

Hostages of scientific freedom in the USSR

M. A. Morozov was sentenced to 25 years of imprisonment for his attempts to change the political system in Russia forcibly. N. I. Kibaltchich was sentenced to death for the participation in the assassination of the Russian ruler. Both had no problems in continuing their scientific research and publishing in Russian journals until the last minute of their lives.

GUEST COMMENT

by
M. Ya. Azbel

Unbelievable? Yet, this tale is true. Of course, it happened before the revolution of October 1917. The reactionary Tzar clearly understood the difference between political and scientific activity, did not mix them up and respected the latter one. Also, he accepted the premise that scientists rather than the government determined what is science and what is politics.

Since then the situation in Russia has changed drastically. A Western professor might assume that the harassment of geneticists by Stalin and Lysenko had a scientific origin, but Soviets consider it a purely political activity. Because science in the USSR is absolutely centralized, all appointments are controlled by the Party and KGB officials; any scientific research is a privilege and must be authorized by them. For instance, only one who has an official position as a physicist in a scientific institute or university is allowed to publish a paper on physics in a scientific journal. A patent expert such as Einstein or a teacher like K. E. Tsiolkovsky (who is considered a grandfather of astronautics in Russia) would not have this possibility. This control makes science an excellent tool for political persecutions and forces sociologists, economists, historians and many, many others to create pro-Soviet pseudoscience.

But now there has appeared a slight crack in this monolithic system with the recent emigration of scientists from the Soviet Union. Some hundreds of scientist-emigrants are nothing compared to the millions of Soviet scientists. But the very possibility of a choice for a scientist



between the West and the East implies an inevitable step towards the freedom of science; for example, the unpunished destruction of genetics in the USSR in 1948 would be impossible in a situation where emigration could occur. That is why the Soviet hierarchy is so eager to demonstrate to all Soviet scientists how dangerous it is to apply for an exit visa. Although any scientist is legally entitled to make an application, depriving the scientist of his work has become an excellent illegal tool of harassment. Typically, a scientist who applies for a visa is immediately fired and thus becomes totally dependent on Western charity, as no unemployment relief exists in the Soviet Union. He becomes a "refusnik" (that is, he is refused an exit visa), often for many years, without any written explanations (I know hardly any emigrant physicists who were not refusniks). Then he may be accused of espionage (which may result in the death sentence), as was V. Brailovsky from Moscow for holding a scientific seminar in his apartment or as was V. Kislik from Kiev for an attempt to publish his paper in a Western scientific journal. He may also be imprisoned and then exiled for so-called parasitism (that is, for having no job after having been fired, and despite the fact that it is impossible to find any official job—such is the logic of illegal harassments), as was J.

Begun from Moscow. He may be imprisoned for an attempt to have scientific sessions with Western scientists, as were Voronel, Azbel', Brailovsky, Luntz, Ramni and Rosenstein in 1974. This is to say nothing about house arrests, night searches, KGB supervision and so on and so on.

At the same time, the Soviet hierarchy has been forced to offer a carrot of a certain amount of freedom to "official" scientists to counter the temptation to emigrate even under the horrible risk. For instance, before my application for an exit visa, practically none of my former colleagues at the Landau Institute for Theoretical Physics participated in scientific missions abroad (which are a privilege in the USSR). But after my application practically all of them became frequent guests in the West and were favored in other ways. So some hundreds of persecuted scientist-refusniks have become hostages for scientific freedom in one of the largest scientific communities in the world. The fact that most of the refusniks are Jews should not lead to any misunderstanding: because many Jews see their situation as absolutely intolerable they are willing to undergo such a risk. Also, there should be no question about the brain drain. The relative material position and the prestige of a Soviet scientist is so incomparably higher than in other countries (for instance, a net salary of an ordinary Soviet academician is 20 times higher than an average Soviet salary) that any significant emigration would be unnecessary if the Soviet establishment were to allow a reasonable freedom of emigration, implying civil and scientific freedom.

