Fulfilling the Responsibilities of the Head of the First Special Department of the Ministry of Internal Affairs (MVD).” December 11, 1953; GARF, f 9401, Op. 1, D4157, l. 205.

Our paper is organized as follows. The following section describes the three repression waves and historical facts. Section three develops the dictatorial eliminations model. The penultimate section distills the stylized facts of Stalin’s repression waves and attempts to pin down the model’s parameters during each of the repression campaigns. We determine whether the stylized facts of Stalin’s repressions are consistent with the model. The final section presents our conclusions.

## 2 A Sketch of Repression under Stalin

Stalin’s dictatorship represents a classic case of dictatorship with an enormous concentration of power in the hands of one individual obsessed with holding on to power and unconstrained by conventional morality. Stalin’s former secretary, who fled to the West where he miraculously escaped assassination, captured Stalin’s objective function succinctly: “He had only one passion, absolute and devouring: lust for power” (Bazhanov, 1990: 106). All politicians, be they democrats or autocrats, are presumed to wish to hold on to their offices (Bueno de Mesquita et al., 2003). What distinguishes Stalin is the intensity of his preferences. Against this background, we base our analysis on a simple objective function: the maintenance of power and regime survival. By acknowledging an objective function that has been and will be shared by dictators in other times and places, we can use the meticulously documented Stalin dictatorship to further our understanding of the dictatorial systems and to develop a model with general applications.

Figure 1 provides a sketch of the historic timeline and the three repression campaigns relevant to our analysis.

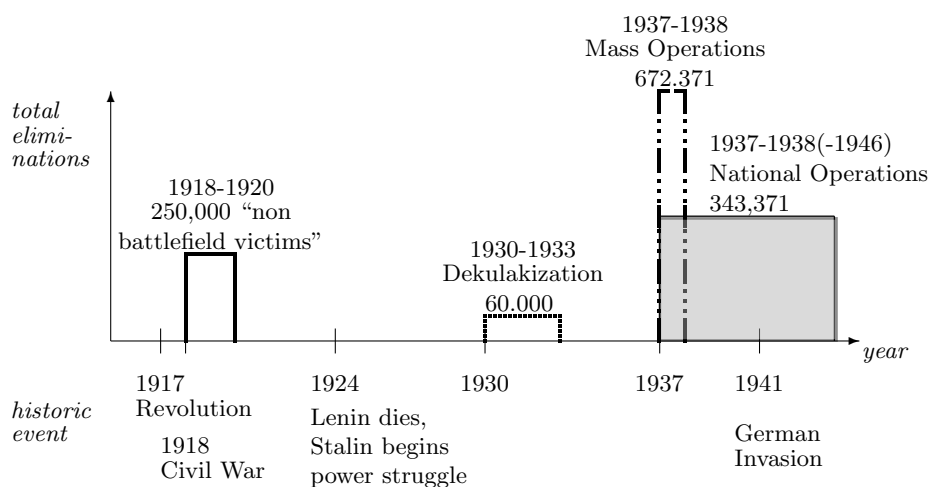


Figure 1: Timeline for Three Repression Waves

### 2.1 The Democratization Alternative

Repression – the focus of the current paper – as a means to secure power is, of course, only one of many different options available to a dictator. In principle, any dictator also has the option to democratize and earn the right to rule. Yet, dictators in their calculations to maintain themselves in office rarely choose this option.

Soviet history illustrates this calculation clearly. Even though Stalin himself did not seriously contemplate democratization during his reign, the Bolsheviks under Lenin did have to make such



choice in 1917. After the February Revolution, Russia was ruled by an uneasy alliance of the Provisional Government and the Petrograd Soviet. The Provisional Government was to be replaced by a Constituent Assembly, whose election was scheduled for November 12, 1918. As the Provisional Government weakened, the Bolsheviks overthrew it on October 25, 1918, giving them control over most of the Russian regions of the former Russian Empire (Radkey, 1989). A month earlier, Lenin had come out in its favor of elections, arguing that the Provisional Government would delay them and predicted that revolutionary forces would win if there were “revolutionary democratic” preparations for the election, especially among the peasantry. That is, Lenin argued that if peasants and workers understood the Bolshevik policy stance, they would win. Lenin’s main concern was “freedom of the press” which he equated with control of the press by the rich (Lenin, September 28, 1918). Prior to the elections, it became clear that the Bolsheviks would gain only a minority of votes, but Lenin did not cancel the elections, a decision for which he was heavily criticized within the Bolshevik party (Bazhanov, 1990). In the election, 35 million votes were cast; the Social Revolutionaries (SRs) won an absolute majority with 21 million votes and the Bolsheviks won one quarter of the votes (Sviatitsky, 1918). Lenin begrudgingly allowed the Constituent Assembly to meet for one day, after which delegates returned to find the doors locked. Lenin abolished the Constituent Assembly on the grounds that the election lists were no longer valid, that the people had not had the chance to “observe the revolutionary struggle for peace,” and that acceptance of the election results would be a “betrayal of the proletariat’s cause.” (Lenin, December 26, 1917).

After the 1918 elections, the Bolshevik regime under Lenin and then Stalin (up to 1930) applied a three-pronged approach to prevent democratization. First, Lenin ordered the arrest of members of opposition parties, especially of those with party platforms close to the Bolsheviks. Article 1 of the Red Terror decree of September 2, 1918 ordered the arrest of prominent Social Revolutionaries and Mensheviks (ISG Vol. II). Second, although the monopoly of the communist party was not constitutionally enshrined until 1936, only its slates of candidates were allowed. In fact, Lenin ordered local election results ignored if the party’s candidates were rejected. Third, there was massive disenfranchisement of the “deprived” – those deprived of voting and other civil rights (Alexopolous, 2003). The practice of depriving of voting rights continued until the 1936 Stalin Constitution, but at its peak more than two million persons were disenfranchised.

## 2.2 Stalin’s Three Repression Waves

The dekulakization, mass operations, and national operations campaigns were initiated by extraordinary instructions issued by Stalin.<sup>6</sup> They were followed by operational decrees of the heads of state security (Genrykh Yagoda, OGPU, and Nikolai Ezhov, NKVD, and Lavrenty Beria, NKVD) that identified the numbers and characteristics of victims and their punishment by regions, the expedited procedures for sentencing, and the starting and ending dates.<sup>7</sup> Specific targets (“limits”) of executions, imprisonments, or deportations were to be fulfilled within four months for dekulakization and mass operations and each of the national campaigns was to be completed in a few weeks time. Dekulakization targeted the wealthier segments of the rural population along with anyone in the countryside opposed to Soviet power. Mass operations

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<sup>6</sup>For dekulakization, see: Decree of the Politburo of the Central Committee of the All-Russian Communist Party (VKP) “About Measures for the liquidation of kulak households in the regions of continuous collectivization” January 30, 1930, from Ivnitsky (2000), pp. 126-130.

<sup>7</sup>For the operational order, see: Directive of the OGPU, No. 44/21 “About the liquidation of the kulaks as a class” February 2, 1930, from Vert and Mironenko (2004), pp.94-104; Operational Decree of the NKVD No. 00447 “About operations for the repression of former kulaks, criminals, and other anti-Soviet elements” July 30, 1937, from Vert and Mironenko (2004), pp.268-274.

(sometimes called "kulak operations"), targeted political enemies throughout the entire country. National operations targeted specific national groups, many located in border regions.

**Dekulakization, 1930-1932** Collectivization and forced industrialization were the two pillars of Stalin's "Great Break", announced in his 1929 article entitled "The Year of the Great Break." The endorsement of collectivization by the November 1929 Plenum signaled Stalin's triumph over his last viable opponents. Forced collectivization began on November 24, 1929 (Ivnitsky, 2000: 8-9).

Stalin's dekulakization decree of January 30, 1930 ordered the "destruction of the kulaks as a class" (along with other rural enemies). It set limits of 60,000 concentration camp sentences or executions of the most dangerous "first-category" kulaks and for the deportation of 150,000 "second-category" kulaks (and their families) broken down into nine regions. First-category offenders (in all three repression campaigns) were the most "socially" dangerous and subject to the most severe penalties. A "control figure" of 3-5 percent of the peasant population was established as the ultimate goal of dekulakization, but no time limit was set (Ivnitsky, pp.118-123). Individual victims were to be chosen by consultations between local party and state security officials and committees of poor and middle peasants.

Stalin's Politburo decree was followed three days later by Yagoda's Operational Directive of the OGPU, No. 44/21 "About the liquidation of the kulaks as a class," which ordered "the expeditious creation of troikas in the regional departments of the OGPU" to process first-category defendants "without the slightest delay" and the preparation of collection points to insure the "uninterrupted transport of deportees." Notably, petitions by some regions, such as the Urals, for higher "limits" were rejected unambiguously.<sup>8</sup>

Collectivization and dekulakization set off a civil war in the countryside, which the Bolsheviks eventually won by mobilizing OGPU special forces and bringing in activists from the cities (Ivnitsky, 2000: 182, 405). OGPU statistics recorded 14,000 acts of terror and 13,754 mass demonstrations in 1930 alone, in which 2.5 million rural residents participated, one quarter organized by women.

Although dekulakization was carried out under conditions of near civil war, its targets for the "most dangerous" first-category enemies were met, but there were shortfalls in the fulfillment of deportations (initial short-term target of 154,000, fulfillment 99,515), primarily because deportations and resettlements (within remote regions) proved costly in terms of transport and infrastructure investments for incoming "special settlers". See Table 2.

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<sup>8</sup>"The Central Committee directs attention to the fact that in some provinces there is an effort to raise the number of deported kulaks and thus violate the decree of the Central Committee, The Central Committee categorically demands the exact execution of its decision of January 30." See: Ivnitsky (2000), pp. 169-70

**Table 2: Dekulakization: Plan and Plan-fulfillment**

	Camps (prison sentences) or Death (executions), by May 1930, first-category	Deportations (families), by May 1930	Long-term dekulakization, by end of 1932
Plan	60,000	154,000	726,000 to 1.2 million
Fulfillment	65,000	99,515	500,000 to 794,275

Note: Under the long-term goal were included a third- category for resettlement within the region.

Source: Calculations from original sources by Paul Gregory. See Gregory (2007, Ch. 5.)

Compared to later repression waves, dekulakization yielded relatively modest numbers of executions and prison terms. It was principally a device to move rural regime opponents out of the area of “continuous collectivization.” If we include deportations and resettlements (which were brutal affairs), the numbers of families affected were in excess of a half million. Deportations and resettlements did allow Stalin to trim the constituency, but only temporarily. By the late 1930s, there were relatively few deported peasants left in the areas of special settlement.

