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Remembering Science Cities: Urban Space and Community Identity of Post-Soviet Scientific and Technical Intelligentsia

Abstract

Based on 17 in-depth interviews conducted in Novosibirsk Akademgorodok, Dubna, and Chernogolovka, this study focuses on identifying and analyzing the specifics of the post-Soviet scientific and technical intelligentsia's cultural memory of Soviet science cities from the late 1960s to the present. The socio-cultural environment and institutional goals of Soviet science cities seem to have fostered a collective memory that transcends geographical and institutional boundaries, creating shared narratives despite the isolation and secrecy of these settlements. In the context of urban life in science cities, my informants downplay the complex relations between the Soviet intelligentsia and the communist state, and focus on class tensions: while the state provides scientists with

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a high level of care, it is the workers and their families who represent "others" in their narratives.

Keywords: *cities of science, community identity, place-attachment, USSR, Akademgorodok, intelligentsia*

Pamięć o miastach nauki: przestrzeń miejska i tożsamość społeczna postsowieckiej inteligencji naukowo-technicznej

Abstrakt

Niniejsze badanie, oparte na siedemnastu pogłębionych wywiadach przeprowadzonych w Nowosybirskim Akademgorodku, Dubnej i Czernogołowce, koncentruje się na identyfikacji i analizie specyfiki pamięci kulturowej postsowieckiej inteligencji naukowo-technicznej o radzieckich miastach nauki od końca lat 60. XX wieku do chwili obecnej.

Środowisko społeczno-kulturowe i cele instytucjonalne radzieckich miast nauki zdają się sprzyjać zbiorowej pamięci, która przekracza granice geograficzne i instytucjonalne, tworząc wspólne narracje pomimo izolacji i tajności tych osiedli. W kontekście życia miejskiego w miastach nauki moi informatorzy bagatelizują złożone relacje między sowiecką inteligencją a państwem komunistycznym, koncentrując się na napięciach klasowych: podczas gdy państwo zapewnia naukowcom wysoki poziom opieki, to robotnicy i ich rodziny reprezentują „innych" w ich narracjach.

Słowa kluczowe: *miasta nauki, tożsamość wspólnotowa, przywiązanie do miejsca, ZSRR, Akademgorodok, inteligencja*

1. Introduction

As a part of regional and national elites, scientists have played an active role in the construction of historical and cultural narratives in the modernity.[1] However, memory studies have rarely focused on science and scientists as producers of cultural memory.[2] This even if, residents of Soviet science

[1] This article is based on oral interviews performed for Kalashnikova 2020.
[2] Abir-Am 1999; Piskunov 2024.

cities were avid memory actors, locally, nationally and internationally. In the historiography, the post-war rise of Soviet science and technology is typically contextualized within the broader context of the Cold War and the emergence of "big science".[3] The visibility of these developments in the media, the abundance of published memoirs by scientists, and the presence of sizeable communities of post-Soviet academic emigrants in Europe and the United States have ensured that scholars frequently analyzed Soviet science through the prism of large projects and science cities. Novosibirsk Akademgorodok and the communities associated with the nuclear and space programs have attracted the most of scholars' attention.[4] This article brings the "big science" and memory studies together, offering a perspective of Soviet science cities from below.

The egodocuments that provided the basis for these studies also enabled researchers to gain insight into the mechanisms of memory and the circulation of historical narratives within scientific communities – institutional, professional or urban. In one of her papers, Galina Orlova, organizer of the Obninsk Digital Project, based on more than one hundred biographical interviews with local scientists and engineers, addresses the ongoing competition between research institutions for dominance in the symbolic landscape of this nuclear city.[5] The leadership in this institutional competition lies in the number of available resources to provide particular historical vision, so it is not surprising that the largest in the city Institute of Physics and Power Engineering has hegemony in this field over other research and educational local organizations. Institutional vision cuts the common history of Obninsk science into pieces or shares of each separate organization and, more importantly, erases the memory of Soviet times inter-institutional and inter-disciplinary partnership. Similarly, Mikhail Piskunov and his colleagues have undertaken a project, researching the historical narratives of the museums in Novosibirsk Akademgorodok. The museums of the Novosibirsk University, various academic research institutes and independent private organizations offer different visions of the history of Akademgorodok and especially of the relations between its founder Mikhail Lavrentyev and the organization to which the museum

[3] Tatarchenko 2016, on Soviet and Russian "big science" see Josephson 2023.
[4] Josephson 1997.
[5] Orlova 2017.

belongs. Piskunov points out that the more powerful the organization is, the more it portrays Lavrentyev as a scientist and political leader.[6]

In contrast to this institution-based perspective on the memory of Soviet science, Slava Gerovich accentuates the role of the professional community. Through a series of biographical interviews with Soviet and post-Soviet space engineers, he argues that despite the official Soviet space narrative, these individuals maintain their own professional interpretation of both the current state of the Russian space program and the heroic Soviet era.[7] Moreover, as state ideologues gradually retreated from space issues, the perspective of space engineers' professional networks also influenced official discourse. A similar parallel system of official and private cultural memory was found by Gerovich among late Soviet mathematicians who faced political pressure from the authorities.[8]

Ksenia Tatarchenko, in her dissertation on Akademgorodok and its computer scientists, notes that there was a boom of commemorations there at the end of the 2000s.[9] She connects this phenomenon with the activity of the Institute of Informatics Systems staff, who in the mid-1990s provided mass access to the Internet in Akademgorodok and since then have been collecting data on the history of their own institution as well as the entire science city. In Tatarchenko's vision, this memorial activity was not entirely professional or institutional, but followed the internal academic logic of human networks around the academicians Marchuk and Ershov. From this perspective, the collection of memorial data was a scientific task for the programmers, similar to that of historians.

