

# Introduction to the interviews of former Soviet and / or Russian scientists\*

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This is a short introduction to the five interviews of former Soviet/Russian scientists emigrated in Israel, which I undertook as a part of my postdoctoral project “Scientific autonomy and values in science. Historical-philosophical analysis of the current debate and confrontation with case studies”, at the Jacques Loeb Center for the History and Philosophy of the Life Sciences, Ben-Gurion University of the Negev (Israel). The interviewees were: David Danovich, quantum chemist at the Hebrew University of Jerusalem; XXX, physicist in Israel (who asked to remain anonymous); Alex Khenkin, organic chemist at the Weizmann Institute; Irena Efremenko, theoretical chemist at the Weizmann Institute; and Michael Gedalin, theoretical physicist at Ben-Gurion University of the Negev. These interviews were intended to serve as a preliminary empirical investigation of the relationship between science and non-scientific values, in the context of an authoritarian regime – where the influence of non-scientific (typically ideological and political) values may be particularly striking (although this remark in no way implies that science in democratic countries is immune to such influence). I took advantage of the fact that there are many Jewish emigrated scientists from the former Soviet Union (SU) or Russia in Israel, and in particular in Beer Sheva. Section 1 makes some methodological remarks about the interviews and their use in the philosophy of science. Section 2 briefly summarises some findings of the interviews. Note that the interview guide itself is given in each interview transcript.

## 1 Methodological remarks about the interviews

Interviews represent, for history of science as well as philosophy of science, an empirical material. History of science is usually considered to be, to a variable degree, an empirical and descriptive discipline (history of science being in addition specific in comparison to other subfields of history because of its particular object of study). Philosophy of science, on the other side, is rather considered as a conceptual and normative discipline. It is therefore legitimate to ask why, and how, empirical data may be gathered for the latter (note that history of science itself provides empirical material to philosophy of science).

### 1.1 Why gather empirical data?

Philosophy of science, like any science (in the large sense German sense of *Wissenschaft*, including the social sciences and the humanities) seeks to be empirically informed. Indeed, it seems reason-

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able, in order to take a normative stance on something, to first know what that thing concretely is. In particular, empirical data can serve to:

- illustrate or specify existing philosophical ideas or concepts;
- test these concepts in order to confirm, disconfirm or revise them;
- inspire new ones.

Regarding historical material, there is of course a long tradition of cooperation and mutual influence between history and philosophy of science, where, roughly speaking, philosophy is used to ‘understand’ history, and history is used to ‘modify’ philosophy, in a back and forth movement (for a detailed classification of the various kinds of relationships between history and philosophy of science, see Loison (2016)). Therefore empirical historical material can be used to elucidate the current philosophical debate, and amend some ideas or concepts from it. Conversely, this debate can also help to better understand the data gathered.

## 1.2 How to gather empirical data?

Empirical data can be:

- historical data taken from archival records, published work, etc.;
- contemporary data taken from case studies, surveys, interviews, participant observation (see Wagenknecht et al., 2015).

Regarding interviews, which is the subject of study here, I decided to opt for semi-structured interviews, with pre-defined questions, but some flexibility regarding the course of the interview, as long as the core questions are answered. This enables to gather qualitative empirical data which allows to go in-depth<sup>1</sup>, while at the same time allowing the interviewee to develop themes which she thinks are important and in which she is knowledgeable. The thematic analysis of the interviews was both data-driven (in order to identify recurrent, new themes) and theory-driven (in order to answer my questions) (Fereday and Muir-Cochrane, 2006). Finally, the interviews comprised both:

- descriptive questions (What is / was their work as a scientist? How did / do extra-scientific factors shape scientific practice? What was the situation in the Soviet Union? What is the situation in Israel?); and
- normative questions (What are their own views about the influence non-epistemic values should have in science? Which norms do they adhere to?): the investigation of scientists’ own normative views (which is still rare in the literature, see Gundersen (2018, 3)) and reasoning/argumentation can be especially fruitful to improve the philosophical debate and be of relevance to scientists themselves.