**Mass Operations, 1937-1938** The claimed success of the “Great Break” allowed Stalin to solidify his authority, and he took advantage of the unsolved assassination of Leningrad party boss, Sergei Kirov, in December of 1934, to physically eliminate his last political rivals in the Moscow Show Trials of 1935, 1936, and 1937. The Politburo itself ceased to have formal meetings and decisions were made by groups appointed by Stalin. Stalin was now, as his colleagues would say, “master of the house.”

Nikolai Ezhov replaced the soon-to-be-executed Yagoda as head of the NKVD on September 26, 1936 and served as Stalin’s general contractor for the “mass operations” of 1937-1938, typically called the Great Terror. Stalin set mass operations in motion to liquidate class enemies “once and for all time” with top secret telegrams of June 28 and July 3, 1937 to regional party secretaries. The July 3 telegram read, in part: “. . . to investigate all returnees so that the most hostile are immediately arrested and shot according to administrative measures via troikas. . . The Central Committee requires that . . . the numbers to be shot and deported be given within five days.”<sup>9</sup>

Stalin’s July 3, 1937 directive gave only the basic outline of the terror campaign and labeled class enemies with the catch-all phrase “returning kulaks and criminals.” Operational decrees issued by the NKVD filled in the blanks. Stalin met fifteen times with Ezhov (often with Stalin’s deputy, V.M. Molotov, in attendance) between July 4 and July 29, 1937.<sup>10</sup> During these meetings Stalin likely dictated the scale of operations and other details behind the scenes.

Ezhov’s NKVD Operational Order No. 00447 of July 30, 1937 spelled out the details of mass operations, twenty seven days after Stalin’s July 3 telegram. Clearly, Stalin knew and approved its contents.”<sup>11</sup> He forwarded it to the Politburo for a perfunctory proxy vote. Whether Ezhov

<sup>9</sup>Fond 3, op. 74, del 21, l. 89.

<sup>10</sup><http://www.melgrosh.unimelb.edu.au/index.php?section=pol&page=home>

<sup>11</sup>On the same day, he sent a note to his secretary (Poskrebyshev): “I am directing to you Operational Decree No. 00447 ‘About the repression of former kulaks, criminals, and anti-soviet elements.’ I request you send this to members of the Politburo for voting and send the results to Comrade Ezhov.” See: Khaustov, Naumov, and Plotnikov (eds.), 2004, Document 151, p. 273: Zapiska M.I. Frinovskogo v PB s prilozheniem operativnogo prikaza NKVD SSSR no. 0044.

handed down tentative “limits” or they were handed up by the regions cannot be known for sure. Whatever the case, Ezhov set a savage tone, which he would not have done without Stalin’s approval, ordering NKVD officials assembled in Moscow to “beat, threaten without sorting out.” When asked about arrests of 70 and 80 year olds, Ezhov responded: “If they can stand, shoot them.” (Vassiliev, 2005). Taking their cue from Ezhov, regional NKVD leaders proposed high execution “limits.”<sup>12</sup> The head of the NKVD’s Western Siberian administration stated on July 8 that he could manage 10,924 first and 15,036 second-category victims (Jansen and Petrov, 2002: 83). (Western Siberia was “awarded” 5,000 and 12,000 on July 30).

Ezhov’s Order No.00447 gives “limits” for first- and second-category victims for 65 regions, including the Gulag, whose “limits” were for executions only because inmates were already in prison. Unlike dekulakization where the “limit” totals were prominently highlighted, one has to add up the totals for the 65 region, which equal 75,950 executions and 193,000 prison sentences. The operation was scheduled to begin August 5, 1937 and to end within four months. It was ultimately extended on January 30, 1938 with additional limits through mid November of 1938.

Ezhov’s 00447 decree encouraged regions to petition for higher limits: “In cases where the circumstances demand a raising of the limits, the heads of the republican NKVDs and the directors of regional and provincial administrations must submit to me petitions justifying increases.” According to instructions, the troikas were not to try cases but simply to approve the sentence recommended by the operational group, which was to carry out the sentence “under complete secrecy.”

Throughout the campaign, Stalin continued to approve limit increases. For the first time since his accession to complete power, Stalin did not take a lengthy vacation in the south but stayed in Moscow to personally monitor the slaughter. As of November 1, 1938, the total number of convictions stood at 1.4 million, of which 687,000 were shot, Khlevnyuk (forthcoming).

Were these sentences “approved” by superiors or were they simply the result of excesses in the regions? Table 2 shows the original limits, the limit increases approved by the Politburo, and those approved by the NKVD, but not by the Politburo.

**Table 3: Adjustment of Plan-limits and Fulfillment during Mass Operations**

	<b>First- Category</b>	<b>Second- Category</b>	<b>Total</b>
A. Plan: Limits of 00447 Decree, July 30, 1937	75,950	193,000	268,950
B. Plan: Limit increases approved by Politburo, August 1937 to November 1938	150,500	33,250	183,750
C. Plan: Limit increases approved by NKVD alone	129,655	170,960	300,615
D. Plan: Total sentences, approved	356,105	397,210	753,315
E. Fulfillment : Total sentences	386,798	380,599	767,397

Source: Iunge and Binner, 2003, p. 136.

The conclusion is that most sentences were actually approved at some level. However, some three hundred thousand were approved within the NKVD, and it is not clear whether they were approved at the highest levels of the NKVD or simply by regional NKVD offices. Of the limit

<sup>12</sup>Ezhov gave Ukrainian officials five days to check “agent material” for the compilation of “exact lists” of arrestees, containing, among other things, their locations, the composition of their families, protocols of interrogations of witnesses, and the prosecutor’s sanction of the arrest. On this, see Vassiliev (2006).

increases, Stalin (the Politburo) approved only 184,000, some 60,000 of which were approved with his extension of mass operations at the end of January 1938.

This gap between Politburo-approved sentences and those approved by the NKVD alone gave Stalin a wedge to blame the excesses of mass operations on Ezhov and his NKVD. In his interrogations, Ezhov claimed that mass operations were carried out in close agreement with Stalin and that he “kept Stalin informed of what was going on in the NKVD” (Iunge and Binner, 2003: 229) – an assertion that was quickly rebutted by Ezhov’s deputy, M.P. Frinovsky, in his interrogation: “Ezhov declared that he had never concealed or never would conceal anything from the party or Stalin. In fact, he fooled the party in big and small questions.” (Khaustov, Naumov, Plotnikova, 2006: 49.)

The fact that Stalin could end mass operations and shut down the troikas with one decree suggests, on the one hand, that he remained in control,<sup>13</sup> but does not rule out local excesses. Clearly, with accelerating repression, executions outpaced approvals. Thus, when the repression was unexpectedly shut down, regional NKVD offices had overshot the number of approved executions, for which they could later be held accountable. However, it would be hard to explain 300,000 “excess” repressions as simply a timing issue.

**National Operations** Ezhov’s list of first and second category enemies did not specifically include “national contingents,” such as Poles, Germans, Greeks, or Latvians or Lithuanians, suspected of possible involvement with foreign intelligence. National operations were distinct from the Mass Operations NKVD Order No. 00447 and were set in motion by a series of extraordinary decrees aimed specifically against “socially dangerous” nationalities. Preceding Order No. 00447 by five days was NKVD order No. 00439 “About repression operations against German subjects suspected of espionage” (Vert and Mironenko, 2004, p. 267). The Politburo’s call of August 9, 1937 for the repression of Polish diversionary espionage groups was followed two days later by NKVD operational order No. 00485, which ordered the execution or imprisonment of members of underground Polish military organizations, Polish prisoners of war, political immigrants, and anti-Soviet nationalistic elements in Polish regions within a three month time frame.<sup>14</sup> Like Ezhov’s 00447 decree, Decree No. 00485 divided enemies into a first category for execution and a second for imprisonment. In September and October of 1937, Stalin ordered the resettlement of Koreans from the Far East Region to Kazakhstan and Uzbekistan to prevent them from spying for the Japanese.<sup>15</sup> NKVD telegram No. 49990 of November 30, 1937 “About the operation for the repression of Latvians” ordered the arrest (starting on December 3) of first and second-category Latvians under surveillance, political emigrants, migrants from Latvia, members of specific organizations [listed] and all Latvian citizens except diplomatic corps.<sup>16</sup>

The two nationalities that bore the greatest burden of the national operations that began in 1937-1938, were Poles whose victims numbered over 130,000 and Germans, of whom five percent of all German located in the USSR were repressed. To handle the large numbers of arrested national contingents, special troikas were established to process cases of this category within two months (Vert and Mironenko, 2004, p. 285). Of the quarter million persons arrested in Ukraine in 1937-1938, thirty one percent were arrested under national operations, the rest under Order

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<sup>13</sup>Decree of the SNK and Central Committee About arrests, procuratorial oversight and the conduct of investigations, “ November 17, 1938, cited in Vert and Mironenko, pp. 305-308.

<sup>14</sup>Operational order of the NKVD No. 00485 “About the operation for the repression of members of Polish military organizations in the USSR,” August 11, 1937. Cited in Vert and Mironenko, p. 275-6.

<sup>15</sup>Fond 3, op. 74, del. 21

<sup>16</sup>Ciphered telegram of the NKVD No. 49990 „About the conduct of the operation for repression of Latvians, Nov. 30, 1937, cited in Vert and Mironenko, (2004), p. 285.

00447 (Vassiliev, 2006, p. 151). Almost 387,000 persons were executed and almost 390,000 were imprisoned under Ezhov's 00447 decree, while national operations accounted for a quarter million executions and a hundred thousand prison sentences (Iunge and Binner, 2003).

The stylized facts of national operations remain to be gathered. They continued into the early postwar period, and they must be disentangled from 00447 operations, POW operations, and NKVD operations behind the lines during World War II. We focus here in one stylized fact of national operations – the lack of centrally set quotas or limits.

### 3 A Dictatorial Eliminations Model

Traditional models of democracy and voting assume that politicians pick their policies according to the positions of the median voter and of their political competitors. Democratic politicians might shape the physical composition of voters by, e.g., targeted transfers to certain groups which lead some voters to leave their district (Glaeser and Shleifer, 2005). Dictators have far more ample opportunities for such trimming of their constituency. They have the option of adjusting the political stance of their citizenry by massive propaganda and reeducation campaigns, which may or may not be effective, or by organizing an inflow of supportive citizens, a process applied by colonial powers. The more brutal of them can force enemies into migration or exile. The most brutal can directly adjust the combined citizens' policy stance by execution or imprisonment. The dictator's objective – and in that respect he is not different from democratic politicians (Bueno de Mesquita et al, 2003: Introduction)– is to maintain a firm grip on power, which can be lost if the share of disaffected citizens in the population reaches a “revolution constraint” (Acemoglu and Robinson 2006: p.120-122).