The approach of the foremost researcher of memory of Soviet science, Maria Rogacheva's approach is critical of institutions, professional groups, and the state as actors of historical representation and sources of historical memory. Based on oral history, her research on the inhabitants of Chernogolovka, a city with a large scientific institute of physical chemistry, is an attempt to go beyond ideological facades and organized historical narratives to reveal the everyday life and everyday decisions of the late-Soviet scientific and technical intelligentsia.[10] She focuses on the private lives and personal interactions of her informants to trace their broader political

[6] Piskunov et al. 2022.
[7] Gerovich 2008a.
[8] Gerovich 2024.
[9] Tatarchenko 2016.
[10] Rogacheva 2017.

vision. Rogacheva reconstructs post-Khrushchev scientists as semi-conscious allies of the communist regime, who saw economic difficulties but did not make political demands in the first place. They supported perestroika and were even actively involved in the political upheavals of the period, but subsequent events and the continuing edge of science's survival in Russia had made them cautious and even cynical. Rogacheva, however, treats her informants in a more traditional historian's manner, focusing on their credibility as sources of information rather than on the temporality of their worldviews.

This article, based on 17 biographical interviews with residents of Novosibirsk Akademgorodok, Dubna and Chernogolovka, continues Rogacheva's project but with a different theoretical approach. While my research focuses on urban and professional life in Soviet science cities, I am also aware that individual memory is a dynamic social construct, rather than an objective reflection of historical events. It is important to recognize that even a biographical account of the past is based on the current point of reference and circumstances. In this sense, it provides insights into both the past and the present. And what an informant does not say, or deliberately does not want to say, is no less important than direct testimony. Memories I collected during interviews offer insights into how informants interpret time across eras, often blending nostalgia with critical reflection as they navigate shifts from Soviet to post-Soviet contexts. My interlocutors also address issues of time as well as space and isolation – sometimes viewed positively as fostering intellectual focus and community solidarity – while participating in an elitist discourse that underscores their identity as part of a privileged scientific intelligentsia. They share a bright vision of Thaw period as a starting point for their cities and the 1990s as a time of a catastrophic defunding of science and losing of the development perspective. Meanwhile, it is intriguing that my informants, in describing their professional and urban lives, skipped the period of perestroika, which Rogacheva identifies as an important period of relatively high political activity among scientists.

2. Sources and methods

The research is based on 17 in-depth biographical interviews conducted in Novosibirsk Akademgorodok, Dubna, and Chernogolovka with individuals who have been employed and residing in these cities since the

late 1950s and later. Prior to the interviews, the informants were requested to find things that were significant to their scientific work and their lives in the cities. To analyze the interview data, I conducted a thematic analysis described by Utekhin and Voronina.[11] That is, I divided interview texts into large thematic blocks, within which independent semantic segments equal in size to one or more sentences were distinguished, which are in hierarchical relations with each other.[12] Blocks, in turn, are included in narratives that succeed each other in the story. This approach allows us to see the explicit and hidden meanings encoded in the very structure of the story,[13] and to use it to draw conclusions about the narrator's system of representations, about his desire to create a certain "image of himself" and the described event in the listener, about what sources influenced the formulation and evaluation of events.[14]

In addition to the collection of in-depth biographical interviews, I also used a place attachment approach to analyze the data.[15] This approach focuses on the emotional and cognitive ties that individuals have with their physical surroundings, exploring how memories and experiences are tied to specific places.

Two primary variants of narratives emerge regarding life in Soviet science cities. In the first instance, informants portray the entirety of the Soviet era in an idyllic light. The second variant represents a narrative of gradual decline and disintegration. The first conceptualization follows a linear temporality, seeing the "golden age" from the late 1950s to the decline which starts in the early 1990s. The second fluctuates: it emphasizes the flourishing in the 1960s, then a gradual decline in the 1970s and 1980s, and the final collapse in the 1990s.

These observed differences can be attributed to the age of the informants. Here two generations can be distinguished: those who were born from the late 1920s to early 1940s and those who were born from the late 1940s to early 1960s. For the oldest informants the "golden age" of science and the city in reference is not considered to have ended with the 1960s, but rather continued up to the 1990s. They were among the first to be recruited to the science cities, and by the early 1970s had already

[11] Utekhin, Voronina 2006.
[12] *Ibid.*, p. 166.
[13] *Ibid.*, p. 169.
[14] *Ibid.*, p. 164.
[15] Manzo, Devine-Wright 2014.

achieved career success. Some even had the opportunity to work abroad. For instance, M-2 illustrates how his family's accommodation improved gradually over the course of his scientific career in the Soviet era:

> M-2: When we went to America, I was given a four-room apartment (in Dubna). I had two children by that time, and another parent was with us. So, everything was fine. We lived well.
> Interviewer: Was this in the 60s–70s?
> M-2: Yes.
> Interviewer: And after that?
> M-2: And after that it was like this.
> Interviewer: I mean, how?
> M-2: Everything was always stable and good in Dubna. The hardware provision, you could say, was perfect.

