

Bella Abramovna Subbotovskaya and the “Jewish People’s University”

George G. Szpiro

Exactly 25 years ago, on September 23, 1982, at about 11 o’clock at night, an accident occurred in a dark street in Moscow. A woman walked along the sidewalk. She had just visited her mother and was on her way home. It was a quiet street, hardly a vehicle passed by at this hour. Suddenly a truck appeared at high speed, hit the woman, and drove off. Moments later another car drove up, stopped for a moment next to the victim, and also drove off. An ambulance came—who had called it?—and took the victim straight to the morgue. The funeral took place the next day. It was a very low key affair, nobody talked, no eulogy was held. Mourners only whispered among themselves, all the while observed by a few official-looking men. Eventually everybody quietly dispersed. The hit-and-run driver was never found, and the case was closed. The accident had all the trappings of a KGB hit. The victim was the 44-year old mathematician Bella Abramovna Subbotovskaya. In the days preceding her death she had been summoned several times for interrogations to KGB offices. The “crime” about which she was questioned was the organization of a “Jewish People’s University”.

It is almost forgotten today, but not so long ago Jews were routinely denied entry to reputable institutes of higher education in the Soviet Union. Although the discriminatory practice was not limited to mathematics, it was especially glaring in this field to which Jews had been traditionally drawn. Twenty-five to thirty percent of the

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graduates of the high schools that were geared towards physics and mathematics were Jewish; only a handful were admitted to the top institutes. The most prestigious among them was MekhMat, the Department of Mechanics and Mathematics at Moscow State University. The driving forces behind MekhMat’s adherence to the anti-Semitic admissions policy decreed from above were V. A. Sadovnichii, currently rector of Moscow University; O. B. Lupanov, MekhMat’s dean from 1980 until his death in 2006; and A. S. Mishchenko, professor and senior examiner at MekhMat. But anti-Semitism in Soviet mathematics was not restricted to insignificant, small-minded people. Distinguished Soviet mathematicians were known to be pathological anti-Semites, for example L. S. Pontryagin and I. M. Vinogradov, who wielded enormous power over the lives and careers of Soviet mathematicians, but also, surprisingly, the human rights activist I. R. Shafarevich. The absurd justifications some of them gave for their virulent feelings against Jews—which were buttressed by the administrative authority some of them held—was that Jews are genetically programmed to develop mathematical abilities at an early age. By the time ethnic Russians fully develop their mathematical powers, so the reasoning went, all opportunities to study and all faculty positions are already taken by Jews. Such a situation was to be prevented by barring the latter from access to higher mathematics education right after high school. A more prosaic reason for the rabid anti-Semitism exhibited by the Soviet authorities was their cowardly desire to blame others for their economic and other failures.

During the 1970s and the 1980s, up until Perestroika, such a policy was strictly enforced. One institute to which entrance was all but barred to Jews was MekhMat. It was—and is—considered the premiere mathematical center in the then-Soviet Union and today’s Russia. Jews—or applicants

with Jewish-sounding names—were singled out at the entrance exams for special treatment. Written tests, identical for all applicants, were usually no problem for gifted and well-prepared students.¹ The hurdles were raised in the oral exam. Unwanted candidates were given “killer questions” that required difficult reasoning and long computations. Some questions were impossible to solve, were stated in an ambiguous way, or had no correct answer. They were not designed to test a candidate’s skill but meant to weed out “undesirables”. The grueling, blatantly unfair interrogations often lasted five or six hours, even though by decree they should have been limited to three and a half. Even if a candidate’s answers were correct, reasons could always be found to fail him. On one occasion a candidate was failed for answering the question “what is the definition of a circle?” with “the set of points equidistant to a given point.” The correct answer, the examiner said, was “the set of *all* points equidistant to a given point.” On another occasion an answer to the same question was deemed incorrect because the candidate had failed to stipulate that the distance had to be nonzero. When asked about the solutions to an equation, the answer “1 and 2” was declared wrong, the correct answer being, according to an examiner, “1 *or* 2”.² One candidate received a failing grade for making use of the “unsubstantiated inequality” $\sqrt{6}/2 > 1$. And if an applicant, against all odds, managed to pass both the written and the oral test, he or she could always be failed on the required essay on Russian literature with the set phrase “the theme has not been sufficiently elaborated.”³ With very rare exceptions, appeals against negative decisions had no chance of success. At best they were ignored, at worst the applicant was chastised for showing “contempt for the examiners”.