Such eliminations model would have relatively little explanatory value if the dictator operated with perfect information about his enemies. Dictators, of course, have a secret police (in this case, Stalin had the OPGU and NKVD) to gather information on individual citizens, but the regime's enemies have an incentive to conceal themselves. Therefore, the dictator's information on enemies is imperfect, meaning that he could eliminate some passive citizens who are content with the status quo while letting some enemies, who wish his overthrow, go free.

We have attempted to construct the simplest possible eliminations model to see what light it sheds on the stylized facts of the rejection on democratization from Lenin to Stalin and, most importantly on Stalin's three mass-repression waves: dekulakization, mass operations of the Great Terror and national operations. Despite its simplicity, the model provides certain non-obvious insights into dictatorial behavior, especially in explaining the rationality of eliminating “passive” (non-hostile) citizens.

#### 3.1 The Formal Setup

The dictator faces a population which is a continuum of size 1, consisting of two types of citizens,  $e$  and  $p$ .<sup>17</sup> We follow the standard in the political economy literature (Persson and Tabellini, 2000, Ch. 2-3, Acemoglu and Robinson, 2006, Ch.5), and consider a one-dimensional policy space. Accordingly, a dictator's ideology stance,  $\phi \in \mathbb{R}$  (his choice variable) within the policy space is a policy platform that implies certain benefits and costs to the two different groups in society. These costs and benefits can cover such diverging items as the effects of collectivization, the tax on human capital, provision of public goods, safety and security, the access to privileges, avoidance of punishment, freedom of speech, etc. What matters in our analysis is that citizens

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<sup>17</sup>As will become clear below,  $e$ -type agents will turn out to oppose the incumbent dictatorial regime, i.e. they are regime enemies from the dictators perspective, while  $p$ -types can be referred to as passives.

differ in their preferences for the ideological position. This is the nucleus for any voting, for any political process and, not least, for the actions of dictators.

Citizen  $i$  has the following utility function:

$$v_i(\phi) = -|\phi - \bar{\phi}_i|,$$

which is standard in political economy literature (e.g., Persson and Tabellini, 2000). For each  $i = e, p$ ,  $\bar{\phi}_i$  is the ideal choice. Without loss of generality, we assume  $\bar{\phi}_e = 0$  and  $\bar{\phi}_p = 1$ . Finally, let  $\alpha$  be the share of  $e$  types and accordingly  $1 - \alpha$  the share of  $p$  types. Furthermore  $p$ -types are assumed to form a majority, i.e.  $\alpha < 1/2$ .

The dictator maximizes his expected utility of staying in power,  $u^D(\phi) = -P(\phi) |\phi - \bar{\phi}_D|$ , where  $P$  is the probability of staying in power; we assume that the dictator's own ideal policy is  $\bar{\phi}_D > 1$ . If the dictator is ousted from power either in elections, or by a coup, his utility is normalized to 0. If the dictator democratizes, people participate in elections where the incumbent dictator is one of two candidates. Elections are modelled as a standard probabilistic-voting process. Agent  $i$  votes for candidate  $j$  against candidate  $k$  if

$$v_i(\phi_j) + \sigma_i + \delta \geq v_i(\phi_k). \quad (1)$$

The term  $\sigma_i$  is an individual preference for candidate  $j$ , with voters' preferences  $\sigma_i$  distributed uniformly over  $\left[-\frac{1}{2\gamma^i}, \frac{1}{2\gamma^i}\right]$ , and without loss of generality we assume that  $\gamma^e = \gamma$ ,  $\gamma^p = 1$ . Aggregate uncertainty about voters' preferences is given by  $\delta$ , which represents a random preference for the dictator shared by all voters, but unknown prior to election day; and where  $\delta$  is distributed uniformly over  $\left[-\frac{1}{2}, \frac{1}{2}\right]$ . Note that because of the probabilistic-voting assumption the pivotal voter is not necessarily of type  $p$ , even though  $p$ -types are a majority.

If the dictator does not democratize, people have the option of revolt. Once a critical mass of citizens perceives itself as receiving higher net benefits with revolution (assuming the population can solve the problem of organizing collective action) the dictator must take action to prevent being overthrown. Thus, from the perspective of a dictator interested in staying in power,  $e$ -agents are enemies, while  $p$ -type citizens can be referred to as "passive", in line with the terminology used elsewhere in the paper. There is a cost of revolt for each individual,  $\kappa > 0$ . If the revolt is successful, then elections take place with multiple candidates not including the former dictator; we simply assume that the preferred choice of the median voter wins this election. A revolt fails if the share of participants is less than  $\theta$ , and it necessarily succeeds if the share of participants exceeds  $\theta$ . Thus, the parameter  $\theta$  captures in reduced form the Acemoglu and Robinson (2006: 120-122) revolution constraint, which describes the condition under which those excluded from political power decide to overthrow those who are in control.<sup>18</sup> Accordingly, the parameter  $\theta$  reflects the degree of security of the dictator, i.e. how secure is the dictator's power base. A large  $\theta$  implies a secure dictator, who can tolerate a relatively higher share of enemies, while a low  $\theta$  corresponds to an insecure dictator. The security of a dictator stems from the dictator's control of the political process, the military or the secret police.

To prevent a revolt, the dictator can opt to eliminate regime enemies in the population. For the dictator, there is a cost associated with eliminating a person,  $c$ : it might be a physical cost of elimination, or a loss in production capability of the workforce. The elimination process is modelled as follows: Though the actual policy preferences of individual citizens are unobservable

<sup>18</sup>In the Acemoglu-Robinson (2006) framework, citizens decide whether to accept the status quo or revolt by comparing net payoffs received with or without a revolution. In Acemoglu-Robinson, the revolution constraint is binding when the share of income (in the case of nondemocracy) to the ruling class exceeds the fraction of resources destroyed in the course of revolution (p. 122).

(enemies would normally try to conceal this fact), the secret police can label the population such that, with probability  $\rho > \frac{1}{2}$ , an individual citizen's policy stance can be correctly identified as passive or enemy, respectively. Thus,  $\rho$  is a measure of the quality of information available to the dictator. Formally, the relationship between the true type of person and the attached label:

$$\Pr(\text{Label} = \text{Enemy} \mid \text{Type} = e) = \Pr(\text{Label} = \text{Passive} \mid \text{Type} = p) = \rho.$$

### Timing of the game

**1.** The Dictator chooses whether to democratize, and sets an ideology stance  $\phi$ .

**2a.** If the dictator does not democratize, he chooses how many people “labelled enemy” to eliminate. Then people decide whether or not to revolt. If they revolt and succeed, elections are held without the dictator as a candidate.

**2b.** If the dictator democratizes, a challenger announces his position, and people vote.

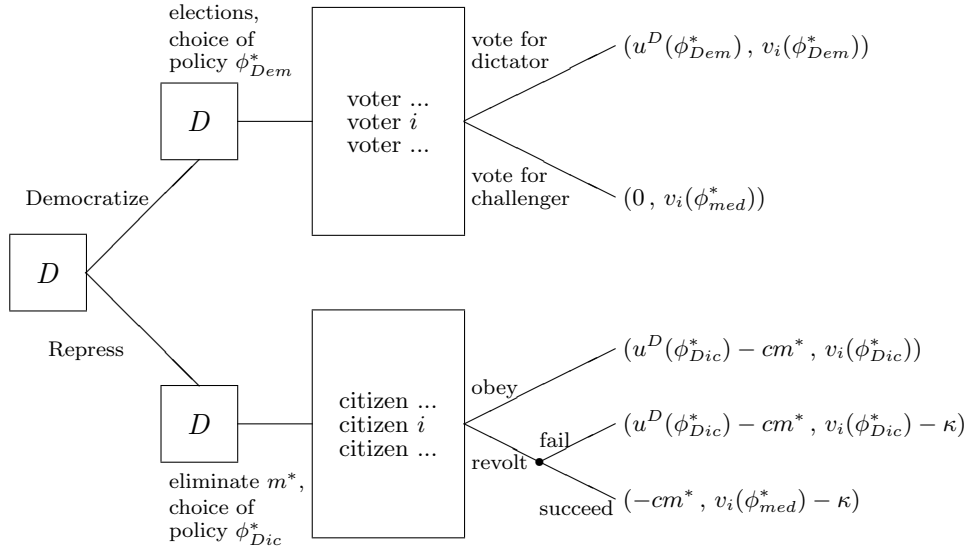


Figure 2: The Game Tree

Figure 2 illustrates the situation. We look for Subgame-Perfect Nash Equilibria, which may in this simple game be found by backward induction. Following Acemoglu and Robinson (2006), we always assume that (i) members of classes are identical; (ii) the collective-action problem is solved.

### 3.2 Analysis

We go backward through the game tree to solve the model (see Figure 2).

