

ARTICLES

## Why Was Lina Shtern Not Executed? An Academic's Strategy of Survival in the Late Stalinist Period

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### Abstract

The Soviet physiologist Lina Solomonovna Shtern (1875–1968) was the only defendant in the trial against the Jewish Antifascist Committee who was not sentenced to death; the circumstances surrounding the court's leniency toward her have long remained unknown. Shtern was sentenced to five years in exile and even her belongings were not confiscated. Her story has become the stuff of legends and much speculation. My paper reconstructs the particular circumstances surrounding the court's decision to give Shtern a more lenient sentence and considers how the politics of science in the late 1940s and early 1950s could have influenced this decision and helped Shtern elaborate her own strategy of survival. I argue that the main reason for sparing Shtern's life was her essay "On Cancer" written in the prison cell in the late 1951–early 1952. My work is based on a careful analysis of documents from Shtern's personal archive and of the context of Soviet and North American medicine.

**Keywords:** Soviet politics of science, The Jewish Anti-Fascist Committee, treatment of cancer in the USSR, Early Cold War in the USSR

### The Only Survivor of the Jewish Anti-Fascist Committee Case

As historians have shown, Stalin-era Soviet scientists developed sophisticated survival strategies that allowed them to continue their lives and work.<sup>1</sup> Scholars' adaptations to Soviet policies have been analyzed, but less so these survival strategies' connection to the Cold War context and Soviet-western competition in science and technology.<sup>2</sup> In this article, I show how the Soviet physiologist Lina Shtern managed to evade a likely death sentence precisely because she was aware of the importance of foreign affairs to Soviet science policy. This case

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<sup>1</sup> See for example: Alexei B. Kojevnikov, *Stalin's Great Science: Adventures of Soviet Physicists* (London, 2004), 99–125, 158–85; P.A. Druzhinin, *Ideologiya i filologiya. Leningrad, 1940-e gody. Dokumental'noe issledovanie*, Vol. 2 (Moscow, 2012), 520–24; Simon Shnol', *Geroi, zlodei, konformisty otechestvennoi nauki* (Moscow, 2012). On survival strategies of the "common people" under Stalinism, see: Sheila Fitzpatrick, *Everyday Stalinism: Ordinary Life in Extraordinary Times, Soviet Russia in the 1930s* (Oxford, 1999); Oleg L. Leibovich, *V gorode M.: Ocherki politicheskoi povsednevnosti sovetskoi provintsii v 40–50-kh gg. XX veka*. 2<sup>nd</sup> ed. (Moscow, 2008).

<sup>2</sup> On Soviet scientific policies and the place of science within the Soviet project, see, for example: Loren R. Graham, *Science, Philosophy, and Human Behavior in the Soviet Union* (New York, 1987); David Holloway, *Stalin and the Bomb: The Soviet Union and Atomic Energy, 1939–1956* (New Haven, 1994); David Holloway, "Physics, the State, and Civil Society in the Soviet Union" *Historical Studies in the Physical and Biological Sciences*, 30, No. 1 (1999): 173–92; Simon Ings, *Stalin and the Scientists: A History of Triumph and Tragedy 1905–1953* (London, 2017).

demonstrates that, in shaping Cold War-era ideology, Soviet leaders were beholden to their own prioritization of scientific-technical competition with the west.

Studies of Stalin's science policy have foregrounded cases in which dubious theoreticians were proclaimed luminaries of science.<sup>3</sup> The valorization of quackery also involved the marginalization and repression of internationally recognized scientists, a phenomenon likewise thoroughly described. This article deals with quite a different case. Its heroine, Lina Shtern, having endured a Lysenkoism-inspired campaign (1948–1949) of her work's denunciation, was first effectively ousted from mainstream Soviet biology. Soon after her arrest in connection with the Jewish Anti-Fascist Committee, she faced the threat of physical destruction or, at the very least, long-term (at her age, scarcely survivable) imprisonment. In this situation, she managed to skillfully play on Soviet leaders' ambitions of overtaking the west, including in the biomedical sciences, and to establish her own indispensability thereto. These efforts, and her particular strategic behavior as a defendant, resulted in a relatively lenient sentence and the subsequent opportunity to return to science, albeit in a far lower status. Shtern's "rescue" may be relevant in analyzing the survival strategies—successful or otherwise—of other Stalin-era scientists.

The Jewish Anti-Fascist Committee (JAC) was founded in 1942 by the Soviet authorities, along with four other such committees. Technically a nongovernmental organization, the JAC was in fact a propagandistic entity (overseen by Sovinformburo, the official news agency), meant to promote the Soviet war effort by strengthening ties between Soviet Jews and western Jewish organizations and soliciting donations that would help the USSR keep fighting in WWII. After the war, with the onset of Stalin's antisemitic campaign, the committee's activities were halted; its leaders were arrested in 1948–49, and in 1952 sentenced to death on false espionage charges.<sup>4</sup>

In accounts of the history of the JAC and its eventual suppression, one case stands out—that of the only member to be charged during the main trial but avoid the death sentence: Lina Solomonovna Shtern, the first female member of the Soviet Academy of Sciences.<sup>5</sup> Minister of State Security Semën Ignat'ev's initial recommendation, submitted to Stalin April 3, 1952, was "ten years' exile in a remote region of the country."<sup>6</sup> The sentence pronounced July 18 was even more lenient: time served (three and a half years), plus five years' exile in "a remote location"; nor was her personal property confiscated.<sup>7</sup>

Lina Shtern (originally, Liba-Leia Shtern) was born in the suburbs of Kovno (now Kaunas, Lithuania) and grew up in Libava (now Liepāja, Latvia). Having attended German-language grammar school in Libava, she entered the University of Geneva in 1898 and defended her thesis on physiology in 1905. In 1918, she became that university's first woman professor and department head. By 1925, when Shtern decided to move to the USSR, she had already gained international recognition as the author of two major concepts in physiology: tissue respiration and the blood-brain barrier. In 1933, living in Moscow, she was awarded a biology PhD without a thesis defense. In 1938 Shtern joined the Communist Party, and in 1939 was

<sup>3</sup> See, for example, Valery N. Soyfer, *Stalin i moshenniki v nauke* (Moscow, 2012).

<sup>4</sup> Gennadii Kostyrchenko, *Tainaia politika Stalina: Vlast' i antisemitizm. Novaia versia: In 2 vols.* Vol. 1 (Moscow: 2015), 404–10; Gennadii Estraiikh, "Smertel'no opasnoe national'noe edinenie: Evreiskii antifashistskii komitet v SSSR: Polnomochiia, prevyshenie polnomochii, sud'ba," in Gennadii Estraiikh and Alexander Frenkel, eds., *Sovetskaia Geniza. Novee arkhivnye razyskaniia po istorii evreev v SSSR*. Vol. 1 (Boston, 2020), 293–324.

<sup>5</sup> On Shtern's gender-marked career strategies, see: Olga Val'kova, "Voina v biografii zhenshchiny-uchenogo; zhenshchina-uchenyi v biografii voiny," *Koinon* (Yekaterinburg) 4, no. 2 (2021): 151–62.

<sup>6</sup> Gennadii Kostyrchenko, ed., *Gosudarstvennyi antisemitizm v SSSR: Ot nachala do kul'minatsii, 1938–1953* (Moscow, 2006), 182.

