From Russia with Code

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From Russia with Code: Programming Migrations in Post-Soviet Times.

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My interview with Stanislav, aged twenty-eight, included the following exchange:

**STANISLAV:** You’ve been on Rothschild Boulevard, right?

**MARINA:** Passing by every day. Buildings, trees, cafés. . . .

**STANISLAV:** Why?

**MARINA:** Really? You don’t know? It’s the Silicon Street. It’s the startup community.¹

I had never heard of Rothschild Boulevard being the most prominent high-tech hub until that moment, and my informants had never heard of the celebrated Russian technical expertise until they met me.² As pointed out in the introduction and a leitmotif throughout this volume, Russian computer scientists build successful academic careers outside their homeland, and the best-recognized software brands in the world retain Russian programmers as valuable talent. Yet, surprisingly, the allure around the figure of Russian IT genius does not resonate in Israel.

Back in the 1990s,³ Israel was still a country specializing in agriculture and gemstones; however, nowadays one may not be able to notice news about the Gaza War or Israeli medical breakthroughs over the sound of record-breaking investments flooding into the country’s high-tech sector.⁴ Israel stands out as a startup nation, and its citizens engaged in software development are the main asset of many global technological giants—such as Apple, Google, Intel, Microsoft, Amazon, Samsung, and others—which have opened R&D offices there.

High tech has become the driving force of the Israeli economy, and its development coincides with the massive immigration of highly
skilled Russian Jews, though the outcome of this wave still remains questionable. The issues that deserve discussion are how immigrants from the post-Soviet countries have fit into the Israeli economy—particularly into the now legendary Israeli high-tech sector—and why nobody in Israel hears the buzz around the virtuosity of Russian programmers. This chapter will address these questions by describing the experiences of two generations of Russians engaged in Israeli high tech for almost a quarter of a century.

HOW TO TRACE RUSSIANS TO ISRAELI HIGH TECH?

The collapse of the Soviet Union opened the gate for those looking for an opportunity to flee the scene of its undoing. Among those unwilling to wait for the dust to settle were many Russian Jews who immediately migrated to Israel. Israel’s Central Bureau of Statistics estimates that close to one million post-Soviet immigrants came to Israel through aliyah after the government of the Soviet Union lifted restrictions on movement and choice of residence (Yaffe and Tal 2001). The immigration wave of the 1990s was documented as the largest single wave of Russian Jews immigrating to Israel—after the United States imposed a quota on Soviet Jewish immigrants, making Israel the next most preferable destination (on how Russian Jews settled in the Boston area, see West, this volume).

For Russian Jews, emigrating to Israel is fundamentally different from emigrating to any other country: rather than posing obstacles, the State of Israel actively encourages immigration and not only grants instant citizenship status but also provides tangible assistance to newly arrived immigrants (details are provided later in this chapter). It is also noteworthy that for those who moved to Israel in the 1990s, leaving Russia was not a choice driven by the ambition to seek a career or—as it is true for Russians who relocate to Finland—a leisurely lifestyle (Shatokhina, this volume). Migration to Israel presented Russian Jews with an opportunity to escape anti-Semitism (see, e.g., Blank 1995; Korey 1995; Krupnik 1995; Gitelman 2001; Pinkus 1990) and create an affinity to the Jewish nation:

I had another kind of sentiment back then. I needed to be among those like me; I needed to feel belonging to this nation, to feel comfortable, to feel that I’m a part of something bigger and to stop hiding. (Stepan, aged fifty-seven)

However, Zionist ideals were a secondary factor in the decision-making process of most Soviet Jews who migrated to Israel in the 1990s. This differed
from the first wave of mass emigration during the 1970s, which was a result of Zionist conviction whereby Soviet Jews were “pulled” to Israel for ideological reasons. The second wave, however, was catalyzed by the collapse of the Soviet Union and is often referred to as “pragmatic” (Remennick 2009) or “panic” (Gitelman 2004) immigration. The unstable political situation, the uncertainty regarding economic well-being, and concerns about their children's future were primary factors that set in motion the massive influx of Russians in the 1990s, “pushing” them to Israel. As one of my informants noted:

The question [of] why we moved to Israel back then seems irrelevant. It was a mass movement, a wave. Everybody was moving: our neighbors were moving to Israel, our friends were moving to Israel, our relatives were moving to Israel, and we did as well. (Georgii, aged thirty-six)

Since these two waves differed in motivation, they produced varying circumstances for the integration of newly arrived Jews. While those who arrived in the 1970s were interested in giving up their former identities and soon integrated into Israeli society, immigrants who came in the 1990s kept positive attitudes toward their former homeland and faced many hurdles during the process of assimilation.

Considering the immigrants’ skills and the rapid expansion of the high-tech cluster, one would expect that Russians would be overrepresented in the Israeli software sector. However, immigrants from the FSU experienced a substantial occupational downgrading, gave up their professional ambitions, and were compelled to move to other sectors of the Israeli economy (see Weiss 2000). This controversy makes it even more important to delve into the circumstances of their economic and professional integration.

While it is widely acknowledged by the media that post-Soviet aliyah made an important contribution to the high-tech cluster and educational system of Israel (see, e.g., Gur and Keinon 2009; Maital 2013; Maltz 2015; Sales 2013), scholars often question this opinion held by the public. The role of the post-Soviet immigration wave in the making of the Israeli high-tech cluster is, indeed, mentioned in the literature (Ariav and Goodman 1994; Avnimelech, Kenney, and Teubal 2005; Drori, Ellis, and Shapira 2013; Remennick 2003; Senor and Singer 2009; Trajtenberg 2002), but without a detailed description of their contributions beyond being considered a sustaining force in the sector. There are also a number of studies that claim that the contribution of highly skilled immigrants to the development of the Israeli high-tech cluster is complementary and indirect (Arora, Gambardella, and Klepper 2005; Avnimelech and Teubal 2006; Breznitz 2005b). Most of
these studies take economic issues into account when discussing the influence of Russians on Israeli high tech. Yet, I believe that a focus on sociocultural aspects of this phenomenon may enrich our understanding of the role Russian techies have played in Israel and provide us with more insightful analysis.