**Democratization** Suppose that the dictator chooses democratization and elections are held. Given dictator's choice of  $\phi_D$ <sup>19</sup> and the challenger's position of  $\phi_C < 1$ , the dictator would

<sup>19</sup>A simple argument yields the optimal electoral position  $\phi_D^*(dem) < 1$ .



have the following probability of winning ( $\pi_D$  denotes the expected number of votes for the incumbent):

$$\begin{aligned}
P &= Pr[\pi_D \geq \frac{1}{2}] = \frac{1}{2} + (\alpha\gamma[v_e(\phi_D) - v_e(\phi_C)] + (1 - \alpha)[v_p(\phi_D) - v_p(\phi_C)]) \\
&= \frac{1}{2} + (\alpha\gamma(-|\phi_D - \bar{\phi}_e| + |\phi_C - \bar{\phi}_e|) + (1 - \alpha)(-|\phi_D - \bar{\phi}_p| + |\phi_C - \bar{\phi}_p|)) \\
&= \frac{1}{2} + (1 - (1 + \gamma)\alpha)(\phi_D - \phi_C).
\end{aligned} \tag{2}$$

A standard argument shows that, given the challenger's position  $\phi_C$ , the dictator's expected utility is maximized by choosing:

$$\phi_{Dem} = \frac{1}{2} \left( \phi_C + \bar{\phi}_D + \frac{1}{2(\alpha + \alpha\gamma - 1)} \right). \tag{3}$$

In the important case, when the challenger's position coincides with the expected voter position,  $\phi_C = E\bar{\phi}_{med} = \alpha\bar{\phi}_e + (1 - \alpha)\bar{\phi}_p = 1 - \alpha$  (under our convention that  $\phi_e = 0$ ,  $\phi_p = 1$ ), the dictator's optimal choice is thus

$$\begin{aligned}
\phi_{Dem}^* &= \frac{1}{2} \left( \alpha\bar{\phi}_e + (1 - \alpha)\bar{\phi}_p + \bar{\phi}_D + \frac{1}{2(\alpha + \alpha\gamma - 1)} \right) \\
&= \frac{1}{2} \left( (1 - \alpha) + \bar{\phi}_D + \frac{1}{2(\alpha + \alpha\gamma - 1)} \right).
\end{aligned} \tag{4}$$

Accordingly, under democracy, the dictator's expected utility is

$$Eu^D(\phi_{Dem}^*) = \frac{1}{4} (\bar{\phi}_D - 1 + \alpha) ((\bar{\phi}_D - 1 + \alpha)(1 - (1 + \gamma)\alpha) - 1). \tag{5}$$

**Repression** Now suppose that the dictator has made the choice not to democratize. If  $m$  persons are labeled as enemies, then, among them there are  $\rho\alpha m$  enemies and  $(1 - \rho)(1 - \alpha)m$  passives mistakenly labeled as enemies. The share of true enemies among  $m$  labeled enemies is thus  $\frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)}$ . If all of  $m$  persons labeled as enemies are eliminated, the post-repression share of enemies in the total (non-institutionalized) population is

$$a = \frac{1}{1 - m} \left( \alpha - \frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)} m \right). \tag{6}$$

Given that the dictator opted not to democratize, his policy choice is

$$\phi_{Dic}^* = \arg \max_{\phi} u^D(\phi)$$

s.t.  $v_p(\phi) - v_p(\bar{\phi}_{med}) = 2\bar{\phi}_p - \bar{\phi}_{med} - \phi = \kappa$ .

The solution to this optimization problem is  $\phi_{Dict}^* = \max\{1 + \alpha - k, 1 + k - \alpha\}$ , and  $u^D(\phi_{Dict}^*) = \max\{1 + \alpha - k, 1 + k - \alpha\} - \bar{\phi}_D$ . For the sake of brevity, we will henceforth assume that  $\alpha < k$  (the opposite case can be analyzed in a similar fashion).

When  $v_e(\phi_D^*) - v_e(\bar{\phi}_{med}) > \kappa$ , (i.e. enemies prefer to revolt rather than accept the dictator's policy), the dictator needs to eliminate so many people,  $\Delta$ , that the number of actual enemies,  $\alpha - \Delta$  does not exceed  $\theta$ , formally  $\alpha - \theta < \Delta$ . Using (6) and solving  $a = \theta$  for  $m$ , one gets

$$m^*(\rho, \alpha, \theta) = (\alpha - \theta) \left( \frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)} - \theta \right)^{-1}, \tag{7}$$

which results in costs to the dictator of  $cm^*(\rho, \alpha, \theta)$ .

Summing up, the dictator chooses repression over democratization as long as  $u^D(\phi_{Dict}^*) - cm^*(\rho, \alpha, \theta) > u^D(\phi_{Dem}^*)$ , or, equivalently, as long as

$$\begin{aligned} 1 - \alpha - \bar{\phi}_D + k - c(\alpha - \theta) & \left( \frac{\rho\alpha}{\rho\alpha + (1-\rho)(1-\alpha)} - \theta \right)^{-1} \\ & > \frac{1}{4} (1 - \alpha - \bar{\phi}_D) (1 - (1 - \alpha - \bar{\phi}_D) (1 - (1 + \gamma)\alpha)). \end{aligned}$$

The above formula highlights the crucial role of the difference between the dictator's ideal point  $\bar{\phi}_D$  and that of the median voter  $\bar{\phi}_{med} = 1 - \alpha$ .

The following Proposition summarizes the above discussion.<sup>20</sup>

**Proposition 1.** *In the dictatorial eliminations model:*

1. *Generically, there exists a unique Subgame-Perfect Nash Equilibrium. In this equilibrium, enemies revolt if and only if the number of those who are eliminated does not exceed  $m^* = (\alpha - \theta) \left( \frac{\rho\alpha}{\rho\alpha + (1-\rho)(1-\alpha)} - \theta \right)^{-1}$  and  $v_e(\phi_{Dic}^*) - v_e(\bar{\phi}_{med}) > \kappa$ ; and passives revolt when  $v_p(\phi_{Dic}^*) - v_p(\bar{\phi}_{med}) > \kappa$ .*
2. *For any  $(\alpha, \rho, c, k, \theta)$ , there exists an interval  $(\bar{\phi}_D^L, \bar{\phi}_D^H)$ ,  $\bar{\phi}_D^L \leq \bar{\phi}_D^H$  such that in a Subgame-Perfect Nash Equilibrium, the dictator chooses democratization if  $\bar{\phi}_D \in (\bar{\phi}_D^L, \bar{\phi}_D^H)$ , and repression otherwise.*
3. *Repression becomes a more appealing choice, i.e. the lower bound for democracy,  $\bar{\phi}_D^L = \bar{\phi}_D^L(\gamma, \rho, c, k, \theta)$ , increases, and the higher bound,  $\bar{\phi}_D^H = \bar{\phi}_D^H(\gamma, \rho, c, k, \theta)$ , decreases, when, ceteris paribus, either*
  - (a) *election outcome becomes less certain,  $\gamma$ , decreases; or*
  - (b) *the cost of participating in a revolt for citizens,  $k$ , decreases; or*
  - (c) *the cost of repression,  $c$ , decreases; or*
  - (d) *the probability of correctly determining the enemy,  $\rho$ , increases; or*
  - (e) *the dictators security (revolution threshold),  $\theta$ , decreases.*

### 3.3 Results and Discussion

The above simple model helps to address three questions that are of interest. First, it explains the consistent rejection of democratization by Soviet leaders from Lenin through Stalin and thereafter. Second, once the repression path is chosen, it explains how the dictator determines the number of eliminations necessary to remain secure. Third, it explains how the quality of information  $\rho$  and how the dictators security  $\theta$  affects the dictator's actions.

From (7), we know that, given the repression path is chosen, the optimal number of eliminations from the dictator's standpoint is:

$$m^* = \max \left\{ (\alpha - \theta) \left( \frac{\rho\alpha}{\rho\alpha + (1-\rho)(1-\alpha)} - \theta \right)^{-1}, 0 \right\}. \quad (8)$$

<sup>20</sup>Proof of Proposition 1 is provided in a separate Appendix at the end of the manuscript and not intended for publication.

If  $\alpha < \theta$  (the percentage of enemies is below the revolution constraint), the dictator has no reason to eliminate, i.e.  $m^* = 0$ .<sup>21</sup> The dictator must trim the population ( $m^* > 0$ ) in the case where  $\alpha > \theta$ . Since we assume  $\alpha < \frac{1}{2}$  and  $\rho > \frac{1}{2}$ , we have  $\rho > \theta$ . Since the reported number of enemies will be an overestimate due to the imperfect information, there will actually be more citizens labeled as enemies than actual enemies, so that  $m^* > \alpha$  can occur under certain circumstances. The implication of this point is that, for low quality information, eliminations in excess of the true number of enemies would be a rational choice of the dictator. Even though the dictator knows the number of true enemies,  $\alpha$ , he also knows that his information ( $\rho$ ) is of so low quality that he is better off eliminating more people than he actually knows to be enemies, fully aware that he is eliminating passives in the process. In particular, the extent of eliminations of passive citizens can be stated as  $r = \frac{m^*}{\alpha}$ , i.e. the ratio of those labeled enemies in equilibrium,  $m^*$ , to the actual share of enemies  $\alpha$ . To complete this logic, consider the limiting case of perfect information,  $\rho = 1$ . Now  $m^* = \alpha - \theta$ , i.e. the dictator simply eliminates the number of labelled enemies – all "true" enemies – he needs to eliminate to exactly avoid revolt.

Using (2) through (7), we obtain the following results concerning the impact of the share of enemies, the security of the dictator, and the quality of information on eliminations and elimination of passives.

**Elimination of passives** Straightforward calculations yield that  $\frac{\partial r}{\partial \theta} < 0$  (with a more secure dictator, repression is applied to fewer passive people, given the same proportion of enemies) and  $\frac{\partial r}{\partial \rho} < 0$  (higher quality information brings the number of eliminated citizens closer to the actual number of eliminated enemies). In other words, when an "enemy type" has clearly visible characteristics (e.g., peasant household having livestock), then repression is more targeted and takes less toll on passives.

**Number of eliminations** Next, we turn to determinants of the number of eliminations. First we find  $\frac{\partial m^*}{\partial \rho} = -\frac{\alpha - \theta}{(\rho - \theta)^2} < 0$ , implying that better quality information results in fewer eliminations. Furthermore,  $\frac{\partial m^*}{\partial \alpha} > 0$ , so that a larger share of enemies requires a larger  $m^*$ , an entirely intuitive result. Finally, the effect of an increase in the dictator's security (larger  $\theta$ ) on eliminations is  $\frac{\partial m^*}{\partial \theta} < 0$ , suggesting that a more secure dictator will eliminate fewer citizens, which is also intuitively plausible.

The following Proposition summarizes our comparative statics results in the case where the dictator chooses repression.

**Proposition 2.** *Given that the dictator chooses repression in the dictatorial eliminations model:*

1. *The rate of elimination is determined by  $m^*(\rho, \alpha, \theta)$  given in (7).*
2. *The equilibrium rate of elimination  $m^*(\rho, \alpha, \theta)$  increases with the number of enemies,  $\alpha$ , and decreases with the quality of information  $\rho$  and the dictator's security (revolution threshold  $\theta$ )*
3. *The elimination of passives,  $r$ , decreases with the dictator's security (revolution threshold  $\theta$ ) and the quality of information  $\rho$ .*

The central properties of the elimination model are illustrated in Figure 3. For a given level of regime enemies,  $\alpha$ , the number of eliminations falls as the dictators security increases (i.e. an

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<sup>21</sup>We do not examine the case of negative eliminations whereby the dictator breeds supporters via Third Reich-like population policies. Our parameter restrictions were designed to rule out this case.