<sup>7</sup> Vladimir Naumov, A. Kraiushkin, Nikolai Teptsov, eds., *Nepavednyi sud. Poslednii stalinskii rasstrel: Stenogramma sudebnogo protsessu nad chlenami Evreiskogo antifashistskogo komiteta* (Moscow, 1994), 381–82. The surprisingly lenient sentence also stipulated that she could choose any city in the Kazakh SSR except the capital, Almaty (Shtern picked Dzhambul, now Taraz), acquire a house and invite one of her oldest collaborators from Moscow to join her in exile. The money and personal belongings taken from Shtern during her arrest were all returned to her before her departure. Iakov Rapoport, "Delo vrachei" 1953 goda: Pokazaniia obviniaemogo (Moscow, 2017) 236–39.

elected to the USSR Academy of Sciences—its first female member.<sup>8</sup> In 1942 she was elected as a member of leadership of three propaganda organizations at once: aside from the JAC, also the Soviet Women’s Anti-Fascist Committee and Soviet Scholars’ Anti-Fascist Committee.<sup>9</sup> In the 1930s–40s, she earned international renown and press coverage for her discoveries and her life-journey as a woman scientist.<sup>10</sup>

Shtern’s biographers, and students of the JAC trial, have hypothesized on the Soviet leadership’s sparing of her life. Perhaps the most popular conjecture (albeit not without its critics<sup>11</sup>) is that Stalin was personally invested in Shtern’s work on longevity; her survival, that is, meant he might yet receive a “recipe for eternal youth.”<sup>12</sup> But this is unsupported by any documents, nor even by the circumstantial evidence of Politburo discussions. As Alexander Nakhimovsky summed up in a special section of *East European Jewish Affairs* dedicated to the JAC trial: “The sole survivor, Lina Shtern, may have been spared because of her international reputation, though the actual motivation is unrecorded and unknowable.”<sup>13</sup>

A recent reissue of historian Gennadii Kostyrchenko’s *Tainaia politika Stalina. Vlast’ i antisemitizm*, has significantly altered this situation. In a note accompanying his account of the JAC trial, Kostyrchenko proposes a theory—a document-based one: “Shtern well knew that she could save herself if she could convince Stalin of the extraordinary value of her intellect, so when she got [to Lubyanka], she immediately informed the prison administration of her intention to prepare a manuscript of the highest state importance. And though they initially refused to give her a pencil or let her write anything down, later, evidently with permission from Stalin himself, they gave her paper, pen, and ink. By late 1951, she had written a 137-page manuscript, ‘On Cancer,’ which she submitted to the Ministry of State Security.”<sup>14</sup> This passage refers to a document held by RGASPI,<sup>15</sup> but the book does not elaborate on this topic any further.<sup>16</sup> Kostyrchenko’s explanation, however, provides an alternative to unsupported hypotheses about Shtern’s near-pardon, pointing to a previously unknown aspect of her scientific and medical interest, which could have influenced the decision of Soviet leaders.<sup>17</sup> And this explanation is based on preserved historical evidence.

In this article, I will use primary sources to clarify Kostyrchenko’s account: did Shtern really write an essay on this subject? Was it written during her imprisonment, and what ideas did it propose? Next I will discuss how an essay on cancer treatment could have saved its author’s life in 1952. This means considering the political and cultural meaning of “a cure for cancer” in the late 1940s–early 1950s (as discussed at length in the work of Nikolai Kremmentsov), Shtern’s sudden interest in this topic during her imprisonment, and her

<sup>8</sup> On Shtern’s early career and her work during the Second World War, see: Alice Nakhimovsky, *The Dream of Social Justice and Bad Moral Luck: Eight Jewish Lives under Stalin* (Boston, 2023), 50–53, 129–32.

<sup>9</sup> The activity of the Soviet Women’s Anti-Fascist Committee was covered by the foreign press: “Soviet Women’s Broadcast: A World Appeal,” *The Manchester Guardian*, September 5, 1941, 6.

<sup>10</sup> See, for example: M. Starkey, “Brilliant Women From All Over World At Congress Here: Interesting Personalities From Far Corners of the Earth Reflect Deep Study of Physiological Science in Its Manifold Phases,” *Daily Boston Globe*, August 26, 1929, 19; “Discovery by Soviet Woman Scientist,” *Sunday Worker*, March 5, 1939, 4; “Restoring Dead to Life: Soviet Discovery,” *The Times of India*, July 5, 1945, 4; G. B. Roman, “Women’s Walk: Lina Stern—Scientist Life Saver,” *The Jewish Advocate*, March 27, 1947, 19.

<sup>11</sup> Iakov Ètinger, “Neobkhodimye utochneniia po povodu stat’i Eremeia Parnova ‘Priglasenie na kazn’,” *Zametki po evreiskoi istorii*, No. 9 (2002), <https://berkovich-zametki.com/Nomer9/Etinger1.htm> (accessed April 26, 2024).

<sup>12</sup> Louis Rapoport, *Stalin’s War against the Jews: The Doctor’s Plot and the Soviet Solution* (New York, 1990) 134–35; Aleksandr Borshchagovskii, “Obviniatsia krov’,” *Novyi mir* no. 10 (1993).

<sup>13</sup> Alexander Nakhimovsky, “The Transcripts of the JAC Trial as an Extended Conversation: Words, Sentences, and Speech Acts,” *East European Jewish Affairs* 48, no. 2 (2018): 229.

<sup>14</sup> Kostyrchenko, *Tainaia politika Stalina*, 275.

<sup>15</sup> Rossiiskii gosudarstvennyi arkhiv sotsial’no-politicheskoi istorii (RGASPI), fond (f.) 82, opis’ (op.) 2, delo (d.) 838, listy (ll.) 147–50.

<sup>16</sup> The previous editions of this book do not mention Shtern’s work on cancer nor this theory about her survival.

<sup>17</sup> Viktor Malkin, “Trudnye gody Liny Shtern,” in *Tragicheskie sud’by: Repressirovannye uchenye Akademii nauk SSSR* (Moscow, 1995): 156–81.

non-publication of anything on it after her return from exile. Notably, students and colleagues who knew about Shtern's cancer essay never publicly speculated that it was the reason her life was spared. Interpreting these facts will improve our understanding of Shtern's (successful) survival strategy, and more generally, of the Soviet politicization of medicine in the late 1940s–early 1950s—the time of “Stalin's science wars.”<sup>18</sup> We also cannot sideline the “longevity theory,” and the popularity thereof: thus I will also examine how the mythology of absolute and unchanging power is linked to the cultural myth of the transformation of human nature through Soviet scientists' scientific achievements.

### The Longevity Theory: Documental Evidence against the Popular Myth

The archival reference provided by Kostyrchenko is truly invaluable. The RGASPI holding does not contain Shtern's essay “On Cancer,” but an entirely different document that allows us to rule out longevity as the topic that saved her: a private letter from Shtern to Stalin, dated January 30, 1947.<sup>19</sup> This addresses the subject of aging and life extension, though in a context and modality Stalin would probably have found infuriating, if he read it. (Which, as discussed below, is unlikely.) Here Shtern advises the dictator that “premature aging” can be countered, particularly, in the USSR, by eliminating work-related stress and night shifts:

For all intents and purposes, it would be best to introduce measures to rationalize and improve conditions of labor and everyday life as soon as possible, starting with workers in high-level positions, which includes government workers.

First, we should abolish the “overnight shift,” which has recently become a real blight. In most cases this can be done without significant productivity loss.

For a minority, the overnight shift may be a natural part of their circadian rhythm, and thus can be balanced by daytime rest; however, it is evident that for the health and productivity of the overwhelming majority it is detrimental.<sup>20</sup>

Did Shtern realize how provocative this was? Stalin was famously a night owl, as reflected in propagandistic poetry: “a single Kremlin window is illuminated”: the “leader” is hard at work in his office. Party officials and administrators were expected to forego sleep, as an urgent directive could come from Moscow at any time of the night. Memoirists who interacted with Stalin in the last years of his life have since corrected the popular picture of his heroic asceticism: some of these “working” nights were spent watching movies or drinking with party leaders.<sup>21</sup> Meanwhile, Soviet workers were expected to stay awake and work. Shtern was certainly right: this schedule was bound to lead to mass exhaustion. But implicitly questioning the dictator's personal habits, and overtly critiquing the strategy of labor mobilization through total physical exertion was outrageous.

Rumors of Stalin's interest in longevity probably reached Shtern.<sup>22</sup> A list of her scientific papers, preserved in the archives of the Russian Academy of Sciences, mentions presentations (from 1939 on) on the physiology of aging.<sup>23</sup> Senescence, Shtern argued, could be slowed by adjusting the body's blood-tissue barriers. Apparently, after her election to the USSR Academy of Sciences in 1939, Shtern came (perhaps through utopian faith) to see these barriers as key to all-around human improvement. In 1940, she gave at least two lectures with the

<sup>18</sup> Ethan Pollock, *Stalin and the Soviet Science Wars* (Princeton, 2008).

<sup>19</sup> The letter is preserved in a fond related to V. M. Molotov's work as a curator of Soviet science.

<sup>20</sup> Lina Shtern, letter to Iosif Stalin, RGASPI f. 82, d. 939, l. 148.

<sup>21</sup> Oleg Khlevniuk, *Stalin. Zhizn' odnogo vozhdia* (Moscow, 2018).

<sup>22</sup> On rumors about Stalin's preoccupation with longevity, see: A. Avtorkhanov, *Zagadka smerti Stalina*, 4<sup>th</sup> ed. (Frankfurt, 1976), 7–8.