Such was the setting when, unbeknownst to each other, two courageous individuals, Valery Senderov and Bella Subbotovskaya, decided to do something about the sorry situation. Senderov, who had done work in functional analysis, was a mathematics teacher at Moscow’s famed “School Number 2”, and Bella, who had already published important papers on mathematical logic, held positions at various technical research institutes performing programming tasks and numerical

¹Even this is not quite correct. According to one source, MekhMat officials opened the written exams—which had been handed in carrying only ID-numbers and no names—identified the Jews, and drastically reduced their grades.

²On a different occasion, the same examiner told another student the exact opposite: “1 or 2” was considered wrong.

³In truly Kafkaesque manner, even a perfect score did not guarantee admittance to a Jewish student. “Grades received at entrance examinations do not play a decisive role for admission to our Institute,” the prospectus of the Moscow Institute for Physics and Technology read.



Photo courtesy of Ilya Muchnik. Picture quality improved by Poline Tylevich.

**Bella Abramovna Subbotovskaya,
1961.**

computations. The two met by coincidence in July 1978 on the steps of the main building of Moscow State University, where the entrance exams to MekhMat were taking place. Their aim was to assist students who had just failed the oral exams with the formulation of letters to the Appeal Committee. Senderov had a further aim in mind: together with his colleague Boris Kanevsky, he was going to document the racially motivated bias and unfairness in the MekhMat entrance exams. Senderov was just talking to one of the flunked students when the examiner rushed out and challenged him. An altercation ensued that soon degenerated into a scuffle; security was called, and Senderov was forcefully removed from the premises. This event marked—as Kanevsky recounted at a recent memorial session at the Technion in Haifa in tribute to Bella⁴—the beginning of an ambitious and dangerous undertaking, the creation of a “Jewish People’s University”.

Bella Abramovna is described by her friends and admirers variously as loud, energetic, and demanding, but also as warm, kind-hearted, optimistic, with great courage and resolve. She had fallen in love with mathematics beginning in first grade and that love never abated, even though she also informally prepared for a career in music and played

⁴I will refer to B. A. Subbotovskaya simply as Bella, as everybody did and does. The conference in her honor took place March 12–19, 2007.

several instruments. As an educator “she had the ability to convey her perception to the most varied types of people,” her husband Ilya Muchnik would later write.⁵ She could evoke appreciation for her subject in almost all persons with whom she dealt, be they grade-school children for whom she designed mathematical games; adults attending evening school, weary from a full day’s work; or gifted high-school graduates who were denied entry to Moscow State University.

Bella and Ilya met at a seminar on cybernetics where a paper on how to compose music on a computer was discussed. Bella, who had studied violin for ten years at the music school, and Ilya, who had the idea of studying the statistics of musical fragments in Jewish folk songs by computer, immediately took a liking to each other. After about a year, in the summer of 1961, they decided to get married and moved into a six square meter room with a stove-heater and an outhouse in the yard. They lived in poor surroundings in a beehive of buildings, each of which was occupied by three or four Jewish families, complete with numerous children and grandparents. The common language among the neighbors was Yiddish. The wedding was a very authentic affair held in the yard, with everybody singing Jewish folk songs, accompanied by Bella on the violin.