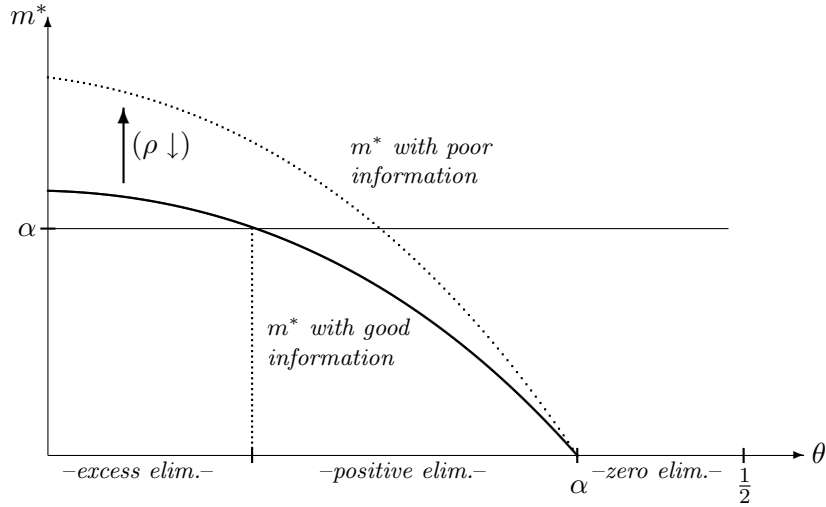


Figure 3: Eliminations  $m^*$  as a function of dictators security (revolution constraint  $\theta$ )

increase in the revolution constraint,  $\theta$ ). Eventually for a sufficiently high  $\theta$ , we have  $\theta > \alpha$ , so, that the revolution threshold holds, and no eliminations are ordered. On the other hand, a zone of excess eliminations ( $m^*$  in excess of the true or believed to be true number of total enemies in the population,  $\alpha$ ) is to be expected for low levels of  $\theta$ , i.e. a small dictatorial power-base. A lower  $\rho$  increases the number of eliminations and the zone of excess eliminations.

**Convictions to arrests ratio** The above analysis can be used to produce further verifiable predictions. The model assumes that the dictator directly targets  $m^*$  eliminations of those citizens labeled as enemies as his choice variable. We can alternatively suppose that the dictator uses arrests,  $n$ , as his choice variable and eliminates those convicted (labeled) as enemies out of the total number of arrested citizens. Now the dictator no longer screens (labels) the entire population but only  $n$  people. The information parameter continues to measure the probability of correctly labeling an enemy from among those arrested. For purposes of simplification, we assume that arrests  $n$  are random; therefore,  $\rho n$  actual enemies will be correctly convicted, while  $(1 - \rho)(1 - \alpha)n$  passives will be wrongfully convicted. Accordingly, when the dictators choice variable is the number of arrests, the post intervention share of enemies in the population becomes:  $\frac{\alpha(1-\rho\alpha)}{1-\alpha(\rho\alpha+(1-\rho)(1-\alpha))}$ . Setting this expression equal to  $\theta$  and solving for  $n$ , yields

$$n^* = \max \left\{ \frac{\alpha - \theta}{\rho(\alpha + \theta - 2\alpha\theta) - \theta(1 - \alpha)}, 0 \right\}. \quad (9)$$

as the dictator's optimal choice for the number of arrests. The actual number of convictions will be  $\rho\alpha n^* + (1 - \rho)(1 - \alpha)n^*$ , and the convictions to arrests ratio simply becomes  $k = 1 - \alpha - \rho(1 - 2\alpha)$ . The comparative static results follow directly and are stated in proposition 3:

**Proposition 3.** *The conviction-to-arrests ratio  $k$  increases with the share of enemies,  $\alpha$ , and decreases with the quality of information,  $\rho$ , but is independent of the dictators security (revolution constraint  $\theta$ ).*

## 4 Applying and Evaluating the Model

If we had hundreds of dictatorial repressions to study, we could “test” the dictatorial eliminations model by subjecting these hundreds of cases to statistical inference. For each of these hundreds of repressions, we would have constellations of parameters with which to test their significance and signs. We have here only three repressions carried out in one country within a decade, meaning that, at best, we can determine whether the stylized facts are consistent with the model. The eliminations model is based on three key parameters,  $p$ ,  $\alpha$ , and  $\theta$ , which determine eliminations  $m^*$ , over-reporting  $r$ , and the convictions to arrests ratio  $k$  under the “arrests” variant, when we are in the repression path.

### 4.1 The Stylized Facts

**Rejection of democracy** Lenin’s mistaken participation in elections to the Constituent Assembly in 1918 was followed by its dissolution and the rejection of even modest forms of local democracy by Stalin and his successors (see Section 2.1).

It was recognition – reinforced by regular reports of the secret police – that the policy stance of average urban and rural residents was distant from that of the ruling elite that limited subsequent democratic experiments to modest local elections with a slate from only one party. The entire rationale of the Bolshevik revolution was to introduce a one-party dictatorship that would take policy positions to create socialism, industrialize, collectivize a reluctant peasantry, and eliminate class enemies. The party’s policy position,  $\bar{\phi}_D$ , was therefore fixed and could not be adapted to the median voter, whose policy position was quite different. The experience of the vote for the Constituent Assembly demonstrated that the median voter was not prepared to accept the Bolshevik policy stance, even when presented in its most attractive form.

It is noteworthy that, from the first days of Bolshevik power, the opposition platform was an alternative economic-political system rather than rival candidates, although the closest to an opposition “candidate” was Leon Trotsky, who accepted the Bolshevik model but favored a form of party democracy.

**Eliminations ( $m^*$ )** Table 4 presents the four-month “limits” for dekulakization (1930-1932) and for mass operations (1937-1938) and their fulfillment. We also present the results of national operations, which were conducted without limits. We present results only for the USSR as a whole, noting that regional variation could be the topic of a separate investigation.

**Table 4: Elimination limits and fulfillment for three Repression Waves**

	<b>Executions</b>	<b>Prison terms</b>	<b>Total “eliminations”</b>
Dekulakization, Limits for January to May, 1930 (fulfillment in parentheses)	not given (18,000)	not given (47,000)	60,000 (65,000)
Mass Operations, Limits for August to November, 1937 (fulfillment in parentheses)	76,000 (352,520)	193,000 (319,811)	269,000 (672,331)
National Operations (1937-38) (fulfillment in parentheses)	No quantitative limits (247,175)	No quantitative limits (96,556)	No quantitative limits (343,731)

Source: Gregory, *Terror by Quota*; Iunge and Binner, p. 217 for national operations.

The stylized facts of eliminations are straightforward: The elimination quotas of the mass operations of 1937 overshadowed substantially those of dekulakization. The results of mass operations (672,000 victims) overwhelmed both those of dekulakization (65,000 victims) and national operations (despite the fact that 344,000 were repressed). Given that our model rules out principal-agent conflicts, we assume that the huge discrepancies between plan and fulfillment for the 1937 mass operations campaign were the consequence of Stalin encouraging agents to raise limits above those originally set – an assumption that appears consistent with the facts, but is deserving of further study.<sup>22</sup>

**Elimination of Passives ( $r$ )** While there are no aggregate statistics on the convictions of innocents (“passives”) during the terror campaigns, the archives provide clear evidence that  $r$  was higher in 1937-38 than under Dekulakization in 1930-32. Furthermore, almost by definition, there were no “wrong labels” in the national operations, unless some victims, such as Russians, were classified as Poles, either by mistake or on purpose.<sup>23</sup>

There was an official understanding during the 1937-1938 mass operations that a large number of innocent parties were to be convicted. Stalin, in announcing the Great Terror, introduced his “five percent rule” – that loyal citizens should report class enemies even if they are correct only five percent of the time. “Your task is to check people at work and if something is not right, you must report it. Every member of the party, honest non-party members, citizen of the Soviet Union not only has the right but is obligated to report the deficiencies he sees. If they are right, maybe only 5 percent of the time, this is nevertheless bread.”<sup>24</sup> Stalin applied his “five percent rule” to the party itself: “Every communist is a possible hidden enemy. And because it is not easy to recognize the enemy, the goal is achieved even if only 5 percent of those killed are truly enemies.” (Baberowski 2003:174-5). In March 1937, Ezhov reiterated Stalin’s rule, telling his officials that it is “better that ten innocent people should suffer than one spy get away. When you chop wood, chips fly” (Montefiore, 2003: 194). Again Ezhov: “If during this operation an extra thousand people will be shot, that is not such a big deal.” (Jansen and Petrov 2002: 84-85). Dekulakization was a quite different matter. There was a genuine concern that innocents – poor and middle farmers – would be dekulakized. On February 25, 1930, the Politburo issued the following warning: “In a number of localities there have been strictly forbidden instances of dekulakization of middle-peasant households, which constitute the crudest violation of the party line and will lead inevitably to difficulties in collectivizing agriculture.” (Ivnitsky, 2000: 223). A March 10 order complained of “distortions of the policy of the party,” as a result of which “a number of middle-peasant households were dekulakized and in some regions the percent dekulakized reached 15 percent.” (Ivnitsky, 2000: 303). A March 18, 1930 directive from the supreme court complained about the “sentencing of a substantial number of middle and even poor peasants without any evidence establishing their guilt” and “the cavalier sentencing to death for counter-revolutionary offenses.” (Ivnitsky 200: 312). The OGPU itself processed complaints from dekulakized peasants claiming to be poor and middle peasants, and even examined tax and other documents in support of their claim. (Ivnitsky 200: 349).

The reaction to complaints from relatives of victims of 1937-1938 mass operations was indifference. As arrests of innocent victims multiplied, disbelieving relatives flooded the complaints

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<sup>22</sup>Stalin approved most executions personally and also personally approved increases in regional limits. Moreover, he was able to stop mass operations in mid November 1938 with one decree dated November 17, 1938 entitled “About arrests, prosecutorial oversight and the conduct of investigations (Vert and Mironenko, 2004), pp.305-308.

<sup>23</sup>For example, in the Perm region, the regional NKVD arrested 4,142 persons under German national operations. It was later demonstrated that only 390 were indeed Germans. On this see Leibovich (2006, pp.52).

<sup>24</sup>V.N. Khaustov, V.P. Naumov, and N.S. Plotnikov (eds.), p. 209.

bureau of the USSR Prosecutor at a rate of 50,000 to 60,000 letters per month, protesting the innocence of the arrested person.<sup>25</sup> There were no special commissions established to assess these complaints and even top party officials could provide little help to victims (such as the teacher of Molotov’s children).