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<sup>1</sup>Something not possible with surveys, which in addition are also liable to ambiguity or misunderstanding, whereas in interviews one can follow the interviewee’s reasoning and argumentation.

### 1.3 Relevance of non-epistemic values

In general, the interviewees had little to say about extra-scientific values regarding the core phase of scientific inquiry, which concerns what to conclude from the investigations (see section §2), and which is the most controversial in the philosophical literature. This is not surprising since they all come from theoretical natural sciences (physics and chemistry) in which values are usually not relevant in this phase (and even, although to a lesser extent, in the other phases). This contrasts with disciplines directly permeated by values (such as medical science or engineering) or policy-relevant disciplines (such as toxicology or climate science), which have ethical or societal implications.

Regarding the descriptive questions, in addition to the influence of their disciplinary fields, it is not surprising that scientists who were educated and worked in the Soviet Union (SU) do not have much to say about non-epistemic values in science. In that period (1970s-1990s), the value-free ideal of science was clearly the received view – as it probably still is today for the vast majority of practicing scientists. Furthermore, the mere fact of talking about social and political matters (including values) was – and still is in today’s Russia – a highly dangerous thing to do, understandably avoided by most people (including of course of scientists). One should not underestimate the ‘Western pregnancy’, so to speak, of the contemporary philosophical debate on values in science.

Regarding now the normative questions, this part did not fit well with the descriptive part in the interviews performed. Indeed, whereas the interviewees had much to say about their past experience, they had little to say about their own normative views: they rather wanted to ‘tell their story’ than to reflect about their scientific practice<sup>2</sup>. This does not necessarily mean that they have little to say about values: they may just be unwilling to do so, at least not directly. Of course no one would acknowledge that they were influenced by ‘ideology’, but even influence of extra-scientific factors formulated in less pejorative terms can be very difficult to acknowledge, especially for researchers in pure science where it is particularly badly considered. Therefore there is a need to infer this influence from what the interviewees say, to investigate how they express this influence indirectly. To do this by assessing the difference between what they say and what they do in their scientific practice, would have required much more time than I had at hand and lied outside the scope of this study, which was purely based on the declarations of the interviewees. Another way, which I pursued partially, was to use historically or philosophically informed questions (for the descriptive and normative parts of the interview, respectively). I used a few historical or philosophical examples to trigger a reaction and get their opinion. Another way which I pursued only on a few occasions was to get their opinions (both for descriptive and normative aspects) by appeal to the group (colleagues, supervisors or students), which can make it easier for them to answer.

## 2 Some findings of the interviews

Following the interviews’ structure, we can divide the findings according to the following phases of scientific inquiry, which represent some of the major ways in which values can relate to science:

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<sup>2</sup>Apart from my potential own shortcomings as an interviewer, perhaps combining a descriptive and a normative part in the same interview (the normative part coming at the end, after an already long descriptive part) was not a good idea in the first place. There is also the problem of philosophical language: values may sound incomprehensible or negative to scientists. This is why I did not use this vocabulary, and talked of the extra-scientific context instead. Yet that may also be a too direct approach, as I discuss hereafter.

1. the choice of research avenues;
2. the conduct of research and the conclusions drawn;
3. the dissemination and use of results;
4. the organisational aspects (management of research, recruitment).

Each phase is divided according to the interviewees' experience in the SU and then in Israel. Finally, there is a section about their own normative views. The names of the interviewees supporting the claims are quoted in parentheses. While some views were unanimously shared among the interviewees (such as the absence of impact of extra-scientific factors on the conclusions drawn), other matters gave rise to conflicting viewpoints (such as the freedom to choose one's research avenues).