During my fieldwork, many of my informants explained their professional difficulties through appealing to their “Rusnianness”:

For them [for native-born Israeli Jews] we are all Russians: Armenians, Belarusians, Georgians, Ukrainians, Baltic people—all who fled from the Soviet Union. It’s obvious that we do everything differently, and it’s never helped us in our careers. (Andrey, aged fifty-one)

However, this study does not use the word “Russians” as a conventional umbrella term for all FSU immigrants, rather as a concept through which we can explore the Soviet values they share. Using “Rusnianness” as a research lens helps us to unpack how the career paths of Russian immigrants and their role in the making of the Israeli high-tech industry were mediated by the mental baggage they brought with them from the USSR.

DIFFERENT GAME, DIFFERENT RULES

By virtue of their tenacity in clinging to their culture and customary way of life, Russian engineers and technologists have crafted alternative spaces for themselves within the Israeli economy. When Russians came to Israel in the 1990s, the software industry had started offering promising job opportunities, and technological entrepreneurship was perhaps not as prestigious in Israel back then as it is today, but it was cutting-edge. Also, Israel’s absorption policy was able to ease the difficulties confronting immigrants on the capitalist market, since state agencies were actively involved in training, job placement, and the immigrants’ overall occupational adjustment, especially for those who were educated (see the detailed discussion in Remenick 2003, 2013). However, Russian Jews were less likely to embark on business ventures and more likely to enter the primary labor market. Instead of adjusting to the emerging startup ecosystem, Russians continued to play by the old rules they had internalized in the Soviet economy. Further, I discuss economic and cultural barriers that prevent the first generation of Russians from being at the forefront of Israeli high tech.

The newly arrived Russian Jews formed the core of the Soviet intelligentsia, and for them, careers in technical fields were particularly attractive,
since they had been key to entering the mainstream of Soviet society. One might assume that having arrived in Israel with such training, they were limited only by the process of learning Hebrew and English (the latter being the lingua franca of software development). Yet, the Israeli economy was not able to fully utilize their skills. While some occupations (e.g., engineers, technicians, scientists) are often characterized as highly transferable to the host country of Israel (Mesch and Czamanski 1997; Raijman and Semyonov 1995), it was not easy for highly skilled Russian immigrants to get a position as an engineer or software developer.

Russians who arrived in Israel were exposed to a different environment in relation to the economic structure of production. To be sure, the USSR was neither a country of nimble startups nor did the large public sector enterprises that reigned supreme in Soviet industry reliably provide the expertise required by Israeli companies. The Russian technical elite came to Israel with specializations in relatively low-tech sectors that frequently did not match the needs of Israeli industries. Furthermore, in contrast to the conditions for highly skilled mobility to other countries, migration to Israel allows for entry without knowledge of the language, proof of qualifications, valid work contracts, or binding job offers. As a result, newly arrived Russians struggled with language and their lack of local networks, which are so important in the Israeli economy, and thus faced a very tight job market.

Usually, Russian immigrants who were previously involved in hardware maintenance or programming took retraining courses in order to enter the software niche, and once hired tried to remain in that position, thus limiting their professional mobility. The resistance to changing their workplace and exploring new opportunities was also predetermined by the fear of losing their jobs. Furthermore, they were trying to be loyal to one company; they did this as there was a widely held assumption among Soviet immigrants that hard work provides its own rewards and constitutes a claim in and of itself for being successful. However, while job hopping can be perceived as negative, in Israel, and especially in high tech, it usually means that a person is flexible, eager to obtain new knowledge, and good at networking. Since Russians had a very specific skill set and were reluctant to broaden their skills and connections, one may assume that they occupy a number of specific positions within the market, such as maintaining older computers running COBOL or Assembly languages. Those assumptions, however, were not confirmed by my fieldwork:
You can definitely hear from time to time these stories like someone hired his Russian gardener or pool man (laughing) as a technician to maintain old legacy applications. I personally feel those are exaggerated fairytales about being discovered, though I do believe there is a market for Cobol skills in Israel. And certainly, those who emigrated from the Soviet Union have expertise. But I can't really think of it as a specific niche for Russians.

(Ivan, aged thirty-five)

The niche of maintaining old application software and old mainframes had no stable opportunities, and subsequently, it became almost effortless to find a job in this sector after the industry started its transition to newer technologies.

For those who were inclined to carry on their scientific careers inside Israeli academia, the conditions were even more inhospitable. Israeli universities did not have the capacity to integrate all Soviet scientists into their departments.9 The Soviet Union’s traditional strength in the theoretical sciences could have made an important contribution to Israeli academia, yet many of these scientists had difficulty penetrating Israel’s scientific communities. Even the most famous scientists and scholars were struggling to find a job. One might think that this was due to the lack of language skills. However, Israeli academia was more concerned with the qualifications and competencies of newly arrived scientists, researchers, and teachers:

If there was a gap in technology, there was a gap in knowledge as well. Russia was thrown back to many years ago. The country used to be closed, there was no internet at that time to communicate, international connections or collaborations were almost nonexistent, and Israel had been successfully catching up with the rest of the world. . . . I was lucky I knew English and I had some publications in English as well, recommendations from the leading American universities. It saved me from unemployment. (Stepan, aged fifty-seven)

Cut off from both the international scientific community and from emergent high-tech consumer technologies, the majority were compelled to either retrain or take lower-ranking and lower-paying jobs, changing their socioeconomic status through a considerable downward occupational shift.

As opposed to the US, Great Britain, and Europe, which all have other sectors intensively using software (e.g., analytics, banking, finance, healthcare), the Israeli market has offered little choice for highly skilled Soviet immigrants, inducing them to move to the private sector and, in particular, to the soft-
ware industry. To achieve this integration, Israel offered Soviet immigrants retraining courses and set policies to foster technological entrepreneurship. Among all government programs for stimulating the development of the Israeli high-tech cluster, one was specifically designed for Russian immigrants.