There is no record of any official attempt to determine whether those repressed under national operations were “innocent.” Guilt was in the fact of ethnicity, not in actions.

**Convictions to Arrests Ratio ( $k$ )** We have seen above that convictions to arrests ratios derived from using the “arrests” specification of our model is another perspective on dictatorial systems related to the quality of information and the true (or believed to be true) number of regime enemies. Empirically, the archives allow us to express conviction to arrest ratios for the three repression waves. Roughly one third of those arrested by the OGPU were executed or imprisoned in 1930, while, in 1937, eighty five percent of those arrested by the NKVD were either executed or imprisoned, hence a much higher  $k$ . We do not have explicit information on convictions-to-arrest ratios under National Operations, but fragmentary evidence suggests that arrest was tantamount to conviction.

**Further Stylized Facts** There are a number of other stylized facts that deserve mention: First, “national operations” distinguished themselves from dekulakization and mass operations in that they were conducted without limits and applied to all persons identified as part of the national group, not simply to the “most fanatical.” Second, dekulakization and national operation victims were selected locally with little supervision from superiors. Only during mass operations did superiors request and approve lists for arrests and punishments, even if this oversight was often lax. The higher the victim the stricter the oversight. Third, the sentence of choice of mass operations and national operations was execution, while the sentence of choice of dekulakization was imprisonment (18,000 executions versus 47,000 imprisonments). Deportation was widely used in dekulakization and national operations but scarcely used during mass operations. Fourth, the major terror operations were carried out as “campaigns” to be executed quickly (within three or four months) and under extreme pressure. Each had a distinct starting and ending point and all resources were to be concentrated on the operation during this period of time. Fifth, unlike economic planning, there was a tendency to lobby for high limits. Economic managers, on the other hand, lobbied for softer targets and an easier life.

## 4.2 The Parameters and the Three Repressions

The rates of eliminations, convictions to arrests, and elimination of passives are determined in the model by the parameters  $\alpha$ ,  $\theta$ , and  $\rho$ . The model assumes that they are known to the dictator. Furthermore, the decision to repress or to democratize depends on the cost of repression, the cost of revolt, uncertainty in elections and the policy stance of the dictator versus that of the median voter or opposition candidate. The archives offer the following evidence about the state of these key parameters in 1930-1932 and in 1937-1938:

**Security of the dictator** The revolution constraint parameter  $\theta$  measures how secure the dictator felt himself to be. Stalin was more “secure” in 1937 than in 1930 as measured by his domination of decision making and his control of the military and state security forces. In 1930, Stalin had just achieved a Politburo majority to push through collectivization and

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<sup>25</sup>Istoria Stalinskogo Gulaga, Vol. I, Document 90. Pis'mo A. Ya. Vyshenskogo V. M. Molotovu ob organizatsii raboty po rassmotreniiu zhalob osuzhdennykh v Prokurature RSFSR. January 15, 1939.

forced industrialization, but he lacked the political strength to physically liquidate his political opponents. Although Stalin was “first among equals” on the Politburo, the Politburo met regularly and would occasionally override Stalin’s proposals (Gregory, 2004: 68). Stalin had still not created a state security service of his own design. A major source of uncertainty was whether Stalin’s Great Break policies would succeed, as his defeated opponent hoped for from the sidelines of power.

In contrast, by 1936, Stalin was a “secure” dictator (higher  $\theta$ ). His high-level political opponents had been removed; most had been or were in the process of being executed. The Politburo had ceased to meet and decisions were made by Stalin or by small groups of trusted associates as directed by Stalin. His NKVD was in the hands of a fanatical loyalist, Ezhov, who headed an NKVD personally designed by Stalin in 1934. Even the slightest disagreements with Stalin were declared acts of counter revolution. Although Stalin could eliminate any of his closest associates, including heads of his secret police on moment’s notice, there is no record of any serious threat to Stalin’s life or of any attempt by a group of his associates to organize a coup against him.

As the threat of war increased, Stalin’s “security” began to diminish. Although he had effective control of the state and party apparatus, an enemy power could end his power by a military defeat or diminish it severely by linking with his domestic enemies (Harrison, 2007). Particularly vulnerable were border regions populated by ethnic minorities, whose sympathies could lie with a foreign power. War was one of the few events that could shake Stalin’s hold on the party. After the early disastrous defeats on the German front, Stalin was said to have expected dismissal by his Politburo colleagues (Service, 2005).

Stalin’s concern about the effect of war on domestic power was not new. His OGPU and NKVD had monitored rumors of war by region among the population since at least 1927 (Khristoforov et al., 2003: 413). Spreading rumors of war in the Gulag was considered a criminal offense (Brodsky, 2002: 472). Stalin’s fear of a fifth column was particularly strong, and he considered the multi-ethnic Soviet Union as a breeding ground for traitors. As the war approached his perception, which is what matters for the dictator’s actions, of  $\theta$  fell. Whereas a kulak could incrementally harm Stalinist power, a fifth-columnist could do severe damage in Stalin’s words: “It takes one thousand to build a bridge and one to destroy it.” (Khlevnyuk, forthcoming, chap. 4.) By the start of the German offensive in June of 1941, Stalin’s “security” was at a low point, plummeting from peaks in 1936.

**The number of Enemies** The parameter  $\alpha$  captures the number of “enemies” in the population. The concept of “enemy” in a dictatorship is subjective and depends on the dictator’s interpretation in the absence of an established rule of law. The more expansive the definition, the higher the share of the population perceived as regime enemies. (It should be recalled that we are speaking about political enemies and not ordinary criminals). Article 58 of the RSFSR Criminal Code offered Stalin wide latitude.<sup>26</sup> Put differently, an enemy of the people was whomever Stalin decided was an enemy.

The archives provide ample evidence that there were more “enemies” in 1937 than in 1930, although the definition of “enemy” depends on the dictator’s definition. Yagoda’s list of enemies, in his operational decree of February 2, 1930, included “fanatical and active kulaks”, supporters of the czarist regime (“white officers, repatriates”), religious leaders, and landowners and speculators. The number of sectarians, landowners, and former white officers in Soviet society in 1930 would have been relatively small. The number of kulak households (defined primarily by

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<sup>26</sup>Hugo S. Cunningham, Criminal Code of the RSFSR, copyright 2000. Internet site <http://www.cyberussr.com/rus/uk-rsfsr.html>



acreage, livestock, and the use of hired labor), was large.<sup>27</sup> Stalin's 1930 Politburo decree called for the execution or imprisonment of 60,000 of the most "fanatical and active" kulaks.<sup>28</sup> Other dangerous elements (150,000 households) were to be "dekulakized" by deportation or resettlement – a partial elimination, for they could escape or serve out their term of deportation and return. The dekulakization decree set as a longer term goal of dekulakization of 3 to 5 percent of peasant households, by deportation, expropriation, or resettlement. Stalin was therefore content to let the majority of kulaks survive, albeit many in remote regions where they could presumably do little harm. Clearly, Stalin did not think that there were only 60,000 "fanatical and active" opponents in 1930, but this figure was his estimate of the number of enemies needing to be dealt with immediately.

The number of Stalin's enemies was larger in 1937 because dekulakization had eliminated few of his opponents. They were still alive and, angered by their earlier deportation and imprisonment, were more dangerous than ever. Despite organized efforts to destroy religion, more than half the Russian population declared themselves as believers in the 1937 census (Shearer, forthcoming). The large execution and imprisonment quotas issued by Ezhov in July of 1937 for the first four months of operations (one quarter of a million) provide a sense for the vast number of "the most hostile" enemies of the Soviet state as perceived by Stalin. The initial elimination quotas rose to three quarters of a million within a few months as Stalin and Ezhov approved requests for higher limits from the regions, thus  $\alpha$  increased during the operation.

Stalin's sense of ever-growing alarm was fed by the fact of impending war, which meant that the USSR, with its vast borderlands, could be infiltrated by enemy agents, many of whom could be recruited from the ethnic minorities living in border regions (Khlevnyuk, forthcoming; Harrison (ed.), chapter 1). Stalin's worst nightmare of a vast coalition of domestic and foreign enemies could materialize.

Stalin segmented enemies in his dekulakization and national operations. Dekulakization was directed against the "most dangerous" rural enemies; others were unaffected. Stalin hoped that poor peasants would accept his policy stance. National operations were directed against specific ethnic populations largely in border regions. Others were unaffected. Only in mass operations was virtually any Soviet citizen a potential target, although many of them would not have known so at the time.

**Quality of Information** The probability of correctly labeling enemies,  $\rho$ , would be expected, at first glance, to improve over time as the dictator's intelligence services gathered more information on the citizenry. Indeed, the volume of information grew exponentially between 1930 and 1937. NKVD operational officers maintained surveillance of suspect individuals and special intelligence officials kept track of the military.<sup>29</sup> The approximately one and a half million party members who had left the party between 1922 and 1935 "represented a huge pool of self-declared 'enemies of the people' for the NKVD" (Lewin, 2005: 45). By the end of the 1930s, 50 million Soviet citizens had internal passports, which listed their backgrounds, nationality, class, and other characteristics (Shearer, 2004: 846). Ezhov had 27,650 NKVD "residents" who received information from some 500,000 informants (Shearer, 2004: 846).

Despite these quantitative advances, the probability of correctly labeling an enemy was

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<sup>27</sup>Although Molotov, the commission head, argued that kulak households accounted for 5 percent of peasant households, or a total of 1.2 million, planning and implementation of dekulakization was oriented towards the lower figure. On this, see Ivnitsky 2000, pp.13, 18.

<sup>28</sup>This percentage assumes that only the household head (and not two or more household members) could fall in the category 1 account.

<sup>29</sup>Fond 3, op. 74, del.21, l. 9.

lower during mass operations in 1937 than in 1930-1932 for several reasons. First, the target of dekulakization was relatively easy to identify based on landholdings, active sectarianism, or service in the white army, and their numbers were even known by the statistical administration. The list of enemies prepared by Ezhov for his July 30, 1937 decree was extremely vague, dealing in generalities, such as “former kulaks, socially dangerous elements, criminals, marginal elements, and those circulating in criminal circles.” Second, in the case of dekulakization, local authorities selected victims, and denunciations were largely against those households that had more assets – the very targets of dekulakization. In the case of the mass operations of 1937-1938, denunciations played an even greater role and, with an inability to determine whether the denunciation was self serving or civic, there were few constraints on opportunism. The NKVD itself opportunistically selected victims with large apartments that became a part of the NKVD inventory (Vatlin, 2004). Moreover, most denunciations were obtained through torture until interogees revealed fellow “conspirators”, often giving names of friends and even casual acquaintances.