The informants of the "second generation" tend to think that they did not catch the peak of academy towns. They had to make do with what was left of it in the 1970s–1980s and watch the gradual worsening of the situation:

> F-2: And so, in principle, the shops got a bit smaller, of course, when oil collapsed in price. Then, yes, it got worse. And then they introduced coupons... Then it got bad for everyone, and then, well, everything collapsed. It was a completely different story.

Perhaps this is because my informants are attuned to the nostalgic mode of narration and are too enchanted by legends about the "golden age" of the late 1950s and 1960s, which they did not catch themselves.

The topic of scientific dynasties in science cities, people who grew up here and received their profession and specialty "by inheritance" should be raised separately. The parents of several informants (M-1; M-8; F-2; F-3; F-4) belonged to the first generation of scientists in Akademgorodok:

> F-2: One of my classmates went to South Africa, he teaches at the university there. A few, two or three, probably work at JINR. Well, someone is working in Moscow. [...]
> Interviewer: So, your classmates were also children of local scientists?

> F-2: Yes, yes. Some had fathers who were doctors, some had candidates.

Choosing science as their life's work seemed logical to them:

> M-8: After high school, I went to our university. I went to NSU to the physics department. All three brothers went there. The middle brother went to FMSH.
> Interviewer: Why the physics department?
> M-8: Well, somehow, we think every time we get together, we wonder why we became physicists. [...] But, apparently, our father somehow got us there. Both mom and dad – they were both physicists, engineers-physicists. And somehow my father taught us from childhood that we should look for some breakthrough direction, where there would definitely be progress.

Their memories of the 1960s are mixed with nostalgia for their childhood. According to them, being a child in Akademgorodok at that time meant getting a quality school education, growing up in a safe and comfortable place among outstanding people.

Some of the individuals I interviewed have played an active role in the process of memorialization, dedicating themselves to the preservation of the history of their city, the life stories of its residents, and the advancement of their scientific field. It is important to note that among my interviewees there are active institute "memory activists" (M-3 from Chernogolovka, M-12 from Dubna). Some of my interviewees participate in publishing books dedicated to colleagues and teachers, give and distribute books of their own authorship, write speeches for speeches at the institute in honor of memorable dates and anniversaries, organize and hold memorial events themselves, and advocate the installation of memorial plaques in honor of their teachers.

M-12 perceived the interview as a request to give a lecture on the history of JINR and even prepared an outline in advance. When someone called him during the interview, he answered that he was "holding a small seminar now." Mikhail Drozdov (M-3) is the Chairman of the Chernogolovka's History and Local History Club. We met at the local library where this club meets once a month. On a site of the local library even appeared news about our conversation that indicates the status of my informant as

the authority in the field of history of Chernogolovka.[16] The photo at the stand from this publication is staged – the librarian specifically asked us to pose. Thus, this photo can be considered a vivid example of preconception – the way informants transform the present in the expectation of further translation of the created images into the future.

It is important to state that although this paper focuses on the period from the establishment of science cities to the dissolution of the USSR (mid-1950s to early 1990s), its temporal boundaries extend into the present day. This is because of the enduring influence of Soviet-era experiences and memories, which persist into the subsequent periods of the 1990s and 2000s. The evolution of my informants' individual and collective memory preservation practices continues to emerge, even nowadays.

The text is structured according to themes common to all the interviews, which reveal the "scientific intelligentsia" identity of my informants from different perspectives. I begin with the sense of geographical isolation shared by my informants, continue with their perception of time and history (both local and Soviet in general), and end with their attachment to the spaces of Akademgorodok, Dubna, and Chernogolovka and their mental spatial delimitations.

3. Historical narratives about Akademgorodok, Dubna, Chernogolovka

Novosibirsk Akademgorodok, Dubna and Chernogolovka are among dozens of new-type scientific and related to high technology Soviet settlements that emerged in the 1950s–1960s. My choice of these cities had been determined by three factors, which assure comparability. First, all three cities started functioning in current form at about the same time – in the late 1950s. Secondly, the first research institutes in these cities were primarily focused on technical and natural science disciplines, including physics, chemistry, mathematics, and related fields. Thirdly, these institutes were established by prominent research leaders from Moscow, Leningrad, and Kiev, who merged the organizational and professional cultures of the top capital universities with experience from working on significant state-funded research projects, such as military research during World War II and nuclear and missile projects.

[16] N.N. 2020.