After their marriage, Bella made a meager living performing engineering tasks for various technical research institutes. She did not like her routine work but did it diligently nevertheless. A change was brought about when the couple’s daughter began studying at high school.⁶ Bella started wondering where children of her daughter’s school, many of whom were Jewish, would pursue their studies after graduating. This is when she became painfully aware of the dead-end that awaited Jewish children. Even the most gifted among them had practically no hope of studying at first-rate institutes. Bella herself had been lucky enough to attend MekhMat in the mid-1950s, a period after Stalin’s death and at the beginning of the Khrushchev era, when Jews were not yet discriminated against. But by now, in the late 1970s, the situation had vastly deteriorated. Bella decided to devote herself to furthering the ambition of dedicated and mathematically gifted high-school graduates. She helped prepare them for the entrance exam to the faculty of mathematics and assisted those denied entry in writing the necessary letters to the appeals committees.

Meanwhile Senderov and Kanevsky wrote the underground classic “Intellectual Genocide” in which they documented the results of their investigations of failed Jewish MekhMat candidates. The

⁵Muchnik is now Research Professor at the Department of Computer Science, Rutgers University, New Jersey.

⁶Bella’s daughter today lives in the USA and works for a furniture company.

mathematical economist Victor Polterovich had collected statistics on the admission of students from Moscow’s leading mathematics and physics high schools to MekhMat. In 1979, of the 47 non-Jewish students who applied, 40 were admitted, but only six of the 40 students with Jewish names. This was after a kind of self-selection had already taken place, with many Jewish students not even applying. The questions given to candidates with Jewish names were distressingly difficult, and the reasons for failing the students or denying their appeals were equally hair-raising. Polterovich also wrote a “Memo for students applying to MekhMat who are thought of as being Jewish”, which was distributed by Senderov and Kanevsky. But then Bella did much more. She decided to partially restore hope and fairness by giving the rebuffed students an opportunity to obtain a fundamental mathematical education at her home.

Since appeals to the appropriate committee were of no avail, the failed students were left with no option but to study at institutions that prepared them for professional careers, like the Institute of Metallurgy, the Pedagogical Institute, the Institute of Railway Engineers, or the Institute for the Petrochemical and Natural Gas Industry. They would get a solid grounding in applied mathematics but would have no hope of ever glimpsing beyond the immediate areas of the professions for which they were trained. Pure mathematics would remain out of reach.

But Bella would have none of that. In the fall of 1978 she started an ambitious and unprecedented undertaking in her own home: the “Jewish People’s University”. Bella’s former classmate Alexandre Vinogradov, who had received his doctorate from MekhMat fifteen years earlier and was now a professor at that institute, devised a nonstandard advanced study program for the initial course. Together with former and current Ph.D. students, he taught the initial course.⁷ The university began as a study group with a dozen or so students, but news about the undertaking quickly spread by word of mouth. No equipment was available except for a children’s chalkboard standing on an unstable tripod. Later, a more suitable blackboard was obtained. Since it could not fit through the narrow staircase of the tenement where Bella (now divorced) lived, it had to be hoisted through the fifth-floor window. Bella was the guiding spirit behind every aspect of the unique undertaking. She herself did not teach, but solicited the help of former classmates, now established mathematicians, to lecture at her university. The informal institution was open to everyone, but most

⁷Because of ideological differences with other faculty members, Vinogradov left the project after a few months. The point of contention was whether Bella’s university should limit itself to teaching mathematics or be part of the broader struggle against the Soviet regime.

students and many teachers, though by no means all, were Jewish.

And there was no lack of gifted teachers; the recruited faculty was of the highest caliber. The courses taught in Bella's apartment, and later at other venues, corresponded to the first two years of the MekhMat undergraduate curriculum. Vinogradov, Senderov, Alexander Shen, and Andrei Zelevinsky taught calculus; Dmitry Fuchs differential geometry and linear algebra; Alexey Sossinski, a Russian born in Paris and brought up in America, lectured on modern algebra; Boris Feigin gave courses on topology and commutative algebra; Victor A. Ginzburg taught linear algebra; Mikhail Marinov—who, after having applied for an exit visa to Israel, labored as a construction worker—lectured on quantum mechanics and field theory; seminars were run by Boris Kanevsky.⁹ Universities all over the world would have been proud to have a faculty of the quality found at Bella's Jewish People's University. Nobody received any money. The teachers took on the selfless and risky task motivated solely by human decency, to right a wrong, and out of love for mathematics. There was even a "visiting" professor: once, during a trip to Moscow, John Milnor came to lecture.