The Technological Incubator program was presented as a solution to provide highly qualified Russian engineers and scientists with instant job opportunities and aimed at assisting them in integrating into a capitalist economy. However, those of my informants who were involved in this program during their career path admitted that success stories were rare. Despite government efforts, by 2010 two-thirds of high-tech Incubator companies failed (Grimland 2010). Beginning from this period, Russians came to be labeled as “unable to build business”—a perception shared by most of my informants.

The existing stereotype that Russians cannot run a technological business has evidence to support it. Indeed, a number of works pointed to the fact that the Russian immigration wave of the 1990s failed to produce technological entrepreneurs (Arora, Gambardella, and Klepper 2005; Breznitz 2005b, 2007b; Kapur and McHale 2005). In his study on the career paths of founders of Israeli software companies that went public on foreign stock exchanges, Breznitz came across only one Russian immigrant. He argues that it “points to the difficulties that immigrants from the former Soviet Union have in establishing successful start-ups in a capitalist economy” (Breznitz 2005b, 96).

However, I am not inclined to interpret this state of affairs exclusively as a result of their inability to operate in a capitalist economy due to a lack of entrepreneurial skills. In application to the current research, I would like to discuss this issue from the sociocultural point of view and try to unfold its complexity by taking a look at several dimensions that might have an impact on why Russians are unsuccessful in business.

Given the subtle or open discrimination of Jews in Russia, one might have assumed that immigrants were already prepared to exercise entrepreneurship in Israel as they had had to constantly game the Soviet system, inventing new ways of bypassing intolerance. The immigrants of the 1990s were used to flexibly navigating within the Soviet system in order to access resources that in most cases could only be obtained through blat. Therefore, the fact that Russians have not, thus far, appeared to be prominent technological entrepreneurs might not be a result of the lack of entrepreneurial skills—which could have been obtained during their lives under the Soviet
regime—but by a desire to finally stop hustling hard, as they had to do back in the USSR in order to survive the regime.

Another reason why Russians often chose not to pursue entrepreneurship, with all its risks and uncertainties, is their perceptions toward business. As a result of institutional restrictions on private property in the USSR, Soviet citizens did not know how to operate beyond the public sector or run a company. Moreover, any attempt at entrepreneurial activity was socially unacceptable, discouraged, or even prosecuted. In addition, the Soviet shortage economy had generated new entrepreneurial groups that adjusted to the economic situation at the time by selling goods illegally and at a higher price, obtaining shadow revenues. This led to the appearance of semilegal entrepreneurs,14 who were treated as “dishonest speculators,” publicly disrespected and “blamed for higher prices and the very intention of private gain” (Barsukova and Radaev 2012, 6). Therefore, entrepreneurial behavior and small enterprises were seen as illegitimate practices from the standpoint of the Soviet citizen. Such attitudes toward doing business might have influenced the choice of some Russians to seek more “regular” jobs with lifetime employment. Indeed, while Israel is often seen as a “nation of entrepreneurs” (Senor and Singer 2009), Russian immigrants do not always fit that description as they may lack flexibility and “entrepreneurial spirit”—cultural traits that are in high demand on the Israeli market. For the first generation of Russian immigrants, working in a small startup or starting their own company was considered risky:

I started working as [an applied] mathematician, I worked in the field for which I trained, although it was a small firm. . . . Back then I still had the Soviet mentality, I thought that the right thing to do was to work for a big corporation. . . . And when I was offered a job at Israel Aircraft Industry—an enormous firm—I thought: “That’s it!” However, I started there not as a mathematician, but as a programmer, though I didn’t have any experience in programming. (Liudmila, aged fifty-two)

Liudmila deliberately shifted to another profession for a chance to be hired by a big corporation and to have guarantees. She admitted that it took her several years to realize that she would want “to try to make something of her own”:

Can you imagine such situation: I’m working in a huge corporation in Israel, I finally have stability, I have a newborn on my hands, hence, I can’t be fired, I have benefits as a mother, I have high salary and a high position. . . .
And I left it all and opened a new firm on my own. It means my mentality had changed, and I wasn’t scared anymore. . . . Although, there are people who would prefer money on a regular basis, stability, peaceful workdays, and then they would go on pension.

This case is an example of how Russian Jews, once they came to Israel, were trying to find stability under the roof of large enterprises. Liudmila also stated that during her work for Israel Aircraft Industry she met many talented Russians engineers, who held very high positions in the company. Another informant also said that usually Russians could be found in big companies, where they have been working for a long time:

I think they [Russians] were successful in engineering positions: they come, they sit, they do their work effectively. . . . And they have positions in Intel, IBM, big companies usually. . . . I think most Russians are less entrepreneurial, and more “sitting at a desk, doing their job” engineer type of people. (Igor, aged twenty-nine)

The lack of the startup ethos among Russian Jews was also highlighted by Diana Kurkovsky West in her study of Russians in the Boston area in this volume. The career strategies that Boston-based Russians have adopted are similar to those described above: Russian Jews both in the US and Israel were longing for stable and hierarchical positions, falling in the division of labor, rather than going for risky jobs.

In addition, all the first-generation informants I met (and even some among the younger generation) admitted that they enjoy a technological challenge and the very process of development, rather than managerial work. It is reasonable to think that such attitudes toward work could also be a part of the Soviet legacy, as the main concern with excellence in the technological part of the job could be a result of the Soviet tradition of technical education. This may partially be explained by the fact that Russians were socialized in government-funded institutions favorable to the performance of technical expertise, rather than to their use by market forces. In this respect, the understanding of professional success for Russians and Israelis is different. While Israelis strive for creating a prosperous business of their own, Russians often prefer the opportunity to perform highly sophisticated technical work, choosing to stay behind the scenes.

The interviews also revealed that the first generation of Russians used to choose international corporations over Israeli firms not only because of the guarantees offered by the brand name and limited local market opportunities
but also because of the differences in work culture. One of my informants, who works in the American Israeli company Amdocs, gave an example:

Sometimes they [Israelis] like to create unnecessary fuss. “Who says what” really matters, the overlap between the personal and the professional—it interferes with work. . . . And all I need is my computer, and I will continue doing my job. When I started working in a big company, it began to feel a lot easier. (Aleksey, aged fifty-one)

In my informants’ narratives, the existence of different work styles is often supported by the popular anecdotal evidence that Russian techies are “gloomy” introverts who prefer to work on their own, while Israelis are more comfortable working in teams. Also, those informants who currently run their own companies admitted that if they were to choose between Israeli and Russian, they would, all other things being equal, opt for a Russian candidate because of the easiness in building a rapport.