As Stalin turned to national operations, there was a steep increase in the quality of information simply because nationality was registered on internal passports, census authorities had kept track of nationalities and where they resided, and employers listed nationality in the work books of their employees. If Stalin ordered the repression of Volga Germans or of Lithuanian or Polish citizens residing in the USSR, they were easy to find and identify. Moreover, there was little problem of identifying which of them should be repressed, for the targets of national operations were typically the entire affected population. One Pole was told: “We in the NKVD know this and have nothing against you but it is necessary to sign the protocol because you are a Pole by nationality.” (Vatlin, 2004: 43). In another case, the NKVD arrested a Jew with a Polish sounding name by listing him as a Pole to get his apartment, but we imagine such cases were rare.

Table 5 summarizes the states of three key parameters in 1930, 1937, and on the eve of the war (1940) showing that they were quite different.

**Table 5: Comparison of 1930, 1937, 1940: Key parameters of the model**

	<b>1930 dekulakization</b>	<b>1937 mass operations</b>	<b>National operations, 1937-1945</b>
Security ( $\theta$ )	Clearly less	Clearly more	Less than in 1937
Perception of enemies ( $\alpha$ )	3 percent of rural households	A large number poorly defined (enemies everywhere and carefully hidden)	A large number easily identified ethnic minorities
Information ( $\rho$ )	Less in quantity, higher in quality	More in quantity, less in quality	Extremely high quality

### 4.3 Insights from Applying the Model

Previous explanations for mass repressions that have been offered by historians, range from insanity and paranoia to pressure from regional party officials (if correct, a very serious miscalculation because all but two of the early regional party secretaries perished), see Getty (1991). Further explanations focus on Stalin’s disenchantment with the work ethic of population, or the need to rid the country of any potential fifth columnists given the impending war (Khlevnyuk, forthcoming). Some economists have offered explanations, such as the need to free up party positions for a new generation of activists (Lazarev, 2005) or to replace all Old Bolsheviks with

loyalists (Wintrobe, 2000), but these relate to Stalin's purge of the party elite, not to mass operations against ordinary citizens – the subject of the present paper.

The present model, in contrast, suggests that the stylized fact of more eliminations in 1937-1938 than in 1930-1932 may stem from the effects of a higher percentage of enemies and lower quality information (in 1937-1938 compared to 1930-1932) that outweigh the effect of a more secure dictator in the latter period. We would argue that this result is “likely,” because of the great difficulty of defining what constituted an enemy in 1937-1938 and the dictator's conviction in 1937 that the number of enemies both within and outside the country was alarming and growing. During the period 1937-1938, mass operations dominated the national operations that were just beginning. Of the three repression waves, we know the least about national operations, which became co-mingled with mass operations. Yet the eliminations of 1937-1938 national operations accounted for a remarkable one third of first and second category victims during this period (Iunge and Binner, 2003).

The greater elimination of “passives” in 1937-1938 is often used as proof of Stalin's irrationality or insanity. Our model suggests, however, that any dictator, who shares Stalin's goal of remaining in power, would deliberately eliminate passives when the quality of information is low, such as during the mass operations of 1937. In 1930 and during national operations, it was easier to identify “enemies”. During national operations the identification of enemies was so clear cut that the choice of victims and the operation itself required little or no central direction, such as limits.

The fact that national operations were conducted without central “limits” could be explained by information quality. Under national operations, enemies were defined by nationality, location, or membership in national organizations. If enemies can be labeled with a probability of one, choices become routine and do not require guidance from above, such as “limits.” In fact, the apparent practice was for the NKVD to consult population records to determine the numbers of targeted nationalities to repress. They simply had to decide whether to execute, imprison, or deport – a decision that appeared to be in their own hands.

#### 4.4 Stepping Outside the Model

Our model looks at three snapshots in time, 1930-1932, 1937-1938, and 1937-1940, because we presume considerable differences in the model's parameters in the different periods. We also examine the early years of Bolshevik rule to capture attitudes towards democratization. However, our model does not allow for dynamic effects or for interrelationships among parameters.

**Endogeneity of the number of enemies** One key interrelationship that is ignored is the effect of eliminations on the percentage of enemies. Would a rational dictator not be concerned that eliminations would increase the percentage of enemies? In fact, eliminations could have either a deterrent effect (frighten perspective enemies) or embolden them to become enemies.

**Secrecy** If Stalin had wished to use repression campaigns as a deterrent, he would have openly carried out such operations under the full glare of a state controlled press. In all of his repression waves, Stalin chose the course of secrecy, suggesting a concern that such operations would increase the number of enemies. In the case of dekulakization, decisions to arrest and expel kulaks were also made in strict secrecy and never referred to in the press (Davies and Wheatcroft 2004: 39). Every effort was made not to anger members of the Red Army; their mail was checked and their families protected as much as possible from dekulakization. Unlike in the

later mass operations, Stalin insured against overzealousness. Requests for higher limits were not entertained.

The mass operations of the Great Terror were also conducted in secret, if it was at all possible to keep the arrests of almost a million citizens secret. Arrests were made at night if possible; executions were carried out in remote locations, and torture was done at night after ordinary office staff had left. Relatives inquiring into the fate of loved ones who had been executed were told that they had received prison sentences.

National operations were also carried out in speed and secrecy, also to prevent organized resistance, as is evidenced by Beria's plan to deport 300,000 Chechens in the first three days and 150,000 in the remaining four days. In his communication to Stalin of February 17, 1944, Beria notes that "some of the local population believe the official story that troops are arriving for maneuvers" but expressed doubt that they could be fooled for long. (Khaustov, Naumov, and Plotnikova, 2006: 413).

**Overshooting** Our model also does not explain the vast overshooting of the original quotas of the mass operations of 1937 and the relatively exact plan fulfillment of dekulakization. There are several possible explanations for overshooting: One is that the dictator was simply raising his sights as the campaign progressed and desired more victims than originally intended; second, the terror campaign set off spontaneous processes that automatically lead to overshooting; or third the arrest and interrogation process generated new information on the number of enemies.

Whatever the case, we are convinced that Stalin maintained general control of the process and that a result totally contrary to his directions was very unlikely. During the Great Terror, Ezhov forwarded to Stalin requests for limit increases from the regions, although actual executions outpaced approvals at times. Stalin personally approved higher-level arrests and executions writing in bold pencil: "For the execution of all 138. I. Stalin." The most convincing evidence of Stalin's control is that he shut down mass operations with one memo, which disbanded troikas and mass arrests.<sup>30</sup> Mass operations could therefore get out of hand, but not too much out of hand.

The mass operations process itself generated a dynamic of growth. The Great Terror operation was turned over to a zealous administrator (Ezhov), who let it be known that he would approve more generous limits and encouraged socialist competition for the greatest number of victims among his regional subordinates. Central decrees left regional authorities to decide whether to petition for higher quotas, and, even more difficult, to select the actual victims. Requests from regional party bureaus to "raise the limits of victims to be repressed according to NKVD decree No. 00447" flooded the Politburo and were routinely approved.<sup>31</sup> Order No. 00477 set Western Siberia's quota at 5,000 first-category and 12,000 second-category victims, but regional officials, fearing charges of "operational inertness" joined the socialist competition to raise their quotas. Western Siberian NKVD officials "reached ecstasy" when they attained second place among the various regions in liquidating enemies of the people (Jansen and Petrov 2002: 92). By October of 1938, they had arrested more than 25,000 and almost 14,000 of these

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<sup>30</sup>Decree of the Council of Peoples' Commissars and the Central Committee of the All-Russian Communist Party VCP(b) "About arrests, prosecutorial oversight and the conduct of investigations," November 17, 1938. In *Istoriia Stalinskogo Gulaga*, Vol. 1, Document 81, pp. 305-308.

<sup>31</sup>"Protocol No. 51, September 2, 1937: To change the July 10 1937 decision of the Central Committee to allow the Kirov Municipal Committee to raise the number of persons to be repressed in the first category [execution] up to 900 persons," or Protocol No. 54 of October 8, 1937: "To approve the proposal of the Gorky Oblast Committee to raise the number of those to be repressed in the first category by 1000 persons." (Vert and Mironenko 2004, Document 71: *Vypiski iz protokolov zasedaniy Politbiuro VKP(b) po voprosam uvelicheniia limitov repressirovannykh po prikazu NKVD #00447*. September 2- August 29, 1937.

had been sentenced to death (Jansen and Petrov 2002: 89).

Any perceived failure to go after class enemies with sufficient zeal could be interpreted as sympathy with class enemies. Therefore the basic survival strategy was to be more zealous and brutal than others. If you let one person go who was later “proven” to be a class enemy, your negligence could be grounds for your own repression. Ezhov replaced the Ukrainian NKVD boss despite the fact that he had arrested 160,000 persons, with a more fanatical official (Vassiliev 2005). Each participant in the terror process knew quite well that they were potential victims and could best avoid victim hood by demonstrating their own zeal and loyalty.

Another growth dynamic was that terror operators grew their lists of victims to protect themselves on purely practical grounds from charges on lack of vigilance. The NKVD required confessions to fulfill their terror plans. Interrogations were supposed to produce confessions, and part of the confession process was the implication of other class enemies. The accused leader of “counter-revolutionary espionage diversionist activity” in Novosibirsk “admitted his own guilt and unmasked the accused Semianov (case #39), Koshina (cases #40-45), Ageikin (#47,48), Pantiukhin (Case #69 and the witnesses: Portniagin (Case #50) and Fedorov (Case # 51,52).” (Trenin, 2004: 298-9). In this case, one interrogation implicated an additional five conspirators and two “witnesses” with some knowledge of the conspiracy. If each of these were to implicate the same number then we have an exponential growth of class enemies. If the local NKVD office did not, as a consequence, ask for supplemental limits to deal with these new names, they could be accused of criminal conspiracies themselves.

**Political competition** The democratization path of our model posits a dictator deciding whether to engage in elections with a political rival. we pointed out earlier that, after an initial encounter with elections Lenin, Stalin and his successors eschewed democracy. The only real political “competition” that occurred during Stalin’s reign was with the appeal of Hitler’s Germany in the border regions of the Soviet Union. Soviet citizens of Ukraine, Belorussia and other border regions were confronted with the a choice of lesser of evils - Stalin or Hitler, and Stalin’s national operations were designed to eliminate those occupying border regions most likely to choose in favor of Hitler.