## 2.1 Choice of research avenues

Contrary perhaps to the received view regarding authoritarian regimes, several interviewees underlined the freedom to choose their research avenues and career direction which they enjoyed in the SU, although other factors could come into play which undermined it. Intellectual interest and scientific merit could be the sole drivers of the choice of disciplinary field and research avenues, extra-scientific factors having little or no influence (Gedalin, Khenkin, XXX). This was especially the case in pure science, which, in spite of the received view according to which the SU was privileging applied science, and which was indeed confirmed by some interviewees (Efremenko), was also thriving, in part because it was good for the prestige of the country (Danovich). What is more, in some fields researchers were not forced to follow research avenues of the West (in a logic of political competition, which has been underlined by Kojevnikov (2004)), but were free to try other, new ones (Khenkin).

However, freedom to choose one's research avenues could apply only to senior researchers, the hierarchical structure forcing lower-ranked researchers to follow their boss's avenues (Khenkin). This freedom could hold only as long as research was oriented towards applications, within a pre-determinate area whose boundaries were set by the scientific-political management of research institutes (Efremenko). Government-based funding (on the basis of military applications or prestige for the SU) also influenced which fields future scientists chose to follow (namely, those which were funded) (Danovich). Some disciplinary fields, deemed 'bourgeois' science (such as quantum chemistry, Khenkin) or inconsistent with communist theory (computer-based chemistry, Efremenko), were indeed banned, at least for some time. And some research avenues with military applications could be barred to Jewish scientists (Danovich). Some interviewees underlined the political control of which academic journals they were allowed to read (by fear that scientists would find political material there, or even understand that their discipline is in a better situation outside of the SU, Efremenko), while others reported they had free access to Western academic journals (Khenkin).

Regarding the situation in Israel, all the interviewees underlined the fact that funding (through applications to grants) has some influence on the choice of research avenues (although according to Danovich, this is also true of Russia now). This influence was seen both positively and negatively. On the one hand, the funding system enables to choose one's field of research and research avenues (especially funds from academic societies such as the Israeli chemical society, Khenkin). In addition, private funds are available from companies which are directed towards specific subjects. On the

other hand, grant applications make it difficult to start new research avenues, and competition (including the review of grants) can have negative influence in science (Gedalin). A detrimental effect of the hierarchical structure of grant-funded projects, where researchers must follow the principal investigator's research avenues (Efremenko), presents a surprising similarity with the Soviet case. However, competition for Israeli funding programmes (such as Shapira) was also seen as positive in the sense that it pushed the Israeli scientific level up (XXX). Similarly, the need to show that research has an impact on society to get funding was not seen as detrimental to freedom of research (Danovich).

## 2.2 Conduct of research and conclusions drawn

Regarding the conduct of research (e.g. the choice of hypotheses to be tested, the creation of models), both positive and negative effects of communism regarding research in the SU were outlined. On the one side some of Western models or theories (such as Kekule's structure in organic chemistry) could not be used because they were considered against communist ideology (for reasons unknown to the interviewee, Efremenko). On the other side Soviet scientists were allowed to take more risk in their research, because it had little impact on their career thanks to the security of their position (Efremenko).

Regarding the conclusions drawn (acceptance or rejection of a hypothesis or theory), all interviewees were unanimous in the fact that they never experienced an influence of non-scientific values in the conclusions drawn from their, or others', research, in Israel but also in the SU. In the latter, all interviewees claimed communist ideology had no influence on their work, and was purely formal. In particular, one interviewee (Khenkin) experienced a scientific controversy in which an opponent to his research head, in spite of having the political support of the Party, lost the confrontation because his position were not backed by evidence, contrary to the research head.

## 2.3 Dissemination and use of results

Regarding the dissemination of results, all the interviewees experienced difficulties to varying degrees in the SU, and none in Israel. Several barriers had to be overcome where the paper to be published had to be approved before it was allowed to be sent out. Papers that could have military applications, or large practical applications that could be sold, were not allowed for external (only internal) publication (Efremenko). Publication in Russian journals was possible, but very difficult in Western journals, for which a special permission from the KGB was required (Efremenko, Khenkin). What is more, the director of the research institute had to be systematically included as author (Danovich). It was also very difficult to attend international conferences (Khenkin).