As Paul Josephson notes in his book about Novosibirsk Akademgorodok, post-war successes in the study of atomic energy and space exploration contributed to strengthening of the Soviet cult of science.[17] Thus, the Soviet government encouraged its expansion, considering scientific achievements as a means of overcoming economic, political, and social problems. In this context, academic cities were called upon to create conditions for the most effective development of science. Although ideology and politics later caused tensions in Novosibirsk Akademgorodok, they were crucial for its success at the planning stages.[18] This project was also strategically important – the experience of the Second World War showed "the importance of developing Siberian wealth far from the European borders of Russia."[19]

Chernogolovka, in turn, was originally conceived as a testing ground for explosives.[20] The distance from Moscow to Chernogolovka by car is 60–70 kilometres on South-East. On the one hand, the creation of such a site far from Moscow was a practical necessity, since the Institute of Chemical Physics did not have the opportunity to conduct such experiments in Moscow. On the other hand, Nikolay Semenov, the director of this institute, from the very beginning intended to develop Chernogolovka as a full-fledged scientific center, where the best conditions for the scientists' life and work would be created.[21]

Having a longer history, Dubna is an exception among Soviet science cities. In 1949, a synchrocyclotron and a secret settlement for physicists were constructed in the vicinity of the Ivankovskaya hydroelectric power station.[22] In the decade that followed, these buildings formed the basis of the "institute" part of modern Dubna. Dubna officially became a city in 1956, when the Joint Institute for Nuclear Research (JINR) was established. Despite the long history of the region, including numerous villages and the hydro plant in Ivankovo, many local history publications about Dubna focus on the city's history from the second half of the 1950s onwards.

My informants all adhere to the established narrative regarding the city's creation. The principles set forth during the construction of the cities

[17] Josephson 1997.
[18] *Ibid.*, p. xvii.
[19] *Ibid.*
[20] Rogacheva 2016, p. 1179.
[21] *Ibid.*
[22] Dachenkov 2015, p. 111.

of science, namely their remoteness and isolation, were reflected in the perception of urban space by local residents. It is worth noting that many informants refer to the pre-history of their cities as "swamp," "bear corner," or "remote village," emphasizing their inaccessibility and isolation from the "civilized" world. The metaphor of the swamp is used to highlight the opposition of wildlife and high technologies, as well as the triumph of Soviet architectural projects that transformed an uninhabitable place into a modern and comfortable scientific center. Similarly, Kate Brown notes that nuclear towns in the United States were often depicted as "villages," reflecting the American idealization of the countryside as a haven for virtuous living, reminiscent of the bucolic frontier. In contrast, in the USSR, nuclear towns were primarily portrayed as advanced urban centers. Soviet ideology viewed urban life as the epitome of progress and sophistication, contrasting with the perception of the countryside as emblematic of backwardness.[23]

Emphasizing the situation of being cut off from the outside world, 6 of the 17 informants describe the inconveniences that the person who decided to come to their city of science experienced and/or continues to experience. It was not easy to get to Novosibirsk Akademgorodok at the very beginning of its existence. According to M-8, this could only be done by taxi or by hitchhiking, so you had to agree to whatever prices were charged by the taxi drivers. While other sources mention public buses and trains, including the early history of Akademgorodok, we can assume that as a power of the narrative of being remoted. An interesting story was shared with me by M-7, who was a member of the local government body in Chernogolovka, the "village council" at the end of the 1960s. According to him, then the monorail project was seriously discussed, which was supposed to connect Chernogolovka and Moscow. The way from Moscow Shchelkovskaya metro station in this case would take only 40 minutes in comparison to a 1,5-hour ride on a car. But the city authorities decided that the monorail would have a bad effect on the inner community of Chernogolovka, "dilute" it with people of working professions who would stay here for work in Moscow:

> M-7: But our superiors wisely decided that a lot of people come here... That's when we had a rule in the institute, for every scientific worker there are five service personnel... Here.

[23] Brown 2013, p. 43.

> Well, in short, they come here, they don't care about our science. They come here to get a flat... If we build this monorail to Moscow, they will get a flat – and it's 'gone'. And they went to Moscow to earn money. We won't build the monorail. That's how they refused to build the monorail (laughs).

We see how in the informants' imagination their cities appear separated settlements, which can be threatened by a large, heterogeneous, "spoiled" city:

> F-2: Dubna was different, of course. When I came to enrol in the institute, here I was, the first September, the first month... It was just a bit wild for me. I mean, the people were like that, well... Dubna is an intelligent city. He speaks correctly, writes correctly, expresses himself correctly.
> F-1: Now I can't stand Moscow and I don't like to go there, because it seems to me that there are a lot of people, and there's nothing to breathe, and some kind of colgota, and... I don't like it.

The Russian language has a similar pronunciation for the words "town" and "city," which provides an opportunity to utilize the word game "gorod" (city) and "gorodok" (town) to differentiate between the contexts of Novosibirsk and Akademgorodok.

> M-1: Well, Novosibirsk is such an industrial city, there are a lot of factories there, the houses themselves – they were, of course... Everything was here, in Akademgorodok everything was newer, better maintained... So you come to Akademgorodok from somewhere on a business trip or even from the city and, say, drive through the city, and then you enter Gorodok and see that everything is completely different here. Indeed, it seems that everything is so clean and well-maintained.

The description of the relationships of cities of science with the nearest megalopolises is an important part of my informants' stories. They compare their cities with Moscow, in the case of Chernogolovka and Dubna, and Novosibirsk, in the case of Novosibirsk Akademgorodok. Despite its official location in the Soviet district of Novosibirsk, my informants perceive Novosibirsk Akademgorodok as a distinct city:

> M-8: Very different (Akademgorodok and the rest of Novosibirsk). Akademgorodok, well especially back then, Gorodok was this kind of so-so enclosed, enclosed place with a very comfortable environment.