The difference in working styles is insightful for the current analysis because it illustrates how the structure of an economy informs cultural attitudes toward work. While Russians due to their work culture seem to be more suitable for a job in a large corporation, Israelis prefer smaller organizations and startups. Catherine De Fontenay and Erran Carmel (2004, 52) attribute this difference to the incorporation of values developed during army training and argue that “the organizational skills developed in the military fit a small-to-medium sized operation better than in a large operation.” They point to the similarity of functioning within an army unit and a startup and argue that Israeli firms have had difficulty growing because of Israeli organizational culture.

Therefore, despite government programs and policies of assimilation for recent immigrants, many Russian Jews who migrated to Israel feel that their mentality is very much connected to their country of birth. Consequently, their preserved Soviet values affected their professional lives and robbed them of their chances for success in Israeli high tech. While this might be expected for the first generation of Russian immigrants from the 1990s, the next generation of high-tech professionals—or, as they call themselves, the “1.5 generation”—who came to Israel at the age of seven to ten years old, also share these same feelings. This generation of Russians is now the driving force in the Israeli economy as they are currently active on the labor market, but no one speaks of them as technological gurus, as the rest of the world does about Russian immigrants involved in high tech and related fields. One might say that they cannot be considered “Russians” as they were brought up in Israeli society. Indeed, they see themselves as Israeli citizens,
who graduated from Israeli universities and are devoted to their country—but are they untouched by the myth of the Russian programmer with world-class technological skills only as a result of successful integration?

EDUCATION, SOVIET STYLE

Who breeds the IT force in Israel? For those who live in Israel, the answer is obvious: the Israeli Army plays a crucial role in the development of the software industry, supplying it with highly skilled labor and technological spin-offs (Breznitz 2005a; Senor and Singer 2009) as well as maintaining a business ecology as effectively as leading universities do in Silicon Valley. However, Russians of the 1.5 generation chose to prioritize education over army service and to socialize professionally in the institutions established by the Russian diaspora. Thus, the greatest strength of the 1990s wave of immigrants—the Soviet tradition of education—has become their greatest weakness. In what follows, I illustrate how the next generation of Russians who stepped into the labor market fell into the trap of their Soviet heritage, just as their parents had.

Graduates of the military technological units gain preferred terms in the business world far beyond Israel’s borders. In particular, Unit 8200 has developed a reputation as a brand in cybersecurity and, in Israeli terms, service in this unit is equivalent to a degree from MIT or Stanford. When it comes to high-tech jobs in Israel, a university degree is considered to be overrated and much less important than military training:

The army produces talents that are very competitive with university graduates, in many cases, they are much better, especially in certain fields. Sometimes—for example in security—there can be even a knowledge gap because they actually invent those things in the army: they don’t learn how to, they just do. . . . The academia is a self-proclaimed system: they invented their own system of degrees to signal about what you learned. The army doesn’t give you a degree, but it’s a signal you’ve already applied what you learned. . . . A person with a degree is going to get a lower salary than someone with experience from the technological unit. (Stanislav)

However, for those Russians who came to Israel as teenagers the only path that seemed intelligible and natural was going to study at a university.

The reason is rooted in their sociocultural profile: Russian Jews, or at least their intellectual elite, are motivated not only to preserve former cultural patterns and values but also to install some of these patterns in their
new environment, for example in the area of education. Since their arrival, the Russian immigrants have been dissatisfied with the quality of the Israeli educational system, and this led to the establishment of alternative educational practices (see Horowitz 2005).

The Shevah Mofet science school in Tel Aviv was initially designed by immigrants from the former Soviet Union for their children. Lately, they have developed into a chain of schools or science clubs (kruzhki). These learning centers had become hubs for professional training and for Russian-speaking community outreach as they were run by parents with a background in mathematics and physics who volunteered to teach "Russian-style science." Word of mouth had made possible the engagement of Russian parents and children from all across Israel, which helped the Shevah Mofet school system overcome the transition from a local phenomenon to an integral part of state schools. On the one hand, this is a success story of Russian aliyah in respect to the involvement of Russians in Israeli high tech; on the other hand, the language of instruction was Russian as were all the teaching materials, which subsequently led to even more separation and segregation as children’s cliques become insular.

Education provided by the Russian community created an alternative framing for thinking about education and career development among Russians, as it cultivated a Russian understanding of vocation specifically in the fields of computer science and software engineering, which in several ways made Russians invisible in developing Israeli high tech. Thus, the 1.5 generation has had its own unique experience: having been raised in Israel and educated in its school system, but still under the influence of the milieu created by their parents.

The influence has cut both ways, however. Israel’s educational system has undergone drastic changes through the involvement of Russian immigrants. Initially designed for immigrants, Mofet has become attractive to native-born Israelis as well:

Mofet is a Russian trend. Although now my daughter has in her class only a couple of Russians, initially such a type of education that specializes in physics and mathematics was introduced by Russians here. In the beginning there were only Russian kids; however, now the overwhelming majority is Israeli. . . . I think, maybe, this was our [Russian] influence, because Israeli kids, as a rule, don’t learn so hard at such a young age. (Liudmila)

However, the Russian tradition of education spread beyond the high school classroom. During the middle of the 1990s, Russian immigrant professors were still adjusting to the market and trying to learn the language. Through-
out the country there were universities where courses in mathematics and physics were taught in Russian, allowing immigrant students to preserve specific ethics toward study and work.