<sup>23</sup> Arkhiv Rossiiskoi akademii nauk (ARAN), f. 1565, op. 2, d. 19.

same title—“The main causes of aging, death, and the fight against them”—to officials of the Moscow and Leningrad party committees.<sup>24</sup> That same year, she published her first article on this subject—not in a scientific journal, but in a purely ideological one.<sup>25</sup> Delivering two talks on longevity to party officials at the outset of her work on the topic, and her choice of venue for this first publication, demonstrate that Shtern saw her research as closely tied to the ideology of the Soviet project. Moreover, and crucially for the story of her survival, Shtern apparently believed that her insights into blood-organ barriers could be used to develop a host of medical treatments.

In the 1940s, physician and physiologist Alexander Bogomolets, one of the world’s leading scholars of aging and longevity, enjoyed the unconditional support of Soviet leadership. However, he died of tuberculosis in 1946, aged 65. Shtern’s offer of guidance to Stalin on improvements to quality of life may have been also meant she was offering herself as *the* post-Bogomolets longevity expert. But she might not have known that after Bogomolets’s death, longevity research lost its “most-favored” status in the USSR. In 1950–52, leading Soviet longevity researchers would be stigmatized for ideological “violations.”<sup>26</sup>

We cannot know for certain whether Stalin read Shtern’s letter; it seems unlikely, as there is no penciled-in resolution, nor the kind of notations he liked to leave on documents.<sup>27</sup> Moreover, had Stalin read this advice on how to extend the lifespan of Soviet workers, it would hardly have motivated Shtern’s near-pardon: her reasoning would have seemed offensive to the dictator, and the measures she proposed would never have been implemented. On October 6, 1949, after Shtern’s arrest, Stalin assessed her as an enemy, though not a particularly dangerous one, calling her an “amateurish scientist” (*kustar’ ot nauki*)—in the general context of his rhetoric, an epithet more dismissive than aggressive.<sup>28</sup> Let us now turn to what *did* most likely save Shtern’s life—her manuscript “On Cancer.”

### “On Cancer”: Dating, Textual Criticism, Pragmatics

Shtern’s manuscript on cancer was preserved in her personal fond in the Academy of Sciences archive. To my knowledge, no copies of it exist in other archives or fonds. The earliest published reference to “On Cancer” comes in a 1995 article about Shtern’s arrest and exile by her student and colleague, Viktor Malkin.<sup>29</sup> This article was probably the source of Kostyrchenko’s hypothesis; there are obvious similarities between the two authors’ mentions of the length of the manuscript and the fact that it was written in prison. Per Malkin:

After multiple requests, Shtern was given paper and pencils, and later, a pen and ink.<sup>30</sup> Shtern got straight to work. She wrote a series of popular-science articles while in prison. They all had a special focus on the possible medical uses of her research on physiological barriers.

The most significant and original of the studies Shtern completed in prison was her essay “On Cancer,” which she enclosed with a letter to Minister Abakumov in late 1951.<sup>31</sup> This 137-page

<sup>24</sup> ARAN, f. 1565, op. 1, d. 127, 128.

<sup>25</sup> L.S. Shtern, “Osnovnye prichiny starenia i smerti v svete sovremennogo uchenija o bar’erah,” *Pod znamenem marksizma* (1940, No. 11), 152–74.

<sup>26</sup> Ilia Stambler, “A History of Life-Extensionism in the Twentieth Century” (PhD diss., Bar-Ilan University, 2014); A.L. Sidelkovskii, V.D. Doguzov. *Etiudy istorii klassicheskoi nevrologii* (Kyiv, 2016).

<sup>27</sup> B. Ilizarov, “Stalin. Shtriki k portretu na fone ego biblioteki i arkhiva.” *Novaia i noveishaia istoriia*, no. 3 (2000): 182–205; no. 4 (2000): 152–66.

<sup>28</sup> I.V. Stalin, *Sochineniia*, vol. 18 (Tver’, 2006) 535.

<sup>29</sup> Malkin, “Trudnye gody Liny Shtern,” 174.

<sup>30</sup> The initial ban on writing materials is not mentioned in the manuscript; Malkin may have learned this from Shtern herself. See also n56.

<sup>31</sup> ARAN, f. 1565. Op. 1, d. 289. ll. 1–137

essay proposes practical recommendations for diagnostics and treatment of cancer based on the discovery of histohematic barriers.

The main reason for her letter to Abakumov was to request permission to continue her experiments, and her release from prison.

She did not know that the minister had already been arrested, and was being held in a nearby cell of the same prison.<sup>32</sup>

Malkin does not mention the possibility that this manuscript saved Shtern's life. He suggests that writing to the already-disgraced Abakumov in effect negated her efforts to appeal to party leadership.<sup>33</sup> Malkin's precis of "On Cancer," and the fact that his name is listed among the manuscript's requesters at the RAN archives, suggest that he carefully studied it, albeit without realizing its importance to Shtern's "salvation," unlike Kostyrchenko, who, however, apparently did not study it himself.

The materials in question do not constitute a single essay of 137 pages, but three drafts of the same essay, written in pencil and ink on sheets folded in half, then typewritten on sheets of the same size. The two drafts and final version are all enclosed in a cover made by the author, on which she handwrote: "My appeal to the Minister of State Security regarding a proposed method of cancer treatment (late 1951)."<sup>34</sup>

The order of the documents in the folder does not match the order in which they were written. The first (not chronologically, but within the folder Shtern assembled) contains twenty-seven typewritten pages and about forty-two handwritten ones.<sup>35</sup> This study consists of a series of sections whose length and content were probably determined by how much paper, ink, and time were available. The first section is undated, though it bears the same title as the folder: "My appeal to the Minister of State Security regarding a proposed method of cancer treatment (late 1951)." Here, Shtern briefly summarizes her main scientific discovery, made in 1921–23 before her move to the Soviet Union in 1925: the existence of the blood-tissue barrier, through which each bodily organ is provided a specific (and normally unalterable) combination of nutrients. According to Shtern, many diseases (including cancer) could be treated by suppressing the barrier function, thus allowing the introduction of a drug directly into a diseased organ or nearby artery. Shtern assures her readers that her work on the blood-tissue barrier is "Soviet in its orientation," and that her conclusions "do not contradict the observations of Pavlov, but rather support and develop them."<sup>36</sup>

The reference to Ivan Pavlov requires separate comment. The last years of Stalin's life (1945–53) were the time of the greatest ideologization of Soviet science, when not only in the humanities but also the life sciences, scholarly arguments were often reinforced, or even replaced, by references to officially approved authorities (from Ivan Pavlov to Trofim Lysenko), or to recent ideological pronouncements.<sup>37</sup> Shtern seems to have been well aware of these rules of the game. Even her work on longevity from 1939–40 shows a readiness to participate in the political use of scientific concepts.

Paying homage to Pavlov was an important gesture; after the Academy of Sciences' and Academy of Medical Sciences' joint "Pavlovian session" of 1950, references to the work of physiologist Ivan Pavlov (1849–1936) in medical research served as proof of one's ideological

<sup>32</sup> Malkin, "Trudnye gody Liny Shtern," 174.

<sup>33</sup> Shtern herself may have come to believe this in her late years.

<sup>34</sup> Lina Shtern, typed and signed manuscript "Iz moego obrashcheniia k ministru Gosudarstvennoi bezopasnosti po povodu moego predlozheniia metoda lecheniia raka (v kontse 1951 g.)" ARAN, f. 1565, op. 1, d. 289, l. 1.

<sup>35</sup> *Ibid.*, ll. 1–27 and 53–95.

<sup>36</sup> *Ibid.*, l. 4ob.

<sup>37</sup> See, for example: Valery N. Soyfer, *Vlast' i nauka. Istoriia razgroma kommunistami genetiki v SSSR* (Moscow, 1993), 451–99; Evgeny A. Dobrenko, *Pozdnii stalinizm: Estetika politiki*, 2 vols (Moscow, 2020), 2:567–705.

trustworthiness,<sup>38</sup> and of one's forswearing of baleful western science.<sup>39</sup> Shtern might not have known anything about this session while incarcerated, but what she had already learned by the time of her arrest was sufficient to understand that Pavlov's name had acquired even greater symbolic value in the new ideological context.