The interviews revealed significant contrasts in the assessment of the architectural, environmental, landscaping, safety, cultural, and lifestyle aspects of the population. The informants describe Akademgorodok, Dubna, and Chernogolovka as artificially created spaces in which a high standard of living has been maintained through the implementation of an artificial infrastructure. Therefore, an individual accustomed to the "greenhouse" conditions of the city of science may find other locations uncomfortably challenging. My informants highlighted that their cities were a frequent filming location for movies. They cited this as evidence of the exemplary status of the 1960s cities of science, which stood out from the rest of the places so much that one might assume they were not in the USSR.

The informants visited Moscow and Novosibirsk to attend cultural events, including theatre, museums, and art galleries. Given their scale and focus on natural science and technology, science cities lacked the capacity to provide the traditional cultural opportunities that were available elsewhere. Moreover, the proximity to a major urban center presented a multitude of consumer opportunities for external parties and local residents alike. The extensive range of goods and services available in science cities attracted individuals from outside the scientific community during the 1950s and 1970s. According to interviews, this influx of external visitors led to a discontent among the locals. Conversely, in the late 1980s and especially in the 1990s, when the supply level there declined significantly, the proximity of Novosibirsk and Moscow and their large markets proved a saving grace for residents of all three cities analyzed here. Therefore, the isolation of these science cities was not geographic but rather a matter of social discourse that could shift with circumstances.

5. Nostalgic discourse on Soviet science: periodization and conceptualization of Soviet history

Nostalgia towards idyllic image of Soviet science appears as dominant theme in my interviews. Across different age groups and statuses, similar timelines and narratives emerge, reflecting shared experiences and cultural continuity as well as external sources such as local journalism and institutional

commemoration. The interviews I conducted did not reveal any differences in the narratives with regard to gender. In order to delve deeper into possible differences in the memory of female and male scientists, a more representative sample should be studied. The second paragraph.

The informants viewed the 1960s as a period of remarkable growth and prosperity, while they regarded 1990s as a challenging time marked by significant challenges and setbacks. Many informants situate their personal and professional identities within this framework, frequently referencing the achievements of key figures in their fields, including nuclear and chemical physics, the space program, geology, geochemistry, and so on. The respect for these figures is often visible in informants' workspaces, which I visited for interviews, where photographs of institutional founders and scientific leaders are displayed prominently alongside family portraits. In the office of one of the informants from the Institute of Nuclear Physics, three photographic portraits of the Institute's directors in chronological order are placed above the desk. In the office of M-4 from Chernogolovka, a photograph of Yuri Osipyan, the founder of the Institute of Solid-State Physics, is juxtaposed with photographs of relatives and colleagues.

The Cold War, with its focus on scientific and technological competition with the United States, is another crucial aspect of informants' narratives. They evaluate different periods based on whether Soviet science was perceived as exceeding or lagging behind its American counterpart. This perspective also influences their assessment of contemporary Russian science.

> M-1: In the 1960s, we were ahead of the Americans, or at least on the same level with them.
> M-4: Counterplay with the Americans is an objective necessity, because we have too much territory, too many resources. Here. We are too loud in the international arena. That's why the Americans don't like it. And whatever system we have, capitalism, communism, whatever, we will always be at odds with the Americans.

The conclusion of the Cold War resulted in substantial disruptions, as numerous research initiatives that had been aligned with military or geopolitical objectives were terminated. Informants often cite a loss of state support and the subsequent marginalization of the scientific community as key factors in this shift. They describe 1990s in stark terms, with

memories of institutional disintegration and financial instability dominating recollections. They remember that research institutes, once thriving hubs of innovation, were forced to shut down projects and pivot towards selling equipment or reagents simply to stay afloat. Still, the temporality of flourishing and decline differ between generations, as described above.

The role of scientific dynasties, where professions were passed from one generation to the next, in shaping these narratives is also significant. Informants who grew up in Akademgorodok, Dubna, or Chernogolovka often followed their parents into scientific careers. For them, the 1960s represent not only professional achievements but also personal nostalgia for a safe, well-educated, and close-knit community.

Local variations in the periodization of Soviet history further complicate these narratives. For example, informants often attribute the start of social life decline in Akademgorodok during the 1970s to a local political event – the case of "Under the Integral" social club,[24] where dissident singer Alexander Galich officially performed in March 1968 and followed political reaction.[25] Notably, there is a narrative gap concerning the 1980s. While this period was historically significant, informants frequently downplay it, associating its events – particularly perestroika and its socio-political upheaval – with the collapse of the 1990s.

Nostalgia for the 1960s and the broader Soviet period often centers on the loss of a unique social environment. This "social paradise," as imagined by informants, reflects a time when research institutes and academy towns were vibrant, interconnected communities of intellectual and cultural excellence. The image of Akademgorodok or Dubna as a "young city" is particularly striking, with informants emphasizing the low average age of its residents during the 1960s. Over time, this demographic shifted as the first generation of scientists aged, brought family members to the city, and the influx of new talent diminished. Ultimately, informants' memories of Akademgorodok, Dubna and Chernogolovka capture the broader life cycle of "big science" as a generational project. These narratives intertwine professional pride, personal nostalgia, and reflections

[24] In March 1968, the first festival of author's song was held in Akademgorodok by the local social club 'Under the Integral'. The festival caused dissatisfaction of ideological authorities, therefore they closed the club and strengthened the ideological censorship in Akademgorodok. See Kuznetsov 2007 for more details.