## 2.4 Organisational aspects

In the SU, the influence of the extra-scientific context on organisational aspects of research was globally judged negatively by the interviewees. Regarding first material aspects like lab equipment and chemicals, some were very difficult, if not impossible, to find. Researchers had to synthesise many chemicals themselves, both for economic and political reasons (Khenkin). Regarding lab organisation, it was quite hierarchical, and the head told the research staff what to do (Khenkin). Regarding hiring, there was widespread discrimination based on ethnicity, in particular Jewishness (XXX). Regarding career advancement, specialising in theoretical work could be detrimental

(Efremenko). It clearly helped to be a member of the Party to get a promotion (Khenkin). Regarding funding, it depended on how well the lab head was connected to academic circles. But it concerned only equipment and materials; regarding human resources, the salary was ensured regardless (Khenkin). This situation was of course very different from Israel, where every researcher has the possibility to find grants from outside sources. In the SU, they didn't care about money, in the sense that salaries only depended on the hierarchical position in the research institute (Khenkin). This situation had both positive and negative consequences: on the one hand one did not spend time to write proposals, and had more free time to do research; on the other hand, there were researchers doing bad science, because there wasn't any competition, and the same salary for everyone (Khenkin).

According to all interviewees, the collapse of the SU led to the collapse of scientific research as well, many good scientists leaving the country. According to one interviewee (XXX), Russia is still not part of the international scientific community, which has of course detrimental effects on Russian science. In addition there is corruption in science funding, faking of papers, and the management of science is performed by people ignorant of science (XXX).

Regarding research in Israel, the organisation of research was assessed essentially positively, and based on scientific merit, by all interviewees (with the exception of the potentially detrimental influence of funding mentioned previously). One interviewee (Khenkin) nevertheless mentioned some 'conservatism' in Israeli science, and the network advantage which people who have been living in Israel for a long time enjoy, in comparison to immigrants from the SU.

## 2.5 Own normative views

All of the interviewees had difficulties formulating their own normative views, some of them not understanding how the question could even be raised, or showing reluctance to express their own view (Gedalin). Some claimed that science should have full autonomy from society (Gedalin, Efremenko), while others took a middle stance, and accepted that science should somewhat depend on society (Khenkin, Danovich). For Gedalin, the influence of money through funding was seen as undesirable but inevitable. For Khenkin, science should depend on, and help society, for issues like climate change or Covid, which have such a big impact on society; but basic research should also be able to proceed without influence from society. Danovich went further in claiming that the current influence of the extra-scientific context for funding was normal, and even optimal, since scientists are free to do what they want as long as they show that their research has social impact. Khenkin insisted that in many fields, only experts of the field can assess the extra-scientific influence, which should be evaluated on a case by case basis. Efremenko expressed her concern that scientific results should not be communicated too hastily because they may be badly interpreted by the general public.

## 3 Future perspectives

So far, the interviews performed are somewhat disappointing regarding their relevance for the philosophical debate on values in science, especially regarding the core phase of scientific inquiry (the conclusions drawn), on which the interviewees had little to say. More generally, they were not much interested in extra-scientific values for a variety of understandable reasons, as we briefly saw. Therefore, the interviews seem so far more interesting from the historiographical point of view of Soviet science studies rather than from the philosophical point of view of the contemporary debate

on values in science. Clearly, much more work (more interviews, and more focused questions) would need to be done in order to obtain solid findings, and the material presented here should be considered as preliminary (all the interviewees gave their agreement to be re-contacted). In order to strengthen or complete the emerging themes identified in section §2, several research avenues can be envisaged, according to the available resources:

- in general, the strategy mentioned in section §1 of indirectly probing the interviewees' opinion should be pursued;
- one can shift the focus of the questions asked: for example, ask the interviewees their opinion about what is good science, how funding should work, what role the capacities of the scientist, or her environment, should play;
- one could interview scientists from disciplines where values are more relevant, such as policy-relevant disciplines or engineering;
- interviews of American scientists emigrated to Israel could also be performed, and compared to those of former Soviet / Russian scientists: the comparison between an authoritarian and a democratic regime might inspire new research avenues.

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