Word of the underground university got around, and the student body grew. Soon, the auditors no longer fit into Bella's minuscule apartment. Other venues were sought and used—with and without permission: classrooms in elementary schools, empty study halls in the university's law department, the chemistry building, the humanities building, the Institute for the Petrochemical and Natural Gas Industry. In 1979, the second year of the Jewish People's University's operation, about 90 students attended its classes. Bella did everything, organizing the meetings, calling the students to inform them of the schedule and venue, even distributing tea and homemade sandwiches during the breaks between the lectures. One important and risky undertaking that she organized was the samizdat preparation and distribution of lecture notes. At first they were typed and re-typed using carbon copies, equations being inserted by hand. Eventually they were photocopied. Nobody dared ask how and where, since unauthorized duplication was considered a serious crime in the Soviet Union. In 1980, study sessions were increased to twice a week. Saturdays were reserved for three lectures and a seminar.

Even though some of the faculty members and students, especially Senderov, were known dissenters of the Soviet system, any mention of politics was carefully avoided by the teachers at Bella's university. But the enterprise was becoming too successful for the authorities to ignore. Even though it had no political intent whatsoever,

⁹There were more. Altogether 21 people taught at the university.

it defied the Soviet system on a grand scale. The authorities could not allow an unofficial and independent institution to flourish, thereby challenging its sole claim to authority. The mere existence of the Jewish People's University was considered a political act of resistance by the authorities. The end loomed near.

At the beginning of the university's fifth year of operation, Bella was summoned to KGB offices and interrogated. It had been known all along that KGB agents had attended lectures in order to observe the goings-on. They must have known that no subversive activities were carried out at the Jewish People's University. But they never comprehended what kind of institution Bella's university was. The agents just could not grasp that people were willing to teach mathematics without being paid. One day in the summer of 1982, news came that Senderov, Kanevsky, and a student, Ilya Geltzer, had been arrested.¹⁰ They had distributed leaflets protesting unpaid "volunteer" work that the Communist Party demanded of loyal citizens on the Saturday commemorating Lenin's birthday. Senderov and Kanevsky were known dissenters of the Soviet regime but had always kept mathematics and politics strictly separate. Nevertheless their and the student's affiliation with Bella's enterprise gave the authorities the excuse they sought.

Bella was summoned again and asked to serve as a witness against Senderov. Of course, she refused. Her independent spirit would not allow anything but defiance of authority. The tragic consequences occurred a few days later. The bus of Moscow State University's chamber orchestra, where she had played first viola since her student days, took her body to the cemetery. Her ashes were later buried at the Jewish cemetery Vostryakovo.

Bella's death spelled the end of the Jewish People's University. Senderov was sentenced on charges of anti-Soviet agitation and propaganda to seven years in prison—where he would spend long stretches in punishment cells sustained by a meager diet that left him too weak to even rise from his bunk.¹¹ Kanevsky was sentenced to one year and two months in prison. Seminars continued for a few more months due to the valiant efforts of some remaining faculty members, but without Bella's support and guiding hand the spirit was missing. In the spring of 1983 the institution finally closed its non-existent doors. During the four years of its operation, the "Jewish People's University" had instructed about 350 alumni in higher mathematics and brought forth about 100 "graduates", some of whom would become professional mathematicians and faculty members at

¹⁰Another young man, Vladimir Gershuni, was arrested together with them and later forcibly confined to a mental institution.

¹¹He was released by Gorbachev after Perestroika, having spent five years in prison.



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prestigious institutions, mostly in the United States and in Israel. But Bella had given her alumni more than just a math education: in the face of injustice, discrimination, and seemingly insurmountable difficulties, she had offered them hope and taught them to fight back.

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