The essay's second section, dated January 24, 1952, opens with a personal revelation:

My mood has improved because of [being allowed to work on] a potential cancer treatment that I had been thinking about before my imprisonment and have not stopped thinking about even after my arrest; then there occurred a sudden decline in my mood and obsessive thoughts about my impending death. [I am afraid] I am haunted by the thought that [I will not live to see my trial and] I will die without finishing my work, to which I devoted the last years of my life [and which was meant to justify my existence].<sup>40</sup>

Shtern then explains, in a simplified way, the blood-brain barrier, and how it can be artificially permeated to treat a variety of conditions, including malignant tumors. The section ends mid-sentence at the bottom of page 7 ver.: "Our observations when studying the conditions . . ."

The third section, dated January 27, 1952, starts on page 8, and comprises three archival pages. Shtern returns to the theory of the blood-brain barrier and its clinical implementation. We know from transcripts of the 1952 trial that Shtern was summoned for interrogation on January 30 and signed a confession.<sup>41</sup> Investigations for the JAC trial had resumed, and interrogations probably continued throughout February 1952, so it is unsurprising that the fourth section is dated March 2, 1952.<sup>42</sup> This occupies eight pages (fifteen single sides) and contains theses on cancer diagnosis and treatment; there are no autobiographical confessions. Though it repeats ideas formulated in earlier sections, this text appears more thorough, and contains a preliminary plan for developing new cancer treatments: "It is imperative that we assemble a small team to develop a technique to introduce drugs into the diseased organ and simultaneously collect blood flowing from the organ, as well as lymph fluid, if possible. Work can start right away. The cooperation of an anatomist or pathologist, a surgeon, biochemist, physiologist, or pathophysiological is required."<sup>43</sup>

The fifth and final section in this draft is dated May 25, 1952, that is, after the JAC trial had begun. It contains four parts: the first, on how to identify early-stage cancer; the second, on the placental barrier; the third, although titled "outline of work," actually contains a list of previous discoveries by Shtern and her colleagues; and the fourth and final part is headed "Various thoughts on the treatment of cancer." It is important to relate the chronology of these writings to the JAC trial. Ignat'ev's recommendation to exile rather than execute Shtern came (in the above-mentioned letter to Stalin, April 3, 1952) after she had completed the fourth section, which summarized her research plans. The last section was written not just after the trial had begun (May 8), but after it resumed following a recess (May 12–22), although apparently before Shtern herself testified (June 6 and 28).<sup>44</sup>

<sup>38</sup> At the "Pavlovian session," physiologist Ezras Asratyan harshly criticized the recently arrested Shtern (without naming her, but through obvious hints). See: Yu. Arshavskii. "Prichiny provedeniia Pavlovskoi sessii (zametki ochevidtstva)," *Troitskii variant—Nauka*, no. 4 (323, 2021).

<sup>39</sup> On the "Pavlovian session" see: Pollock, *Stalin and the Soviet Science Wars*, 136–67.

<sup>40</sup> Shtern, "Iz moego obrashcheniia," ARAN, f. 1565, op. 1, d. 289, l. 5. Brackets here indicate wording crossed out in the manuscript.

<sup>41</sup> Naumov, Kraiushkin, Teptsov, *Nepravednyi sud*, 313.

<sup>42</sup> According to statements by investigators in charge of the JAC case, one of them called Shtern in for questioning 87 times in a row; see, for example, Joshua Rubenstein, *Razгром Evreiskogo antifashistkogo komiteta*, trans. by L. N. Vysotsky (St. Petersburg, 2002), 68.

<sup>43</sup> Shtern, "Iz moego obrashcheniia," ARAN, f. 1565, op. 1, d. 289, l. 14ob.

<sup>44</sup> Naumov, Kraiushkin, Teptsov, *Nepravednyi sud*, 311–21, 332–33.

The essay's second draft, written in the form of a letter to Abakumov ("To USSR Minister of State Security Viktor Semënovich Abakumov. Explanatory memorandum on the manuscript by L. Shtern"<sup>45</sup>), is organized more carefully, and opens with the most important postulate of Shtern's anti-cancer concept: "In essence, this treatment consists of introducing the medicinal substance not into the general circulatory system by subcutaneous or intravenous injection as is commonly done, but as close as possible to the diseased area, preferably into the extracellular [interstitial] fluid of the diseased organ or tissue."<sup>46</sup>

Shtern explains the failures of her predecessors: "The usual way of introducing drugs into the patient has not always resulted in contact between the drug and the diseased area. . . . [W]ithout such contact, we cannot expect the treatment to be successful."<sup>47</sup> She emphasizes that this is a novel treatment, with applications beyond oncology: "What I propose is not a new medication, but a new approach, the result of many years of experimental research, which after thorough laboratory study has been found clinically effective. I am convinced that cancer treatment can be brought out of its current dead end, and that my treatment method will be successfully used for other conditions hitherto considered incurable."<sup>48</sup>

This draft repeats the rhetoric of the first one, though its arguments are structured far more carefully. Shtern's previous discoveries are cited as corroborating the new method; she also warns that she has enemies in the medical world who, if asked to review this essay, might mock her work; finally, she insists that her professional experience would enable her to see this discovery through to its practical application. The second draft lays out the same plan as the first, but adds a significant provision: that collaboration between scientists from different fields would result in a method for directly introducing a drug into an organ's inner nutritional environment. We might assume that this letter was written in the spring of 1952, based on fragments from the first draft; but the date provided by the author on the cover of the manuscript and the letter to Abakumov precludes this assumption.

The third draft is significantly different: it is not addressed to the minister, and includes no autobiographical statements, mention of the trial, or avowal of loyalty to the regime. It is written like a popular-science essay on cancer treatments and includes fragments from the first and second drafts. Its first few pages are written, not in ink, like other texts in the folder, but in pencil—and by an unsteady hand.

Analyzing the three drafts, we can reconstruct the circumstances of Shtern's work on the essay. In late 1951 (more precise dating would require access to Ministry of State Security archives), Shtern was allowed to work on her novel idea for cancer treatment. The first section of the first draft probably comes from this period. She then sent a letter to Abakumov (this is the second draft), probably before January 28, 1952. (Twice she mentions having spent "almost three years" in prison; Shtern was arrested January 28, 1949.<sup>49</sup>) The interrogations of early 1952 made her doubt that her letter had been received. She kept working, and revisited fragments from her letter to Abakumov (the sections dated January 24 and 27 and March 2 in the first draft), probably intending to use them in subsequent letters to other officials, or in scientific papers. The fragments from the first draft, except for the very first, were not drafts of the letter to Abakumov, but rather explored ideas from that letter, recalled from memory and elaborated with new theories.

In fact, the letter and particular sections from the first draft did reach high-ranking officials at the Ministry of State Security (MGB)—probably including Minister Ignat'ev—though Shtern did not know this. She kept working after the trial had begun (the May 25 fragment). In her final statement at trial, she mentioned working on three projects; regarding the first, she quoted from her letter to Abakumov: "I don't think I have the right to take this knowledge

<sup>45</sup> Shtern, "Iz moego obrashcheniia," ARAN, f. 1565, op. 1, d. 289, 1. 95.

<sup>46</sup> *Ibid.*

<sup>47</sup> *Ibid.*, ll. 95–95ob.

<sup>48</sup> *Ibid.*, l. 96.

<sup>49</sup> *Ibid.*, ll. 98ob, 103.



with me to my grave”; and described the second as concerning “treatment for heart disease,” the third, on “the development of effective drug treatments.”<sup>50</sup>

“On Cancer” was returned to Shtern upon her release—possibly the *only* writing returned to her, which must have convinced her of the promising direction of her work and the importance of this new method. The sentence of exile rather than death drove home the value of her idea—if not for the field of medicine, at least for her own survival. She began to work on a more elaborate manuscript, now without the need to address ministers or spend words on avowals of loyalty.

By the time she was sent into exile, she had probably heard of Abakumov’s arrest. The notes in pencil on the third draft could indicate that she was writing on the train to Kazakhstan, or during her first days in Dzhambul, before purchasing stationary. But she clearly had access to the previous drafts. All three drafts emphasize that Shtern’s previous work can serve as a foundation for future breakthroughs in Soviet medicine. Each subsequent draft adds detail to descriptions of earlier findings—the blood-tissue (especially blood-brain) barrier—while the description of the novel cancer treatment keeps getting shorter, in the third draft occupying a mere typewritten page. This would explain why Shtern’s colleague Iakov Rapoport’s recollection of her return from exile with manuscripts “begun at Lubyanka” includes no mention of oncology, only the topic of “blood-tissue barriers.”<sup>51</sup> Malkin, who studied the manuscript, likewise saw this well-familiar topic as its focus. The essay’s third draft, likely written in exile, was clearly meant not just for high-ranking officials, but also scientists whose opinion would determine the fate of Shtern’s project. Shtern had never published anything on cancer research before her arrest, and did not feel confident writing about it, so she scaled back her initial (prison-devised) hypothesis, suggesting a direction of study rather than a treatment method.