Although Stalin did not have to change his policy stance during collectivization and Great Terror, he did have to do so as the German invasion threatened. At that point, his propaganda machine began to emphasize nationalistic and patriotic themes (versus Bolshevik-socialist themes). The ruling body was no longer the Politburo of the Central Committee, but the State Defence Committee that Stalin personally headed.

In fact the ideology monopoly of the communist party was not subject to challenge from within until its head, General Secretary Mikhail Gorbachev, challenged it himself in 1991, proposing to elevate himself to the head of state (President), while eliminating the communist party’s “leading role”. The political challenge to the Soviet system was never from rival candidates but from rival political-economic system.

## 5 Conclusions

Non-economists (and many economists also) may object to the use of rational choice to model historical events of unimaginable cruelty and brutality that appear, at first glance, to defy rational explanations. The easiest explanation is that the occurrence of repression on this scale must be due to some highly unusual configuration of events and personalities, with emphasis on the personal characteristics of those responsible. If holocausts, ethnic cleansing, cultural

revolutions, or Great Terrors did not repeat themselves, attempts to model them (such as in this paper) would be hollow. However, the fact that such tragedies do repeat themselves and appear to be specific to certain types of economic and political systems gives economists license to delve into these matters.

We have not “proved” that Stalin used “our” rational choice model in which he trimmed the population when he felt the revolution constraint had been exceeded. What we have shown is that he conducted three mass terror operations between 1930 and 1938 with different model parameters and that each operation is “consistent” with the underlying model given the constellation of parameters.

What is more is that we show that an extremely simple model, which is devoid of complex behavioral assumptions but instead bases itself rather on a set of accounting identities, to which we have added the fact of imperfect information, can already yield fairly powerful conclusions, the most important being that a rational dictator will accept the execution and imprisonment of large numbers of innocent victims. We provide formerly secret material from the Soviet archives to demonstrate that this was even official policy.

We again emphasize the strict distinction between rationality and morality. In this work, we simply accept the dictator’s objective function – the exercise and maintenance of raw power. The objective function itself may be immoral, but we must accept it as given.

A final comment: Stalin executed and imprisoned millions of ordinary people, who – viewed by the outside observer and with the benefits of historic hindsight – posed absolutely no threat to him or to his regime. Stalin reserved the right to repress those whom he felt might be a threat in the future but even with this expanded version, it is hard to imagine that many of his victims posed even a future threat. It is this fact that has been used to support the insanity explanation of Stalin’s excesses; yet we, as economists, are obliged not only to accept Stalin’s objective function but also his definition and perception of what and whom constituted a threat to him. For us to attempt to differentiate real from imagined enemies would, however, take us down a very slippery slope.

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## Appendix – Not intended for publication

### Proof of Proposition 1

*Proof.* (1) Suppose that

$$\begin{aligned} & 1 - \alpha - \bar{\phi}_D + k - c(\theta - \alpha) \left( \theta - \frac{\rho\alpha}{\rho\alpha + (1-\rho)(1-\alpha)} \right)^{-1} \\ & > \frac{1}{4} (1 - \alpha - \bar{\phi}_D) (1 - (1 - \alpha - \bar{\phi}_D) (1 - (1 + \gamma)\alpha)), \end{aligned} \quad (10)$$

i.e. the dictator chooses repression, the level of repression is optimal,  $m^* = (\theta - \alpha) \left( \theta - \frac{\rho\alpha}{\rho\alpha + (1-\rho)(1-\alpha)} \right)^{-1}$ , and  $v_p(\phi_{Dic}^*) - v_p(\bar{\phi}_{med}) = k$ . In equilibrium, citizens correctly anticipate that, given  $m^*$ , if all remaining enemies revolt but all passives obey, the revolution fails. The argument in the body text demonstrates that, given that the dictator's policy satisfies  $v_p(\phi_{Dic}^*) - v_p(\bar{\phi}_{med}) \leq \kappa$ , passives indeed obey; therefore, this is indeed an SPNE.

It is straightforward to show that if citizens strategy is to revolt in period 2 when their expected utility is higher under democracy than under dictatorship and their revolt has a chance to succeed (i.e. the number of those who revolt exceeds  $\theta$ ), the dictator's optimal response is to repress when (10) is fulfilled, in which case he chooses  $m^*$  as the repression level, and democratize otherwise.

There is a finite number of parameters' values  $(\alpha, \rho, c, k, \theta)$  such that inequality (10) becomes equality, and the dictator is therefore indifferent between democracy and dictatorship. Since any finite set has the Lebesgue measure zero, the proposition holds for the generic set of parameters.

(2) Define functions  $f(x) = 1 - \alpha + k - c(\alpha - \theta) \left( \frac{\rho\alpha}{\rho\alpha + (1-\rho)(1-\alpha)} - \theta \right)^{-1} - x$  and

$$\begin{aligned} g(x) &= \frac{1}{4} (1 - \alpha - x) (1 - (1 - \alpha - x) (1 - (1 + \gamma)\alpha)) = \\ & \quad \frac{1}{4} (\alpha(\gamma + 1) - 1) x^2 + \\ & \quad \left( \frac{1}{2} (\alpha - 1) (\alpha(\gamma + 1) - 1) - \frac{1}{4} \right) x + \\ & \quad \frac{1}{4} (\alpha - 1) ((\alpha - 1) (\alpha(\gamma + 1) - 1) - 1). \end{aligned}$$

We assume that  $1 - \alpha(\gamma + 1) > 0$ .

Let  $\bar{\phi}_D^L, \bar{\phi}_D^H$  satisfy  $f(\bar{\phi}_D^L) = g(\bar{\phi}_D^L)$ ,  $f(\bar{\phi}_D^H) = g(\bar{\phi}_D^H)$ , and  $\bar{\phi}_D^L \leq \bar{\phi}_D^H$ . Such  $\bar{\phi}_D^L, \bar{\phi}_D^H$  exist if and only if

$$\begin{aligned} f\left((\alpha - 1) - \frac{1}{2(\alpha(\gamma + 1) - 1)}\right) &= 1 - \alpha + k - c(\theta - \alpha) \left( \theta - \frac{\rho\alpha}{\rho\alpha + (1-\rho)(1-\alpha)} \right)^{-1} \\ & \quad - \frac{(\alpha - 1) (\alpha(\gamma + 1) - 1) - \frac{1}{2}}{\alpha(\gamma + 1) - 1} \\ &< g\left((\alpha - 1) - \frac{1}{2(\alpha(\gamma + 1) - 1)}\right). \end{aligned}$$

Clearly, this condition is fulfilled for a generic number of parameters and we mainly focus on this case. When the opposite is true, i.e.

$$f\left((\alpha - 1) - \frac{1}{2(\alpha(\gamma + 1) - 1)}\right) > g\left((\alpha - 1) - \frac{1}{2(\alpha(\gamma + 1) - 1)}\right),$$

the dictator has no incentives to democratize whatsoever.

(3)  $g(x)$  is an inverted  $U$ -shaped curve, and  $f(x)$  is a straight line.

$$\begin{aligned} g'(x) &= \frac{1}{2}(\alpha(\gamma + 1) - 1)x + \left(\frac{1}{2}(\alpha - 1)(\alpha(\gamma + 1) - 1) - \frac{1}{4}\right) \\ &= \frac{1}{2}(x + \alpha - 1)(\alpha(\gamma + 1) - 1) - \frac{1}{4}. \end{aligned}$$

Since definitely  $(1 - \alpha)(1 - \alpha(\gamma + 1)) < 1 < \frac{5}{2}$ ,  $\frac{1}{2}(\alpha - 1)(\alpha(\gamma + 1) - 1) - \frac{1}{4} < 1$ , and  $g'(x) < 1$ . Therefore, function  $f(x)$  cuts  $g(x)$  from below at  $\bar{\phi}_D^H$ ; this yields that when either  $f$  shifts up with  $g$  constant or  $g$  shifts down with  $f$  constant,  $\bar{\phi}_D^H$  shifts left.

(a) Consider  $g$  as a function of two variables.

$$\begin{aligned} g(x, \gamma) &= \frac{1}{4}(1 - \alpha - x)(1 - (1 - \alpha - x)(1 - (1 + \gamma)\alpha)). \\ g'_\gamma(x, \gamma) &= \frac{1}{4}\alpha(x + \alpha - 1)^2. \end{aligned}$$

This yields that  $g'_\gamma(x, \gamma) > 0$  for any  $x$ . When  $\gamma$  increases,  $g(x)$  shifts up (i.e. for any  $\gamma < \gamma'$ , and any  $x$ ,  $g(x, \gamma) < g(x, \gamma')$ ), and, therefore,  $\bar{\phi}_D^H$  shifts right and  $\bar{\phi}_D^L$  shifts left.

(b) Suppose that  $k$  increases (revolting becomes more costly). Then  $f$  shifts up, yielding  $\bar{\phi}_D^L$  to shift right and  $\bar{\phi}_D^H$  to shift left.

(c) Suppose that  $c$  increases (repressions become more costly). Then  $f$  shifts down, yielding  $\bar{\phi}_D^L$  to shift left and  $\bar{\phi}_D^H$  to shift right.

(d) Suppose that the probability of correctly determining the enemy,  $\rho$ , increases. Then  $\frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)}$  increases,  $\left(\theta - \frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)}\right)$  decreases,  $(\theta - \alpha)\left(\theta - \frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)}\right)^{-1}$  increases,  $f$  shifts down, yielding  $\bar{\phi}_D^L$  to shift left and  $\bar{\phi}_D^H$  to shift right (repressions become more appealing for the dictator).

(e) First, we observe that  $\frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)} > \alpha$  (this follows from  $\rho > \frac{1}{2}$ ). Therefore

$$\begin{aligned} &\frac{\partial}{\partial \theta} \left( (\theta - \alpha) \left( \theta - \frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)} \right)^{-1} \right) = \\ &\left( \alpha - \frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)} \right) \left( \frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)} - \theta \right)^{-2} < 0. \end{aligned}$$

Now suppose that the revolution threshold,  $\theta$ , increases. Then  $(\alpha - \theta)\left(\frac{\rho\alpha}{\rho\alpha + (1 - \rho)(1 - \alpha)} - \theta\right)^{-1}$  decreases,  $f$  shifts up, yielding  $\bar{\phi}_D^L$  to shift right and  $\bar{\phi}_D^H$  to shift left (repressions more appealing for the dictator).  $\square$