Such freedom may not remain a dream. Many factors are in its favor. The concern of Western scientists, their committees, societies, associations and other bodies throughout the world have made possible not only the emigration of scientists, but, for the first time in Soviet history, the existence of politically independent scientific seminars (the most popular of them, the Moscow Sunday seminar, unites about a hundred scientists from twelve cities and has been attended by over 250 Western scientists), and even the four-day International Symposium on Collective Phenomena in April 1977, in Moscow.

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letters

The support of Soviet "excluded scientists" by their Western colleagues does not imply involvement in politics. A scientist should not be concerned with any politics, including the Soviet policy of political discrimination against scientists. A Western scientist who has discussions with, and lectures to, Soviet-authorized scientists, while ignoring their Communist or KGB activities, should be equally circumspect in dealing with other Soviet scientists who have been fired or become refuseniks. Also, participation in official scientific delegations to the USSR does not imply, I think, the acceptance of totalitarian ethics. Is one supposed to eat human meat and become a pagan if one is invited to visit cannibals? The same reasoning applies to scientific meetings. They should be rejected if—and maybe only if—they become political demonstrations of discrimination against certain scientists. This policy will only benefit scientific exchanges for it will encourage more exchanges and more involvement of scientists in them. For any country, including the USSR, will choose to stop discriminating against scientists rather than sacrifice its scientific international contacts.

We need to give special concern to those scientists who are in the immediate danger of imprisonment for their scientific activity, as are Brailovsky and Kislik. Almost everybody becomes concerned when a scientist is imprisoned, as were Shchazansky, Orlov, Ginzburg and Begun, but to save anybody from a Soviet jail is extremely difficult, even for the President of the United States. Meanwhile, a Soviet decision to imprison a scientist indicates the regime's utmost desire to get rid of him. If the imprisonment becomes troublesome, the exit visa is the only alternative. Moreover, I suggest that it is most humane, ethical and democratic to focus concern on the most endangered, rather than the most famous, scientists. The concern gives any Soviet scientist a feeling of international scientific solidarity and a certain protection from persecution, thus influencing the whole situation in Soviet science. Science is unique and knows no borders.

To summarize: "When an axe was invented, all trees shuddered from fright. But the axe answered them: do not give wood for handles, and none of you will suffer." (Haggada)

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2/2/78

Developing a tape depository

The American Institute of Physics should set up an additional depository beyond the Physics Auxiliary Publication Service. It is our belief, being contributors to it,

that PAPS is of very little use to human beings. The material in it is mainly of value to other computers. To keypunch the numbers from PAPS to cards could be a tremendous amount of work, and the final result would contain many errors.

Thus it should be possible to submit to the AIP a tape containing the material also submitted to PAPS. If someone wished these numbers, the tape could be copied and the copy sold (or rented) for direct use by the purchaser's computer.

What is important in developing a tape depository is a set of procedures and rules. There are also various questions to be answered about such a depository.

Suppose that we wanted a copy of a tape deposited with PAPS. How would we obtain it? What would the cost be? Could it be rented? Would there be any charge for depositing a tape as there is for printed material?

When a table of numbers is presented to a reader, it has a caption giving detailed instructions for its use. Likewise, when a tape is placed on a computer, the computer must be given detailed instructions. If information is lacking, the tape is worthless. The programmer must also be given information about these numbers so he can tell the computer how to handle them.

Obvious data that must be supplied include tape density (will PAPS supply a tape with a different density from that deposited), logical record length, batch size, information about labels and card-punching code (EBCDIC or ASCII). Also the language of the program that wrote the tape must be given, as well as the format of the numbers (which tells their data type). Information equivalent to that in the caption of a table, about the organization and meaning of the numbers, must be supplied. Perhaps it would help to have, on the tape, the program that wrote it (but presumably not the one which generated the numbers, but only some subsidiary program). Of course all variables would have to be very carefully defined, including specifications of indices.

One step in particular would be an important part of the procedure for depositing tapes. When a tape is received it should be run by the AIP and part of the data printed out, to be compared with a sample that should be submitted at the same time as the tape. It would be unfortunate if it were found, ten years later, that the wrong tape was deposited, or even that the instructions were incomplete.

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REPLY FROM AIP: The proposal of Schindler and Mirman is a very inter-