[25] Kuznetsov 2007.

on social transformation, illustrating the enduring legacy of these unique scientific communities.

6. Urban scape and lifestyle

The lifestyle of the scientists in my informants' stories is directly connected with the special natural conditions of their cities. The infrastructure, which was state-of-the-art for the 1960s, was carefully integrated into the landscape, providing residents with access to green spaces and clean air. The low-rise buildings constructed during the Soviet era appear to be partially obscured by the surrounding greenery, with not all of them visible simultaneously. These images can be accessed via the websites of local institutes and in local history publications. It is worth pointing out that the very popular Soviet film about nuclear particle physicists, "Nine Days in One Year" (1962), frequently referenced by my informants, also features a similar overhead view of forests near the unnamed science city at the beginning of the film. The camera then proceeds to move over dense forests for a duration of one minute and 20 seconds, gradually approaching the building where the synchrophasotron is located. This type of visual representation emphasises the city of science's distance from Moscow and its integration into the natural environment. Against this visual backdrop, the preface states, "In any case, events begin far from our capital, in a small town that consists of just two or three streets around a large physics institute."[26] As mentioned above, the emphasis on remoteness in the informants' narratives may be a discursive device. While it was possible to relatively easily reach both Novosibirsk and Moscow, the locals tend to highlight their isolation.

Ponds and forests are an integral part of the cityscape of the cities of science I have selected. This overarching vision of integrating natural landscapes into science cities is not a mere coincidence; it reflects the intentional design set forth by the architects, scientific and city leaders.[27] The residents of Novosibirsk's Akademgorodok, embracing this vision, have even adopted squirrels as an unofficial symbol as their commitment to maintaining a good ecological environment in the city.

[26] Romm 1962.
[27] Bugaev, Piskunov, Rakov 2021.

My informants often talked about how the employees of the institutes spent their time after work mainly in the fresh air – walking, picking berries and mushrooms, relaxing by the water. One of the photographs from the M-5's personal archive shows him in the company of his colleagues. They are on the beach of the local reservoir called Ob Sea, which is the main resting place for residents of Akademgorodok. The characters in the photo are dressed quite formally, not very suitable for going to the beach. They probably celebrate some event by heading to the sea directly from the institutes. The organization of space in Akademgorodok probably contributed to this change of environment. They hold mugs in their hands, and there are bottles, probably of alcohol, and cans of snacks nearby. The photo shows us the "academic" idyll of the 60s, outdoor recreation – even without changing a work suit. The figure of the scientist is deliberately built into the natural landscape and is arranged with visual and verbal "alcoholic" motives. In the M-5`s family album, this image is reinforced by the inscriptions "We were drinking, we were eating, we were having fun" and a humorous clipping from an old newspaper with the words: "I don't need socialism without beer. Neither developed nor decorated. I think our leaders secretly share this opinion." This specific Soviet technical intelligentsia type of humor, combining the motives of "outdoor recreation" and "relaxation with alcohol," is very characteristic of the environment I am describing.

In addition, my informants spoke of the local population's enthusiasm for sport. It should be added that this was apparently related not only to the diversity of their skills and talents, but also to the particular organization of space and time. Scientists spent much less time travelling to and from work than in big cities, and the time saved, combined with the proximity of natural landscapes, opened up more opportunities for leisure. F-1 even calls Chernogolovka a resort. The natural setting and good infrastructure made it possible to practice various sports activities not only during the holidays. Interviewees talked about various sports competitions between institutes that were often held in the cities of science. It is important to note that most of these activities involve interaction with other people. It can be said that common leisure activities united scientists. Maria Rogacheva's informants recall that they made a lot of efforts to improve the territory of Chernogolovka.[28] Without waiting for financial support from

[28] Rogacheva 2017, p. 95.

the state, the employees of the institutes themselves created a recreational area – basketball, volleyball and tennis courts, as well as a football field.[29] It is debatable whether the scientists of Chernogolovka really managed without the support of their superiors, but in our case the feeling they recall is much more important. That is, the collective desire to improve the place where one lives.[30]

In addition, the warm relations between the science cities residents are partly explained by the spatial proximity – everything was within walking distance. Maria Rogacheva cites the memoirs of scientist, Vladimir Enman, published in the Chernogolovskaya newspaper.[31] In the 1960s, he felt that everyone had many friends in Chernogolovka, and they all lived nearby. Therefore, it was a common thing to visit each other even without an invitation – everyone felt like a part of a big family.[32]

Natural conditions largely determined the way of scientists' life and influenced their perception and memory of urban space. In their view, a balance was maintained between "civilization" and nature in the cities of science. Although, according to my informants, with the advent of factories and the increase of the number of cars, this balance was partially disrupted, cities of science still enjoy the reputation of green oasis.