### Immediate and Long-term Consequences of the Sentence

The leniency of Shtern’s sentence was hardly accidental. Those responsible for it knew that an academic in her seventies would not survive the Gulag. The ten-year exile proposed by Ignat’ev would likewise have been fraught. As mentioned, the final version was still more lenient.

Who was behind it? Without access to Politburo discussions of the trial, we can only hypothesize. After Abakumov’s arrest, Shtern’s letter would have ended up with MGB personnel, perhaps eventually on the desk of new Minister Ignat’ev or his deputy Riumin. But neither was authorized to decide her fate.<sup>52</sup> As for Shtern, she did not know who granted her the right to work in prison, and addressed her plea to Abakumov.

We know that Ignat’ev was a protegee of Georgii Malenkov, and that his initial draft sentence proposal to Stalin (April 3, 1952) was also sent to Malenkov and Lavrentii Beriia. Presumably, one of these two Politburo members reported that Shtern was working on a novel cancer treatment, and lobbied for her life to be spared. Both Malenkov and Beriia had been in charge of strategic military issues since the Second World War, and as Nikolai Kremontsov has demonstrated, the Soviet government made cancer treatment a strategic priority. Shtern would be unable to start working for months after the trial, but it must have been deemed important enough to spare her life, so that she could return to her research once the passions around the JAC trial had subsided.

During her brief period in Kazakhstan, Shtern seemed convinced that she and her work would be in demand soon. Rapoport recalls that in the winter of 1952–53, a few months after arriving in Dzhambul, Shtern wrote to colleagues in Moscow, requesting that someone join

<sup>50</sup> Naumov, Kraiushkin, Teptsov, *Nepravednyi sud*, 373. Since none of these topics appear in Shtern’s pre-arrest publications, we can assume that she was describing manuscripts completed in prison (as attested by her phrase “has been almost finished” and by Malkin’s mention of her “series of popular-science articles”).

<sup>51</sup> Iakov Rapoport, “*Delo vrachei*” 1953 goda. *Pokazaniia obviniaemogo* (Moscow, 2017), 140.

<sup>52</sup> The most Ignat’ev could have done without consulting Politburo members would have been to provide Shtern with stationary and allow her to work on her essay.

her in Kazakhstan to assist with her project. “Eventually, after an exchange of opinions (very cautious, given the situation in 1952), O.P. Skvortsova, Shtern’s devoted old secretary, took the risk of heading to Dzhabul.”<sup>53</sup> Skvortsova probably typed all three drafts of “On Cancer.”

Shtern was released from exile under the famous USSR Supreme Council amnesty of March 27, 1953.<sup>54</sup> She described the circumstances of her return in an August 1953 letter to Malenkov:

I returned to Moscow on May 19, 1953, and several days later, on May 22 or 23, I was summoned to the Ministry of the Interior, where I was interviewed by an official in a general’s uniform in the presence of several other people. I do not know his name or rank. He told me something along these lines: “Of course, you know that you should not have been arrested. Everything has changed now. We ask that you tell us how you have been treated. You would help us a lot by doing so.”

I understood these words as proof of my exoneration and did not request any written documents attesting to it. Thus, I have no way to prove my exoneration; the only document in my possession is the record of my release, which I was given along with my passport in Dzhabul.<sup>55</sup>

Shtern was clearly on edge: had she not been brought back to Moscow and summoned to Beria’s office so that she could continue her work? But she was left idle for months; hence her request of the Council of Ministers chair for official exoneration: “I want to do my duty and work, but all I have is the head on my shoulders. The tools for my research have been destroyed: the laboratory no longer exists, my manuscripts and published works have been confiscated, even my name has been, everywhere, crossed out. It is impossible to recommence work under these circumstances.”<sup>56</sup>

From Shtern’s letter to Malenkov and letters to acquaintances in Dzhabul in this period, it is clear that her preoccupation with cancer research endured after her return to Moscow—not only as a key to her exoneration, but as indeed potentially leading to effective treatment via breaching the blood-tissue barrier.<sup>57</sup>

<sup>53</sup> Iakov Rapoport, “*Delo vrachei*” 1953 goda, 233.

<sup>54</sup> This applied to her as a convict with a sentence shorter than five years and as a woman over fifty. She was extraordinarily lucky: the decree specified that those convicted in accordance with “counterrevolutionary” articles (i.e. mostly article 58, by whose various sections the JAC members were convicted) whose sentences were longer than five years were not subject to amnesty.

<sup>55</sup> Lina Shtern, Letters to the Central Committee of the Communist Party of the Soviet Union, to the Presidium of the USSR Academy of Sciences, excerpt from the meeting minutes of that Academy of Sciences’ Biological Sciences Division on the organization of a physiology laboratory at the Academy of Sciences’ biophysics institute and about establishing an appropriate working environment at the laboratory. Drafts and copies of letters sent. August 1953–December 28, 1963. ARAN, op. 2, d. 91, l. 7.

<sup>56</sup> *Ibid.*, l. 10. In that same letter, Shtern reminds her reader of the new treatment method she outlined in prison: “While I was detained, I could not stop thinking about how to continue this work. Soon after my arrest, I asked the Minister of State Security to be allowed to work on the development of a new means of administering drugs for the early detection and treatment of tumors, but I received no response. Only in late 1951, not long before the trial, was I allowed to present a written theoretical account of the proposed treatment method. I sent the Minister an explanatory note outlining the essence of that method. This work remains unfinished due to lack of the necessary materials.” *Ibid.*, ll. 6–7.

<sup>57</sup> We find interesting evidence in her correspondence with an acquaintance from Dzhabul, the tuberculosis doctor Faina Iagoda, with whom Shtern often discussed her work. In early February 1954, Shtern writes to Iagoda: “There’s not much to be said about myself. You have heard that they have granted me all my rights back. That alone is not enough. I want to fulfill my most cherished dream as soon as I can, and I know exactly how to achieve it. But will I have the strength to do it? Sometimes I worry that I will not be able to finish the work I started.” A month later, she says that this dream is close to coming true: “The only thing that brings me joy is the fact that my dream to continue the work I have dedicated my life to is about to come true. Now I am embarking on my actual work.” Judging by Iagoda’s reply (letter from June 13, 1954), the dream described by Shtern was about her work on cancer treatment: “I would appreciate it if you could find the time to write and tell me—what are you working on right now? Did you, as you had dreamed, address to the problem of cancer?” Lina Shtern, Letters to Faina Isaevna Iagoda, ARAN, f. 1565, op. 3, d. 300, ll. 1–2 and 10.

Shtern's letter to Malenkov bore some fruit. Five months later, Shtern wrote him again, informing him that in September 1953, her "academic credentials and rights were reinstated."<sup>58</sup> In October 1953, the Academy of Sciences' biology division lobbied its presidium for the establishment of "a laboratory at the Institute of Biophysics to be led by Acad. L.S. Shtern, dedicated to her proposed topic."<sup>59</sup> But Shtern would never be granted more than a single room, barely staffed and equipped, at the Institute of Biophysics. She appealed to Malenkov, Dmitrii Shepilov, Nikita Khrushchev, and to the secretary of the Academy of Sciences' biology section Vladimir Engel'gardt and President Aleksandr Nesmeianov—to no avail.

Tasked with researching the permeability of blood-tissue barriers, mainly under the influence of radiation,<sup>60</sup> Shtern's miniscule laboratory may have seemed unconnected to the study of potential cancer treatments. But from her notebooks, it is clear that she continued to be inspired by the idea that cancers could be treated by bypassing blood-tissue barriers.<sup>61</sup> Shtern probably sought support among oncologists and radiologists, but without success. Her published work from 1954–68 includes nothing related to cancer treatment.<sup>62</sup>

How does this jibe with her apparently cancer-based near-pardon? The likeliest explanation is that the political and scientific context had completely changed since the deciding of Shtern's fate in 1952. If the figure behind Shtern's sentencing was Beriia, we can easily explain her quick return to Moscow in May 1953, and the sluggishness of her exoneration and reintegration: from March–May 1953, Beriia was extraordinarily busy; then in late June, he was arrested and of no use. If, however, it was Malenkov who decided Shtern's sentencing, then, by summer 1953, he was likely preoccupied with a whole new set of issues: the post-Stalin triumvirate, and the intensifying development of Soviet industry and agriculture.<sup>63</sup> Absent any documentary evidence as to which Soviet leader had been decisive, we might rather focus on the questions we *can* substantiate. As Shtern well knew, in 1951–52, effective cancer treatments constituted a top Soviet priority. This political context was the background for her essay.