While native-born Israelis after graduating from school were gaining professional experience during army service, Russians of the 1.5 generation, prejudiced in favor of higher technical education, were still trying to succeed through more classical pathways into professions, that is: finish school, attend university, and then complete compulsory military service:

It goes without saying that the army service was off the table. There was no doubt I was going to university first. It was mandatory. I just couldn’t go to the army as we [family] thought that I must have a degree first. Back in Russia chances were that they would choose a Russian specialist over a Jew for a job. In Israel, when it was that awful situation with unemployment, they would hire a Jewish guy instead of a Russian one. (Georgii, aged thirty-six)

Such decision-making was driven by the idea of the paramount role of technical education, which is still very common in Russia. It usually comes with the reassurance that your children will always be able to earn their daily bread. For many Russian immigrants, technical education was the only option as they believed that it would safeguard their future:

At some point, I envied my friend who before his high-tech career went to Oxford and was studying art there. Just because he wanted to do so and his parents were very supportive of him. My parents would never support my obsession with art or philosophy or anything of that kind. And there is no one to help me out, so I had to choose wisely. (Anton, aged thirty-four)

Furthermore, Russians opt for studying theoretical subjects, rather than applied ones. Two of my informants, who work in computer science and software engineering departments, admitted that they almost never see Russians among their students:

You should look for Russians in the departments of Mathematics and Physics. This is at some point silly and naïve as kids still don’t understand that: if they want a career in high tech, they should go and become a software engineer. This is simple: to succeed one needs to look for an educational track beyond the fundamental courses. (Maksim, aged fifty-six)

One of my informants also admitted that he would change his mind if he knew that mathematical education would never serve him as a competitive advantage:
That was Russian insanity. Adequate people don’t do that. They don’t go to universities unless they want to be scientists. So, what we were doing by going to universities first is simply making the distance between us and Israelis even greater. That’s why there are so many stereotypes about our inadequacy in business-related or even career-related matters. (Daniil, aged thirty-five)

The conditions listed above substantially decreased chances for Russians to find their first job through personal networks, since they were usually part of the “wrong” crowd. My informants told me that they struggled a lot at the beginning of their careers as their “Russianness,” which was very helpful during their studies, proved to be ineffective in moving forward on their career path in Israel. As my informants explained, native-born Israelis tend to “fall into” jobs, asking for referrals from friends and relatives. In addition, one can gain a market advantage by leveraging one’s Israeli clique:

We made our startup happen so easily with the help of one simple trick: my cofounder is a native-born Israeli, and his father is an investor. I mean this is his job, and I hope you can imagine how many other investors and people in the industry he knows and outside of Israel as well. That’s a key to almost every door, and Russians don’t hold such keys on their own. (Anton)

However, not the lack of social networks per se but the lack of local knowledge (“knowing the rules of the game”) has influenced the professional development of the 1.5 generation, since the only perspective they had on education revolved around those Russian beliefs on career development that they shared with their parents.

The major obstacle to the success of the 1.5 generation in Israeli high tech was a lack of knowledge about the role of military training. There is a strong link between citizenship in Israel and military service. The Israeli Army represents a shared purpose of “survival,” and its soldiers are treated like heroes who guard the safety of the country every single day. It is a special honor to serve in the technological units as the first prime minister of Israel, David Ben-Gurion, declared that in order to survive, Israel must always be technologically superior to its enemies (Avnimelech and Harel 2012). However, there was no way that the first generation of Russians would see the army as a promising career step into high tech. Russians perceive the army very differently: not only is it not considered to be the supreme symbol of civic duty, but it could also be dangerous even in peacetime.
The most obvious concern of every Russian parent is to safeguard their child from army service. In post-Soviet Russia (as well as during the last decades of the USSR) nobody wanted to see their child enter military service: the reason is that recruits face extreme forms of bullying, called *dedovshchina*. This phenomenon encompasses a variety of physical and psychological abuses that sometimes even result in death. Chances are high that children will have a traumatic experience during their military service in Russia—if they simply do not wear the maroon beret or have not got an honor to be in the Presidential Regiment. The perception of the Israeli Army was aggravated by the fact that service is mandatory for women as well as men and that the country, involved in conflicts for decades, is constantly in a state of war. In fact, children of immigrants shared their parents’ concerns and attitudes toward military service. Many Russians of the 1.5 generation prioritized getting a degree and postponed their army service in order to invest in higher education. As a result, they turned to an alternative institutional socialization that was not common in Israeli society, but customary for the former Soviet citizens. While for any other profession the sequence does not play a crucial role, for the career track in the Israeli high-tech industry it has significant repercussions, which will be discussed further below.

**IF YOU’RE NOT WITH THE ARMY, YOU’RE NOT HIGH TECH**

One of the central nodes in the national innovation system of Israel is the military, which facilitates learning, information diffusion, and professional community building (Breznitz 2005a). The Israeli Army provides immigrants with skills that help them to operate within Israeli society in general and Israeli high tech in particular.

A high level of cultural and social integration is the major benefit an immigrant gleans from military service: the army levels the field and provides immigrants with opportunities for developing both skills and contacts (Senor and Singer 2009). Israeli professional networks are often based on relationships formed during army service. All of my informants touched on the topic of the army’s role in professional development; in their narratives, they emphasized that often one line on a CV listing service in a unit of the intelligence corps could determine future career prospects not only in Israel but in the US. It is a well-known fact that the development of sophisticated technologies in Israel has stemmed from the existing base of competencies provided by military research in such elite technological units as Mamram, Talpiot, Unit 8200, MAMDAS, and Unit 8153. Despite the fact that these units
accept recruits on merit, the lack of initial connections nonetheless plays an important role for Russians. In order to get into the technological units, Russians not only need to have clearance and confirm that their time of residence meets the requirements, but they also need recommendations. My informants told me that, in particular, the intelligence corps is notorious for replicating itself and having dynasties on duty:

I got there based on connections. If it hadn’t been for my brother’s friend who used to serve in this unit, I would never have gotten there as I didn’t have connections of my own. And now I know a lot of my friends bring in their brothers, sisters. Of course, they need to get through the test first, but it’s much easier to get through the screening if someone vouched for you. (Igor)

However, army connections come in handy mostly in civilian life. Not only are “graduates” from the technological units better paid, but they also have an easier time finding a job, since they are often recruited by “alumni” of their own “alma mater.” The same informant stressed that having connections in the army is “the most important thing in the entrepreneurial world,” both skill-wise and in terms of networking:

University is irrelevant. If I need to hire two more people, then taking people not from our unit is something I don’t want to do. I don’t hire people from the university unless I don’t have a choice. . . . Education in the army is far more effective than a degree, ten times more. If I needed to build a new algorithm for something, I would rather take a PhD person. But I need to get things done, and most of the challenges are not that big in software design. . . . And I think most of the people from our units don’t do interviews, don’t ask for the cv. . . . I know many people in the army that I count on, and I can just ask, who is leaving the army soon and is a strong guy and I will hire him straight away. (Igor)

My informants also recalled a great number of occasions when army friends cofounded a startup. Thus, in Israel military training allows one to be simultaneously a professional in high demand and a thriving entrepreneur without having a degree. Although, interestingly, the absence of a degree indirectly affects the level of migration and keeps the best and brightest in the country:

The main problem is a visa. It’s not that simple to get a US work visa. And for me not having a degree makes it almost impossible to get a work visa there, but if I had a big enough company and I moved it there, then there would be options. (Igor)
Aside from training and building professional networks, the army facilitates the movement of venture capital: the military background of a candidate helps in the process of screening applications, as data on a person’s unit is a signal for investors that a person has leadership qualities and relevant experience (Breznitz 2005a). Indeed, both employers and investors look for promising candidates with the managerial skills they receive at a very young age during their army service.

The army forms the “antihierarchical ethos” (Senor and Singer 2009), which follows Israelis into their enterprises and ignites potent startups. Although the Israeli military is far from a small organization, many of its units function rather independently (De Fontenay and Carmel 2004). Due to this relatively flat organizational structure, important assignments are often delegated downward to privates and, consequently, they develop a strong sense of responsibility. The purpose of assignments is to teach soldiers to respond quickly to unpredictable changes, to think strategically, and to be able to communicate their opinions up the chain of command. The ability to come up with solutions and promptly implement them is valued in the Israeli Army, although it requires a high level of organizational flexibility. The Israeli Army had to redefine hierarchy and control to speed up the implementation of innovations. The case of my informant illustrates the military’s lack of hierarchy in action:

I had a startup back in the army. I came up with an idea of how to use artificial intelligence to automatically detect failures of the machine. Typically, in the beginning, a soldier starts with learning how to properly diagnose failures. So, he gets some failures, needs to diagnose and his commander asks him: “Could you tell me what the pressure is there? And what voltage? Do you hear noises? Where are they from?” And he was always right. And I told myself: “Well, if he can do this, the machine must be able to do this as well.” . . . Then I built the first prototype, and when a soldier came to diagnose, I told my commander: “Wait, don’t tell him, let’s use the software.” And it worked. It diagnosed the problem. . . . Two months later they told me to stop working on anything else, but this software. I went to pitch to a very high-ranked general, and I prepared the presentation, showing my vision of how they could reduce the number of technicians by 30 percent. . . . They asked me what I needed for this project. . . . I was still the lowest rank in the army but started working with thirty people, some of them were officers. . . . I was a nonofficer leading the team of officers. Nobody prepared them for that. And I said: “Listen, I’m not your commander, we are
a startup.” . . . We started working and then we won several national prizes. It shaped me a lot. I know how to dare to deal with things that challenge the status quo. (Stanislav)

The most striking part of this story is that he had to figure out how to make other people do what he wanted without bureaucratic or financial authority and managed to do that. That is why the Israeli Army is rightfully considered to be a hotbed for high-tech entrepreneurs: it provides its “graduates” with the attitude and skills essential for running a technological business.

Another important function of army connections is the creation of dense knowledge networks (Breznitz 2005a). Professional networks are important in the civilian market as they provoke information spillovers between local Israeli firms,22 creating the circulation of knowledge and successful practices that follow the movement of human capital. At the same time, the army also functions like multinationals in terms of growing the skill base, technology transfer, and setting organizational models and standards for the industry along with being the supplier of spin-offs.23 These functions that the military performs make an invaluable contribution to the development of the Israeli high-tech industry and are especially important in creating a unified body of professionals.

Indeed, the training offered in the army sets the standards of software development, because the “graduates” of the technological units will use their competencies in the civilian market and will nourish it with the specific techniques they learned. Thus, the army has taken upon itself the role of educating the professional community. One of my informants told me that the high-level quality assurance of Israeli programmers’ skills derives from the fact that all army-trained professionals carry out development strictly according to software engineering principles and standards:

In the army, we were taught that software should be written in a structured way, according to methodologies we were studying. They put a great emphasis on documentation, all those questions of maintaining, like readability and stuff. (Ivan)

The concern about quality is significant in military software development and intensifies the training process as it implies not only professional but also civic responsibility. Recruits learn almost immediately how to deal with technologies and make them bug free and stable, as public safety and the independence of the state are at stake. When graduates of the military technological units enter the civilian market, they spread those techniques and high requirements across the cluster. The military normalizes not only pro-
fessional but also organizational practices in the Israeli economy. Thus, the country has a relatively homogeneous local market favorable to the military spin-offs or startups founded by graduates, operating in a familiar milieu.

The organizational practices obtained during military service deserve further attention. My informants pointed out that the army provided them with a unique vocational ethos and norms that cannot be replicated anywhere else:

Each organization has its own culture. And the culture there [in the military] is just right for getting things done. It’s really hard to change an organizational culture. Really, really hard. If you take someone who was in the university—a great student and everything—and give him a challenge, something that you yourself don’t know anything about, will he be scared or will he say to you, “Hell yeah, let’s do this!”? It’s also part of the culture. I don’t want to educate someone how to operate like this. I will hire a guy who used to work for five years—day in day out—sometimes for forty hours without sleep. (Igor)

In this way, the army provides the industry with technological standards that can be formalized and with more intangible, cultural “standards” that can be obtained only through experience.