7. Symbolic delimitation of space: communities and social segregation in the cities of science

Each of the cities of science I have chosen has its own history of construction. As mentioned earlier, Chernogolovka, a former test site, gradually acquired institutes – many of them were created for solving newly appearing applied problems. Novosibirsk Akademgorodok, as the most ambitious project, had a general development plan from the very beginning, which, however, could be amended (one of the most famous events in this line was Khrushchev's visit in 1959[33] and his anger against the planned height

[29] *Ibid.*, p. 93.
[30] *Ibid.*, p. 96.
[31] Enman 2006.
[32] Rogacheva 2017, p. 96.
[33] The Novosibirsk Museum published a preserved video report from the arrival of the First Secretary of the CPSU Central Committee to the Akademgorodok in the summer of 1959 It demonstrates how Academician Khristianovich familiarises Khrushchev with the plan for further development of the city. The announcer

of the buildings.[34] Dubna grew up on the site of a secret scientific settlement and eventually absorbed the surrounding villages.

Despite the many features in the history of these cities of science development, the principles by which the territory is symbolically delimited in the imagination of local residents, are similar. Conventionally, every city has an institutional part consisting of the research institutes themselves. This part of the city, together with the house of scientists (social club, available mostly to the academic employees), houses of culture (center provided social and cultural entertainments, available for any local), schools, is given the most attention in the stories, while the rest of the districts is practically not described in the interviews. My informants themselves further delimit the space according to their own logic or add this logic to the administrative boundaries of their cities, and this logic I now want to discuss.

For example, the informants from Dubna conventionally divide the city into right and left banks. On the right bank, Chernaya Rechka ("Black River") (the institute part) is adjacent to the village of Bolshaya Volga, and on the opposite side is the former working village of Ivankovo, which today has the status of a Special Economic Zone. Since 1960, all these territories have been considered one city.[35]

In the informant`s view, the boundaries between the districts coincide with the boundaries of the inner-city communities. If the scientific intelligentsia lives mainly on the Chernaya Rechka, then Ivankovo and Bolshaya Volga turn out to be inhabited by workers, employees of numerous factories.

The informants from JINR also call the institute part of the city "our Dubna", which underlines their desire to appropriate this part of the city to the scientific community. M-2 speaks with annoyance about the loss of JINR's former status and power in influencing the cities' policies, which forms the image of the city. In his opinion, the Special Economic Zone on the left bank of the Volga receives a lot of support from the authorities.

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comments: 'But the project of the residential part of the academic town caused serious objections from Nikita Sergeyevich. He advised not to be carried away by high-rise buildings. After all, there is enough space here, so why imitate American skyscrapers? They don't climb up there for a good life!... It's not the height of the buildings, but the beauty. See: Novosibirsk Museum 2016.

[34] Tatarchenko 2016.

[35] Dachenkov 2015, p. 44.

The informants from Chernogolovka talk about their city in almost the same way. Since the late 1960s, the city's space began to expand – the institute's part incorporated the territory of the Experimental Instrument-Making Plant as well as housing for the new company's employees. This has forever changed the special social space that had been inhabited mainly by physicists.

By "the area across the river" M-3 means the recently created Zarechye microdistrict, which is now being actively developed. My interlocutor, like the rest of the informants from Chernogolovka, never mentioned its existence again. Most likely, they feel much more keenly about the immediate vicinity of the industrial zone than about the new districts that are already located behind it. In the imagination of institutes' employees, other areas of the city merge with each other into a single space where people who are not connected with science live. The latter are taking over the scientists which, according to the informants, is causes the decline of the general culture of the city. "Aliens" are characterized by lack of education, lack of manners, low interests:

> F-2: Dubna is clearly divided here. The Institute part, the Black River, well, it's like almost the same thing. But Bolshaya Volga is a different neighbourhood. That is, it's simpler, the people there are less educated, less intelligent. And, accordingly...

Residents of Novosibirsk Akademgorodok, in addition to the so-called Upper Zone, mention the close areas such as "Shch", Gateway and Eltsovka. In the description of the city outside the Upper Zone, they are limited by the history of the name of the "microdistrict shch": once there were panel houses in which the builders lived, therefore this area was marked on the diagrams with the letter "Щ". Like residents of other cities of science, residents of Novosibirsk talk about the heterogeneity of the contemporary population.

The class division of these scientific cities is evident in my informants' accounts; they separate the places where scientists and workers live. A few years ago, M-8 moved from the Upper Zone of Akademgorodok to Eltsovka for family reasons. Since then, as he stresses, he began to often use the car, although previously he had no such need. Thus, the (pedestrian) mode of movement for M-8 is one of the features of the Akademgorodok. The possibility to have such privileged way of life is also associated with this place in different parts of Novosibirsk.

8. Conclusion

Although the specific urban narratives of scientists from different cities and geographical locations vary, they share common features in terms of the perception of time, an ambiguous sense of remoteness, the value of the natural environment and privileged pedestrian access to it, and, unexpectedly, working-class communities as a potential threat. They share a nostalgia for the "golden age" of the 1960s, the difficulties of the 1990s, and seek to construct personal and collective biographies as a scientific chronicle. They regard their cities as deeply their own, marked by landscape, lifestyle, and topography. The word "utopia" often comes to mind when discussing the past of Soviet science cities with their inhabitants. But like any utopia, this one has its dark side. When drawing mental maps, locals clearly associate "our" neighborhoods with scientists and their families, and "other" neighborhoods with the working class. It reflects their past, their unstable present position, ascribes meanings to the key figures of local history, the way they connect them with the big history. It is the image of great Soviet big science and scientists and engineers as pioneers of a better society. Although the actual relationship between the Soviet state and scientists was very complex, from the perspective of the 2010s (when I conducted my interviews) it seemed relatively harmonious. The late 1980s, when many people from academia and science cities became public intellectuals and local or federal politicians, became a period of silence in my informants' narratives. The grand narrative of my informants does not seem to be the result of a conscious policy of the Soviet and Russian states, but is rooted in numerous local and institutional (municipal, academic, etc.) commemorative initiatives.