### The Kliueva-Roskin Project and the "KR case": Lina Shtern as an Interested Observer

N. Kremontsov has reconstructed the late-1940s political significance of cancer research, in particular, the Soviet leadership's focus—especially before the first Soviet A-bomb test (August 1949), when it seemed imperative to counter the American atomic monopoly with superiority in the field of medicine—on a treatment developed by Grigorii Roskin and Nina

<sup>58</sup> Lina Shtern, Letters to the Central Committee, l. 32ob.

<sup>59</sup> *Ibid.*, l. 14. The laboratory staff was to comprise a director, two senior scientists, two junior scientists, two laboratory assistants and one senior assistant; a budget of 110 thousand rubles was allocated for equipment, which, however, the Institute could not provide.

<sup>60</sup> Lina Shtern, "Vliianie rentgenovskogo izlucheniia na pronitsaemost' gisto-gematischeskikh bar'erov" (co-authored with S. Ia. Rapoport, M. M. Gromakovskaia, and S. R. Zubkova) and "Vliianie ioniziruiushchikh izlucheniia na faktory, opredeliaiushchie sostav i svoitva neposredstvennoi pitatel'noi sredy organov i tkanei zhitovnogo organizma. Doklad na Vsesoiuznoi nauchno-tekhnicheskoi konferentsii po primeneniiu radioaktivnykh i stabil'nykh izotopov i izlucheniia v narodnom khoziaistve i nauke" in *Neposredstvennaia pitatel'naia sreda organov i tkanei. Fiziologicheskie mekhanizmy, opredeliaiushchie ee sostav i svoitva* (Moscow, 1960): 520–29, 530–38.

<sup>61</sup> "8–12–55. On treating malignant tumors. In conversation with Dr. Podliashchuk [Soviet radiologist Lev Davydovich Podliashchuk (1902–1958)—MM] and his assistants. X-ray radiation might have an effect on relevant blood-tissue barriers, and thus allow direct contact between drugs and a tumor. This can also be used when drugs are injected directly into the artery feeding the diseased organ (with a maximum concentration and application rate, i.e., pressure)." Lina Shtern, Journals, individual sheets with notes on science, science administration, society and politics, ARAN, f. 1565, op. 1, d. 421, l. 171.

<sup>62</sup> Lina Shtern, List of published science articles by Lina Solomonovna Shtern (1963–67), ARAN, f. 1565, op. 2, d. 19, ll. 95–141.

<sup>63</sup> With reason does Shtern allude, in her second letter to Malenkov, to her discoveries' potential application in veterinary medicine.

Kliueva.<sup>64</sup> The choice of direction had less to do with increasing cancer prevalence than with American pharmacology's foregrounding of cancer treatment.<sup>65</sup> The priority was not to implement a life-saving drug, but to announce the USSR as its discoverer. With Soviet prestige on the line, Kliueva and Roskin became, in June 1947, the first defendants to appear before an "honor court," an assembly of representatives of scientific institutions tasked with censuring particular researchers for political-ideological misdeeds—in this case, Kliueva and Roskin's sharing of their manuscript "Biotherapy for Malignant Tumors" with foreign scientists. (Who were, in fact, previously approved as partners of the Soviet project.)

Kliueva and Roskin were not arrested or barred from research; on the contrary, the Academy of Medical Sciences organized a secret, unprecedentedly funded and staffed laboratory dedicated to their proposed drug. But Academy of Sciences Secretary Vasilii Parin was accused of spying for the US and sentenced to twenty-five years in the camps as an "enemy of the Soviet state." Soviet Health Minister Georgii Miterëv also lost his position. Interestingly, Kliueva, Roskin, and Parin were all accused of being in contact with, and providing a manuscript to, two American scientists: Stuart Mudd and Robert Leslie.<sup>66</sup> The same names were listed in the charges against Shtern during the JAC trial:

In 1945 and 1946, she established contact with several foreigners residing in Moscow, and informed the Americans Mudd and Leslie about scientific research undertaken by Soviet scientists, and provided the press-attaché of the British embassy Tripp with information on research done by the USSR Academy of Sciences' Institute [of Physiology], of which she was the director.<sup>67</sup>

In 1946–47, Kliueva and Roskin's work had been celebrated in the mainstream Soviet press and specialized medical journals alike. Kliueva was nominated to the USSR Supreme Council, and hailed in *Izvestiia* as "a bold and innovative scientist. She has proposed a new method against cancer. Experiments have yielded positive results. This discovery will be among the greatest in the world. Not only we Soviet scientists, but the whole scientific world follows her work."<sup>68</sup> In a rave review of Kliueva and Roskin's monograph for *Izvestiia*, Prof. Leont'ev described their drug as uniquely capable of reaching where scalpels and radiation could not; usable in miniscule quantities; and still effective in cases where the disease had progressed.<sup>69</sup> These were qualities that, in 1951–52, Shtern would attribute to her own method, also adding a fourth that Kliueva and Roskin could not claim, as they had developed a drug rather than a method: the potential for detecting cancer in its earliest stages.

The June 1947 "honor" trial of Kliueva and Roskin was not widely covered, but it did inspire—on Stalin's request—the writers Aleksandr Shtein's and Konstantin Simonov's plays *The Law of Honor* and *Someone Else's Shadow*, respectively, with the former also adapted into the

<sup>64</sup> Nikolai Kremontsov, "The 'KR Affair': Soviet Science on the Threshold of the Cold War," *History and Philosophy of Life Sciences* 17, no. 3 (1995): 419–46; Kremontsov, "Cancer Biotherapy—from Toxins to Antibiotics: A Soviet Case, 1929–1951," in *100 Years of Organized Cancer Research*, edited by Wolfgang U. Eckart, (Stuttgart; New York, 2000), 143–48; Kremontsov, "The War on Cancer and the Cold War: A Soviet Case," in Ilana Lowy and John Krige, eds., *Images of Disease: Science, Public Policy and Health in Post-war Europe* (Luxemburg, 2001), 213–26; Kremontsov, *The Cure: A Story of Cancer and Politics from the Annals of the Cold War* (Chicago, 2002); Kremontsov, *V poiskakh lekarstva protiv raka: Delo KR* (St. Petersburg, 2004); Kremontsov "In the Shadow of the Bomb: U.S.-Soviet Biomedical Relations in the Early Cold War, 1944–1948," *Journal of Cold War Studies* 9, no. 4 (2007): 41–67; Kremontsov, "Trypanosoma cruzi, Cancer and the Cold War," *História, Ciências, Saúde-Manguinhos* 16, supl. 1 (2009): 75–94.

<sup>65</sup> Kremontsov, *V poiskakh lekarstva protiv raka: Delo KR*, 139.

<sup>66</sup> Vladimir Esakov and Elena Levina, "Delo 'KR' (Iz istorii gononii na sovetsskuiu intelligentsiiu)," *Kentavr*, no. 3 (1994): 100–101.

<sup>67</sup> Naumov, Kraiushkin, Teptsov, *Nepravednyi sud*, 380.

<sup>68</sup> "Nina Georgievna Kliueva vydvynuta kandidatom v deputaty Verkhovnogo Soveta RSFSR na sobranii profes-sorov, prepodavatelei, studentov, rabochikh i sluzhashchikh Pervogo Moskovskogo ordena Lenina meditsinskogo instituta," *Izvestiia* (January 3, 1947): 4.