Dan Breznitz (2005a, 21–22) made a crucial point about the difference between university and military training, highlighting that they are centered around different approaches to software development. One, he argues, treats software as an academic discipline evolving from mathematics and electrical engineering, while the other treats software as a vocation and trains people to have the skills to write programs providing solutions to specific problems. The notable finding made by Breznitz is that historically vocational training appeared in Israel before the establishment of an academic computer science career path, the latter becoming a complementary training system for software programming in Israel. This transitional, medium-level education makes the Israeli case exceptional in terms of the production of highly skilled professionals. It exemplifies that tertiary education, often neglected, especially in today’s Russia, plays an important role in software development, since it has a lot of routine and practical steps that relate more closely to artisanal than to scientific work. Those Russians who were introduced to the academic system first appeared to be trapped in a state of gaining hands-on experience for a much longer period in comparison to their Israeli peers, who were introduced to vocational training. Instead of going from bottom to top in their professional development (the paradigm offered by
military training), Russians had to go in the opposite direction, and learn on the job how to apply the knowledge they obtained at the university. This negatively influenced their overall performance and may have reduced their value on the market for a certain period, while they were adjusting their competencies to the needs of the industry. Several of my informants told me that there were even cases when Russians managed to voluntarily skip army service and go straight from university to industry, which is punishable by imprisonment.

However, after finishing an academic degree, Russian graduates could take their chances of getting into one of the technological units, if their area of study lay in a field related to information technology. For those who had a different specialization, but had prior experience in software programming, there was also an opportunity to take several tests and be considered. However, in the early 2000s, such a trajectory required three more years in addition to the compulsory service.\textsuperscript{24} This not only postponed their entrance into the civil labor market but also meant they were unable to learn in practice and did not share the work ethic that is cultivated by the military software development. One of my informants explained:

\begin{quote}
We just simply didn’t know that was possible, that you could choose the army as the educational and career track. Everyone goes to the army, but we simply didn’t know about the existence of such schemes, we didn’t have such friends who could enlighten us. \ldots I would say all of the Russians went straight to university or, at least, all of us were definitely going to. (Daniil)
\end{quote}

The process of recruiting for service in the technological units resembles the standard process of applying to the university. Only students talented in sciences or mathematics after passing several exams and going through rounds of selection are admitted to the training programs. As a rule, a special position in the army comes with extensive training, thereby requiring additional years of service for this purpose.\textsuperscript{25} Recruits who have previous experience in programming or knowledge in computer science and who successfully pass all the tests can be offered a special service track that results in fewer years of service. Among my informants were several Mofet graduates and some of them served fewer years since they already had certain programming skills at the moment of screening and were able to secure a professional position right away.

However, a six-month preparatory course in the MAMRAM programming school was the main track that Russians were choosing to get into technological units.\textsuperscript{26} The important feature of this path is that a candidate should
have good potential, but any prior background in programming is not necessary. After graduating, students serve in one of the technological units or may be offered a position in Mamram itself. However, this track required two and a half years in addition to compulsory service.  

Due to the lack of army experience, the 1.5 generation started their careers later than most Israelis, entering the labor market with fewer chances to compete for lucrative jobs. Yet a lot of Russians often form the intellectual backbone of startup companies, enjoying nonadministrative positions or being technical managers that are usually on the backstage of real success. As they are also lacking in financial and business experience and have homogeneous social networks (most of their friends are usually Russian immigrants like themselves) they hardly ever start a business of their own.  

However, today there is a significant shift in attitudes toward work. Many Russians of the 1.5 and the second generations are part of a startup community. If they are not founders, they all are trying to find a job in a startup:  

I’ve been working in the civil sector for fourteen years or so and I’ve never been a classical employee. Even when our startup died, I didn’t see myself at Google, though I had several offers. . . . It’s boring and slow. I don’t want to be a cog in the machine; I need to see my results, to see that my work has its fruits. You’ll never have it, working in a company. (Ivan)  

Working in a startup, or at least in a local company, is considered to be more desirable. Moreover, Israeli companies create the chain of supply between the army and industry:  

We hire graduates of elite units through recommendations right after their army service. Graduates know our startups and want to work with us [startup founders], rather than with big corporations, like Microsoft. . . . We don’t compete for people because big corporations are not trusted that much. (Igor)  

In addition, I want to emphasize again the pivotal effect that the first generation of Russian immigrants from the 1990s has had on their children’s perceptions toward career choices. The intergenerational transmission of values has a more prolonged effect over time than one might expect. Since the first generation preferred to stay socially and culturally segregated, they were able to translate to their children values that dominated Russian society. Despite the fact that the 1.5 generation of Russian immigrants were raised in Israeli society, one can still detect the cultural footprints of their “Russianness” in their professional biographies. Thus, two generations of
Russian immigrants fell under the influence of Soviet heritage and have preserved certain values toward education and work.

CONCLUSION

Despite the commonly held opinion about transferability of technical skills, this study has shown that their utilization in the host economy is culturally sensitive. The differences in cultural and professional socialization presented themselves as barriers for Russians to fit into the Israeli software sector.

The economic structure of Israel was not the same as that of the Soviet Union, so that the high level of training acquired in the home country produced negative returns in Israel, as it could not be exploited by local industries. One could argue that Russian techies have not succeeded in Israel because they failed to integrate into the local capitalist economy, but this chapter argues that the issue has multiple layers. On the one hand, Russians could have been deliberately trying to avoid self-employment upon arrival in Israel, as they wanted to find stability that was not available for them under the Soviet regime. On the other hand, the Russian mindset was built on the traditions of Soviet educational excellence, particularly in mathematics and science; therefore, they were more concerned with the technology itself, rather than with learning free-market mechanisms to commercialize it.

The aspiration for educational excellence cultivated by Russian parents pushed many of their children to pursue first an academic track. By going to the university first, many Russians of the 1.5 generation, who are now at the peak of their careers and influence, were socialized into professions and society through an alternative model. While most of them went to universities and studied mathematics, physics, and other exact sciences, thereby respecting the Russian normative priority of education, Israelis went into army service and gained the hands-on experience that is in demand on the Israeli high-tech market. Due to the lack of practical experience—and especially military experience—in dealing with sophisticated technologies, the 1.5 generation started their careers later than most of their Israeli counterparts, entering the labor market with fewer privileges and competencies. As a result, the 1.5 generation, as well as their parents, are not notable in Israel’s technological landscape.