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Appendix: List of Informants

M stands for "assigned male", F stands for "assigned female". Age in brackets refers to age at the time of the interview.

M-1: born in 1955 (64 years); was born in Saratov; moved with his parents to Novosibirsk Akademgorodok in 1963; Graduated from the Faculty of Physics of Novosibirsk State University; works at the Institute of Nuclear Physics. G.I. of the Siberian Branch of the Russian Academy of Sciences; Brother of M-8.

M-2: born in 1934 (85 years); was born in a village near Serpukhov; lives in Dubna since 1958; graduated from the Faculty of Physics of Moscow State University; works at the Joint Institute for Nuclear Research.

M-3: born in 1948 (72 years); was born in the Novgorod region; partly began to live in Chernogolovka since 1969; graduated from the Faculty of Molecular and Chemical Physics of the Moscow Institute of Physics and Technology; works at the Institute of Problems of Chemical Physics of the Russian Academy of Sciences.

M-4: born in 1945 (75 years); was born in the Vologda region; began to partially live in Chernogolovka since 1965; Graduated from the Radio Engineering Faculty of the Moscow Institute of Physics and Technology; works at the Institute of Solid State Physics of the Russian Academy of Sciences.

M-5: born in 1929 (89 years); was born in Leningrad; graduated from the Faculty of Mathematics and Mechanics of the Leningrad University; moved to Novosibirsk in 1957; works at the Institute of Mathematics. S.L. Sobolev of the Siberian Branch of the Russian Academy of Sciences.

M-6: born in 1939 (80 years); graduated from Moscow Institute of Physics and Technology; lives in Novosibirsk since 1961; works at the Institute of Hydrodynamics. M.A. Lavrentiev of the Siberian Branch of the Russian Academy of Sciences.

M-7: born in 1942 (77 years); was born in Gorky (Nizhny Novgorod); graduated from the radio engineering faculty of Gorky University; lives in Chernogolovka since 1976; works at the Institute of Theoretical Physics. of L.D. Landau.

M-8: born in 1938 (81 years); was born in Saratov; moved with his parents to Novosibirsk Akademgorodok in 1963; Graduated from the Faculty of Physics of Novosibirsk State University; works at the Institute of Nuclear Physics. G.I. Budker of the Siberian Branch of the Russian Academy of Sciences; Brother M-1.

M-9: born in 1942 (78 years); spent his childhood in Moscow; moved to Novosibirsk in 1960; graduated from NSU in 1965; works at the Institute of Nuclear Physics. G.I. Budker of the Siberian Branch of the Russian Academy of Sciences.

M-10: born in 1937 (73 years); was born in the Kemerovo region; graduated from the Historical department of the Faculty of Humanities of Novosibirsk State University; lives in Novosibirsk since 1966; works at the Institute of History of the Siberian Branch of the Russian Academy of Sciences.

M-11: born in 1937 (83 years); was born in Nizhny Novgorod; graduated from the radio engineering faculty of Gorky University; lives in Dubna since 1958; works at the Joint Institute for Nuclear Research.

M-12: born in 1941 (78 years); was born in Rostov; graduated from the Faculty of Mechanics and Mathematics of the Rostov State University; moved to Chernogolovka in 1963; works at the Institute of Problems of Chemical Physics.

M-13: Oleg Leonidovich Kuznetsov; graduated from the Faculty of Physics of Moscow State University; born in 1938 (81 years); since 1984 he has been the rector of the State University "Dubna".

F-1: born in 1949 (71 years); was born in Saratov; graduated from Saratov State University; moved to Chernogolovka in 1980; works at the Institute of Problems of Chemical Physics of the Russian Academy of Sciences.

F-2: born in 1959 (61 years); was born in Dubna; graduated from the National University of Science and Technology (MISiS); since 1981 he has been working at the Joint Institute for Nuclear Research.

F-3: born in 1961 (58 years); was born in Novosibirsk; graduated from the Historical department of the Faculty of Humanities of NSU; since 1981 he has been working at the Institute of History of the Siberian Branch of the Russian Academy of Sciences.

F-4: born in 1962 (57 years); was born in Novosibirsk; graduated from the Faculty of Chemistry of Novosibirsk State University; since 1983 he has been working at the Institute of Organic Chemistry of the Siberian Branch of the Russian Academy of Sciences.

F-5: born in 1962 (57 years); was born in Blagoveshchensk; graduated from the Faculty of Molecular and Chemical Physics of the Moscow Institute of Physics and Technology; partly began to live moved to Chernogolovka in 1980; worked at the Institute of Problems of Chemical Physics of the Russian Academy of Sciences until the early 2000s.