<sup>69</sup> I. Leont'ev, "Vydaishcheesia otkrytie sovetsskikh uchenikh," *Izvestiia* (March 12, 1947), 4.

film *Honor Court* (dir. Abram Room). *The Law of Honor* premiered at the Moscow Drama Theater in June 1948, by autumn playing nationwide.<sup>70</sup>

Lina Shtern had long been an interested observer of Roskin's and Kliueva's work. Roskin's first publication, on tumor treatment based on the trypanosoma toxin, was in the journal *Bulletin for Experimental Biology and Medicine*, founded and edited by Shtern.<sup>71</sup> From 1939–41, Roskin studied the blood-tissue barrier at the USSR Academy of Sciences' Institute of Physiology, established and chaired by Shtern.<sup>72</sup> Shtern was present, along with other members of the Academy of Medical Sciences Presidium, at the “honor” trial of Kliueva and Roskin, and was dismayed by it. As an informant reported to Andrei Zhdanov: “Academician Shtern spoke to her colleagues in the auditorium during recess: ‘This trial is a terrible thing—the effect it could have on our scientists—they will stop publishing.’ This statement by Shtern is in line with other recent statements of hers.”<sup>73</sup> During her MGB interrogation, she reiterated the point: “After the honor court against Roskin and Kliueva, I unfortunately stopped most of my correspondence with foreign scientists, which is fatal for science.”<sup>74</sup>

Shtern was apparently aware, not just of the resources lavished on Kliueva and Roskin's laboratory, but also of the fact that, by late 1948, their drug was raising doubts. That December, shortly before Shtern's arrest, the Academy of Medical Sciences Presidium tasked pathologist Iakov Rapoport (husband of Shtern's closest collaborator, Sofiia Rapoport) with assessing the laboratory clinic's diagnostic accuracy and patient mortality, as the results reported by Kliueva and Roskin were considered suspicious.<sup>75</sup> Thus, when Shtern decided, in prison, to take up the topic of cancer treatment, she knew that even after the fallout from the KR manuscript reaching foreign hands, the topic conferred protection on the manuscript's authors, as well as a specialized (if potentially troubled) research institute.

In his writings on what he calls the “KR drama,”<sup>76</sup> Kremontsov emphasizes its “ambiguity”; its foregrounding of illicit “unpatriotic deeds, on the one hand, and the government's pardon of unpatriotic mistakes, on the other.”<sup>77</sup> This ambivalence is reflected in the case's resolution: Parin was sentenced to twenty-five years for espionage, while Roskin and Kliueva were subjected to *moral* condemnation by the “honor court,” but allowed to continue working. The same ambivalence is seen in Shtein's *The Law of Honor*, and Room's adaptation thereof, in the pairing of the two main characters: the villainous professor Losev, who, craving acclaim and profit, shares information on a novel analgesic with a US company; and the idealistic professor Dobrotvorsky, who trusts Losev, and believes that science knows no borders, that discoveries serve all humankind—and that contacts with foreign scientists only promote this universality. Dobrotvorsky's idealism eventually proves dangerously naive, leading to the theft of Soviet scientists' discoveries. Still, like Kliueva and Roskin in real life, he is subjected only to *moral* condemnation, and bitterly regrets his mistake; criminal charges are reserved for the avaricious Losev.

Shtern probably did not manage to see Room's film, released early January 1949, before her arrest later that month, but she must have at least heard about the play, widely discussed in Soviet newspapers the previous year. In any case, Shtern seems to have perceived the ambivalence noted by Kremontsov, the sense that, in the USSR of the late 1940s–early

<sup>70</sup> On plays exposing Soviet “cosmopolitans,” see Violetta Gudkova, “‘Mnogikh etim vozdukhom i proskvozilo . . .’: Antiamerikanskii motivy v sovetskoi dramaturgii (1946–1954),” *Novoe literaturnoe obozrenie* no. 95 (2009): 187–216; Evgenii Dobrenko, *Pozdnii stalinizm: Estetika politiki*. Vol. 2 (Moscow, 2020), 91–201.

<sup>71</sup> Kremontsov, *V poiskakh lekarstva protiv raka: Delo KR*, 43.

<sup>72</sup> *Ibid.*, 70.

<sup>73</sup> RGASPI f.17, op. 121, d. 621, ll. 55–63. Certified typewritten copy, quoted in Esakov and Levina.

<sup>74</sup> Quoted in Aleksandr Borshchagovskii, *Obviniaetsia krov': Dokumental'naya povest'* (Moscow, 1994), 116.

<sup>75</sup> Kremontsov, *V poiskakh lekarstva protiv raka: Delo KR*, 218.

<sup>76</sup> By this, Kremontsov (*V poiskakh lekarstva protiv raka: delo KR*, 198) means the real-life events surrounding the discovery of the drug cruzin, the “honor court” and the subsequent fates of Kliueva and Roskin, as well as the ideological conflicts depicted in the fictionalizations of these events.

<sup>77</sup> *Ibid.*

Table I.

Dobrotvorsky	Shtern, in court
“[[T]he sick suffer the same everywhere. This is what scientists are fighting against. And scientists are scientists everywhere. . . . Countries have borders—science does not.” <sup>78</sup>	“We scientists cannot content ourselves with what happens in one place only. I cannot imagine a science that only develops within the borders of one country.” <sup>82</sup>
“I think we have now won the right—and many thanks to the people and government for that—the right to work on science and nothing but science! Mankind still has so many enemies, just think: pain, hypertension, cancer, tuberculosis. . . The guns have fallen silent—now science can speak!” <sup>79</sup>	“[S]cience knows no state borders, knows no homeland. . . . [H]ow could we speak of science having a homeland or betraying its homeland?” <sup>83</sup>
“If there is a new word in science, it matters not what language it is in—what matters is that it has been spoken! How joyous when we are the ones to speak it, we Soviet scientists, and in all languages! Yes, yes, in every language! I don’t see anything shameful in this practice. Our forefathers did this countless times—and thus multiplied the glory of our science across the world!” <sup>80</sup>	“It is not bootlicking or groveling to use the achievements of bourgeois science. The cosmopolitanism I am being accused of seems to me more like internationalism.” <sup>84</sup>
“Appearing before this court has been difficult and bitter for me, but it was a necessary experience, because a scientist knows no greater joy than finding the truth.” <sup>81</sup>	“Today I stand before the court and understand that any careless. . . word I say could harm me, but I like to imagine that nothing bad could come from being sincere. I am a trusting person, and I do not regret that.” <sup>85</sup>

1950s, a scientist making a unique medical discovery had special status, and merited pardon, suspicious foreign contacts notwithstanding, unlike a condemnable scientific *administrator* or public official (director of an Academy of Sciences institute, for example, or member of the JAC Presidium—Shtern—or Academy of Medical Sciences secretary—Parin). Thus, Shtern saw her task—in her testimony, and her prison writings—as representing herself, not as an administrator or official, but a working scientist, eager to return to her lab and formulate new research plans even while incarcerated.

To substantiate the strategic significance of studying blood-tissue barriers, Shtern connected this topic to the quest for effective cancer treatments—the most pressing, and politicized, direction in Soviet medical research. She sought to be seen as no more than a scientist devoted to her (strategically crucial) work; hence her self-portrayal, in statements at trial, as a starry-eyed believer in science’s borderlessness—too much of an idealist to spot foreign perfidy. In other words, just like the character Dobrotvorsky. If we compare her statements in court to his lines in the play and movie, we find striking similarities.

Accounts of Shtern’s behavior during the investigation are contradictory. The actress Tat’iana Okunevskaia, who shared a cell with Shtern in 1949, recalled that she “defended

<sup>78</sup> Aleksandr Shtein, *Zakon chesti: P’esa v chetyrekh deistviakh* (Moscow, 1948), 32.

<sup>79</sup> Shtein, *Zakon chesti*, 88.

<sup>80</sup> Shtein, *Zakon chesti*, 31.

<sup>81</sup> *Ibid.*, 139.

<sup>82</sup> Naumov, Kraiushkin, Teptsov, *Nepravednyi sud*, 318.

<sup>83</sup> *Ibid.*, 319.

<sup>84</sup> Naumov, Kraiushkin, Teptsov, *Nepravednyi sud*, 371.

<sup>85</sup> *Ibid.*, 320.

herself in a cowardly and nasty manner,” betraying many acquaintances under questioning,<sup>86</sup> whereas Aleksandr Borshchagovsky finds the interrogation minutes marked by “honesty and truth,” with Shtern remaining “true to herself.”<sup>87</sup> Diametrically opposite in their evaluations, both nevertheless consider her guileless. Alice Nakhimovsky, on the other hand, sees Shtern’s ostensible naiveté as a carefully planned *tactic*—one she had used before.<sup>88</sup> The comparison of the JAC trial transcripts with Shtein’s play supports Nachimovsky’s conclusions. The role of the “naive scientist” had a very memorable recent prototype.