The mental baggage Russians brought with them from the FSU has impacted their career paths and the role they play(ed) in the making of the Israeli high-tech industry. However, the effects of Soviet influence on Russians’ mindsets has not worn off just yet.
Even now that second-generation Russians are present in the market, few are visible as startup founders. Successful Russian Israeli entrepreneurs I met pointed to cultural aspects to understand this state of affairs. Russians aspire to excellence in a principled and stubborn fashion. Should a Russian entrepreneur notice that his project does not promise great prospects, he will fight until the end, trying to make things work, as Russians usually perceive their startups “as if it were their own child” or as a life project, and often prefer to stay after the acquisition. In the same situation, an Israeli entrepreneur will drop it without hesitation and switch to the next project after the acquisition, since, indeed, “Israel's entrepreneurial culture of exit is blamed on shortsightedness and a focus on immediate monetary return” (Drori, Ellis, and Shapira 2013, 162).

This issue takes us back to Rothschild Boulevard. The street is creating a critical mass of entrepreneurial density. It has gentrified since 2005 and has become one of Tel Aviv’s most expensive neighborhoods. Young entrepreneurs flock to the area, opening their offices there so that companies can learn from each other and share resources. One of my informants said that this street is gradually changing Israeli attitudes:

And now they are building a lot of skyscrapers there for their offices because the demand is crazy. And then, once you have so many acquisitions or exits, all these new millionaires or billionaires, they become investors, so that they fuel the next generation of startups. So now you see different kinds of companies, they are not like those ten years ago. People suddenly wanted to build big companies and long-lasting companies, and they don’t want to exit. And it’s an interesting question to ask: “Why?” I don’t know why: maybe it’s a maturity, maybe it’s like fashion. . . . I don’t know. (Stanislav)

Given the entrepreneurial activity of Rothschild Boulevard, we may be witnessing a new stage in Israel’s regional development. And maybe in this emerging culture that aims at creating self-sufficient companies, we will soon be able to find more “Russian” startups.

NOTES

1. All interviews with IT workers were conducted in Russian and translated by the author.
2. During my fieldwork in Israel, I conducted thirty biographical interviews with Russian-speaking Israeli citizens (aged twenty-three to sixty-five) who migrated to Israel from the post-Soviet countries (from 1990 to 2012).
3. This chapter is focused on the 1990s—a period when the software industry in Israel grew at impressive rates and when the biggest wave of Russian aliyah happened.

4. In Israel, they say “high tech” referring to what in Russia we call “information technology.” The term “information technology” in Israel does not cover programming/software development as it defines a very specific niche of activities designed to facilitate interactions between “clients” and software developers, e.g., to write functional specifications, to describe systems’ design.

5. Hereinafter “Russians.” By “Russians” I mean Russian-speaking Jews, who migrated to Israel from the post-Soviet space, according to the Law of Return. Organized immigration of Jews from the diaspora to Israel. The term “aliyah” has a positive connotation and literally means “ascent.”

6. The 1990s wave of Russian immigrants was substantially composed of Soviet Jews with academic training: nearly 60 percent of the immigrants received higher education in the USSR, which was higher than the share of people with higher education among Israelis (at 40 percent) (Yaffe and Tal 2001).

7. The Israeli government provides immigrants with free basic training in Hebrew and one free job training program.

8. On how Russians fit into the Israeli academia, see De Fontenay and Carmel 2004; Kheimets and Epstein 2001; Yelenetskaya and Fialkova 2009.

9. It is worth noting that a number of scholars have emphasized that new national priorities emerged with the arrival of Soviet immigrants (Avnimelech and Harel 2012; Avnimelech and Teubal 2006; Breznitz 2007a).

10. Such programs included Inbal, Yozma, Magnet, and Technological Incubators (see Avnimelech and Harel 2012).

11. The difficulty of such analysis is heightened by the fact that most Israeli software startups rely on American investors and shareholders to go global. Israeli companies have adopted the strategy of entering joint ventures with more established US companies (since the establishment of the Binational Industrial Research and Development; see, e.g., Avnimelech and Teubal 2004) or creating alliances with multinational corporations (Breznitz 2005b). Consequently, it has become hard to track the ownership of startups and trace the Israeli roots of their development. It is even more challenging to identify Russian Jews among the founders who, in addition, might have changed their names to Israeli ones. However, during my fieldwork, I met thirteen successful Russian Israelis from both generations. Still, they remain relatively “invisible,” since their companies either have not done an initial public offering yet or were acquired by bigger companies.

12. Blat is the use of informal channels and personal networks to obtain goods and services. For further discussion of blat, see Ledeneva 1998.

13. The best-known examples are small traders (fartsovshchiki) and “shuttle traders” (chelnoki).

14. The early 1990s brought a cultural shift where entrepreneurship increasingly gained prestige in Israel society (Avnimelech and Harel 2012; Breznitz 2005b).
16. A large number of Israeli technological companies were too small to compete with MNCs (Breznitz and Ornston 2013), thereby threatening job security.

17. On how the universities in Silicon Valley create networks of practice and knowledge networks in close reciprocal interaction with the industry, see Saxenian 1994.

18. Unit 8200 is a special unit responsible for collecting signal intelligence and code decryption.

19. In Russia, the maroon beret is the symbol of the elite special forces (spetsnaz). It is worn by commandos of the Ministry of Internal Affairs (MVD).

20. Center of Computing and Information Systems. Mamram is the software-oriented elite unit, which is part of a bigger parental unit Lotem, the Unit for Telecommunications and Information Technology.


22. AnnaLee Saxenian (1994) observed that knowledge spillovers played a key role in the formation of the Silicon Valley ecosystem. Derived from personal connections and interfirm mobility, they promoted the spread of technologies and organizational structures between companies across the cluster.


24. Nowadays, men serve thirty-six months and women serve twenty-four months.

25. If one wishes to serve in one of the technological units, they have to stay in the army for a longer period. The time of the service above the compulsory period differs across the units. For instance, the Talpiot program for recruits with outstanding potential in science lasts nine years.

26. While there are other technological units that have their own educational programs, only Mamram offers a pre-army course.

27. Data from the interviews. Information is relevant for the early 2000s.

28. Israeli culture does not stigmatize failure and repeatedly brings failed entrepreneurs back into the system (Senor and Singer 2009, 20).


REFERENCES