Shtern took care to emphasize her naiveté, shortsightedness, and inability to understand political matters: “I am not an investigating officer, I am a scientific researcher. . . . I am not qualified to make any judgments on these matters. . . . I don’t consider myself knowledgeable in these matters. . . . If I weren’t so trusting, I would not be sitting here, but I do not regret being trusting.”<sup>89</sup> Shtern thus framed her “cosmopolitanism” as simply a matter of innocently following her natural inclinations.<sup>90</sup>

The final link between the KR drug and Shtern’s fate was a circumstance unknown to Shtern at the time, but certainly known to whichever MGB leaders were consulted in deciding whether she should be allowed to write. On October 22, 1951, the Politburo approved the draft decree “On organizing a scientific research institute for experimental pathology and cancer therapy at the USSR Academy of Medical Sciences,” which stated, among other things, that the anticancer properties of the KR drug were not confirmed by experiments, and that the Kliueva-Roskin laboratory would be closed.<sup>91</sup> As described above, it was specifically in late 1951 that, after multiple requests, Shtern was allowed to write a summary of her research ideas.

The KR case would have been the best-known example of pardon-via-research, and we know of Shtern’s biographical connection to both scientists; but there were other precedents. There was the distinguished (and thrice-arrested) physician Lev Zilber (1894–1966), who discovered, while interned in a camp, a cure for pellagra, a nutrient-deficiency disease common in besieged Leningrad. After this discovery, Zilber was first made head of a camp medical-research lab, then transferred to Moscow to the “special-assignment prison institute.” Released on March 25, 1944, he was able to publish an article—on *cancer*—in *Izvestia*.<sup>92</sup> Another prominent physician, Pavel Zdrodovsky (1890–1976), twice imprisoned (1938–1944), conducted research under NKVD supervision: first, while a Gulag internee, he was sent to combat a brucellosis outbreak in Kazakhstan, then worked in a prison laboratory to study typhus (whose spread among servicemen greatly concerned Soviet leaders), which earned his release in 1944.<sup>93</sup>

Shtern must have known the stories of Zilber and Zdrodovsky, as both joined the USSR Academy of Medical Sciences in 1945, soon after its founding; Shtern herself had been among the academicians first elected in November 1944. Thus, she knew of at least two prominent

<sup>86</sup> Tat’iana Okunevskaia, *Tat’ianin den’* (Moscow, 1998).

<sup>87</sup> Aleksandr Borshchagovskii, “Obviniaetsia krov’,” 115.

<sup>88</sup> The lines from her testimony might well have been thought out in prison. Their apparent spontaneity seems part of the intentional naiveté that she sometimes projected. Alice Nakhimovsky, “Assessing Life in the Face of Death: Moral Drama at the 1952 Trial of the Jewish Anti-Fascist Committee,” *East European Jewish Affairs*, 48, no 2 (2018): 201.

<sup>89</sup> Naumov, Kraiushkin, Teptsov, *Nepravednyi sud*, 311, 314, 320.

<sup>90</sup> Of course, cosmopolitanism, as Gennady Estraiikh succinctly reminds us, “was at the time a serious accusation that could lead to being fired, prevented from publishing, and in some rare cases even arrest. . . . But still, the highest form of punishment was not expected for these charges.” Gennady Estraiikh, “Smertel’no opasnoe natsional’noe edinienie” in *Sovetskaia Geniza*, 320–21.

<sup>91</sup> Kremontsov, *V poiskakh lekarstva protiv raka: Delo KR*, 228; see also RGASPI, f. 17, op. 3, d. 1091, l. 25.

<sup>92</sup> L.L. Kiselev and E.S. Levina, *Lev Aleksandrovich Zil’ber, 1894–1966: Zhizn’ v nauke* (Moscow, 2004); this book also includes Zilber’s memoirs about his work in camps.

<sup>93</sup> A. Antonov-Ovseenko A., *Portret tirana* (New York, 1980), 173; Ya. Rapoport, *Na rubezhe dvukh epokh. Delo vrachei 1953 goda* (Moscow, 1988), 53; Lev Razgon, *Plen v svoim otechestve* (Moscow, 1994), 271–75.

medical scientists who worked on topics of strategic significance while incarcerated, and were then released; and one of these cases also involved cancer research. During the JAC investigation, Shtern chose a topic crucial to the scientific competition of the emerging Cold War.

### The American Context and the Birth of Chemotherapy

Shtern's treatise, and the Soviet foregrounding of Kliueva and Roskin's project, directly pertained to concurrent developments in US cancer research. Given the inadequacies of surgery and radiotherapy, both the US and USSR were experimenting with anticancer drugs. In 1935–53, at what would later become the National Cancer Institute, Murray Shear and his research team tested the efficacy of various compounds. When results proved elusive, skepticism about chemotherapy set in, later overcome as, for instance, Charles Heidelberger and his University of Wisconsin colleagues developed a drug effective on solid tumors.<sup>94</sup>

The cancer treatment Shtern theorized in her prison cell, without access to medical literature or laboratory experimentation, was in essence the method of chemotherapy, with two advantages over methods being developed in the US: 1) perhaps owing to her own sparse knowledge of oncology at the time, and her post-arrest isolation from recent scientific developments, Shtern intentionally left the active substance unspecified, in effect positing that different organs and tumor types would respond to different compounds; and 2) her method foregrounded the specific internal environment of organs where cancerous growth occurs. Shtern hypothesized that each organ would require a different method for breaching the blood-tissue barrier to introduce these various medicinal compounds.

### The Political Environment of the Cold War

When Lina Shtern was in prison, drafting her manuscript and, perhaps, reflecting on the implications of the KR case, she was following the new Cold War rules. By 1945, Soviet and US political elites understood that competition would henceforth depend on science and technology, including in the civilian sphere. International prestige became nearly as important as developing more powerful bombs. This is why, in the late 1940s–early 1950s, cancer treatment was a Soviet national priority, far beyond the sphere of healthcare.

The link between Shtern's "On Cancer" and her sentencing has been missed due to insufficient consideration of two aspects of her case: 1) the Cold War's well-known basis in scientific-technical, and not just military, competition; 2) Shtern's own unfolding understanding of these new rules.<sup>95</sup> To a reader well-versed in Shtern's work, the essay seems to cover little new ground; thus does Malkin describe her prison writings as "popular-science" articles, and Rapoport, as elaboration on the blood-tissue barrier. But in the nascent Cold War context, this non-novelty was corroborative: Shtern's previous discoveries pointed in a new, strategically critical direction. Her first readers—security personnel with no background in medicine or biology—received a clear explanation of how her scientific work from the last thirty years could lead directly to a cancer breakthrough. And her persuasiveness only increased as she played the part of the naive, trusting scholar, so devoted to science that international intrigue eluded her.

Shtern's colleagues read the essay as a simplified explanation of long-established theories. But to the readers deciding her fate, these same explanations vested her *future* research with great promise. And then, another plot twist: Stalin's death, the H-bomb tests, and the new turn in foreign policy—and cancer treatment was relegated from the national-strategic to the medical sphere. In the mid-1950s, Shtern's room-lab was tasked with a different project for the military: studying the effects of radiation (nuclear war fallout) on the blood-brain

<sup>94</sup> Vincent T. DeVita, Jr. and Edward Chu, "A History of Cancer Chemotherapy," *Cancer Research* 68 (2008): 8643–53.

<sup>95</sup> Pollock, *Stalin and the Soviet Science Wars*, 5.



barrier and bodily homeostasis. Shtern did not publish a single article on cancer treatment after her release, having never conducted research on it, and presumably unwilling to present work based on general speculation. Shtern's research-related trial defense receded with time. The condemned JAC members were posthumously exonerated in 1958, and in the early 1960s, both the Soviet Jewish underground and American Jewish historiography began to formulate the tidy myth of the martyred Jewish nonconformists.<sup>96</sup> Within that context, you could well be the lucky sole survivor, but telling *how* you survived could be quite awkward. Now that the JAC proceedings have been published, we know that Shtern was not the only maneuverer; scholars have begun discussing particular defendants' strategies.<sup>97</sup> The story of Shtern's de facto pardon clarifies the politics of Soviet science in the late 1940s and 1950s: a scientist could try to play by its rules, ultimately altering the course of her own prosecution with nothing more than pen, paper, and her own previous renown.

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<sup>96</sup> Estraikh, "Smertel'no opasnoe natsional'noe edinenie" in *Sovetskaia Geniza*, 145.

<sup>97</sup> Alice Nakhimovsky, "Assessing Life in the Face of Death."