The story of late Soviet technocracy can be compared to the gray side of the moon, the side that is neither visible nor invisible: debates about technocracy, once central to Soviet studies, are peripheral to scholarly interest today. And yet to ignore technocracy is to ignore a particularly significant and ambiguous part of the Soviet reality. Beginning in the mid-1950s the Soviet Union experienced a peculiar combination of continuing industrialization and preparation for postindustrial society. Automation of industrial processes promised to make manual labor redundant, whereas a rising number of white collar workers, managers, and scientific experts, a nascent Soviet technocratic class, led Sovietologists to speculate whether these changes might undermine the Party’s monopoly on power. Operating with a simplified distinction between political and administrative actors, building on a notion of the power struggle as a zero-sum game, Western scholars pondered the question, if Soviet technocrats gained more power, would the power of the Communist Party decrease proportionately? Approached from this angle, the ability of Soviet technocracy to challenge the monopoly of the Party was deemed a failure: the Party’s ability to control managers and specialists appeared to remain unchallenged. Consequently, Brezhnev’s period was labeled as “stagnation,” and the collapse of the Soviet Union was attributed not to internal transformation through technocracy, but to nationalist secession. In the end, the arguments about converging industrial and technocratic systems were dismissed as unable to explain sociopolitical change, so that interest in Soviet technocracy faded away after 1991.
In this chapter I argue that the role of Soviet technocracy has been unduly overlooked and that this neglect has important consequences for our understanding of the transformation of late Soviet governance and, indeed, its role in the shaping of global Cold War governmentality. This gray zone of Soviet governance was the realm of highly positioned political functionaries, scientists, and what I call “research administrators,” individuals with an academic background, positioned in responsible posts in the state administration overlooking domestic research policy and international exchange, all of whom formed a new constellation of state power machinery. As such, this constellation was equally characteristic of both Soviet and liberal democratic regimes after the war: these actors, described by Frank Fischer as “a quiet and faceless power,” redefined both the tools for governance and the world to be governed.\(^3\) A belief that governance could and should be improved with the help of scientific methods and scientific expertise appealed equally to Marxist-Leninist ideology and American planners and policy makers, and we know now in detail just how damaging many of these universal governmental techniques were, with their emphasis on large-scale schemes of planning.\(^4\) Furthermore, in political debates technocracy became conflated with the nonaccountable behavior of self-appointed scientific and political elites, misguided by their blind trust in numbers and their belief that man could control nature.\(^5\)

However, Soviet technocracy also accommodated other, more sophisticated approaches to governance. Despite believing in their own omnipotence, technocrats could not exert full control; even when they did, their applications of what was presumed to be a neutral, universal science of governance had important unintended effects. Policy sciences were developed to grant more control to decision makers, but their application often did the reverse by revealing the uncertain consequences of their decisions. In the shadows of what has been described as high modernist visions expressed in large-scale projects in the irrigation of Kazakhstan, reversing Siberian rivers, the space program, and the nuclearization of the Soviet energy sector,\(^6\) lurked a different understanding of scientific governance, which underscored the notions of complexity, contingency, and ultimately self-regulation, making no essentialist distinction between man and nature, but instead seeing people, machines, and living and nonliving matter as components of complex systems, only separated by different levels of organization. This was a new, in Latour’s words, “nonmodern governmentality” emerging.\(^7\)

The rise of a Soviet technocracy that increasingly relied on policy sciences began in the late 1950s. As its development does not fit neatly into the existing periodization of the Soviet regime into the thaw (1957–1964), stagnation (1964–1986), and perestroika (1986–1991), I suggest interpreting this new Soviet governmentality as a slow change that proceeded in direct connection with Western
developments and in important ways was dependent on the administration of Aleksei Kosygin. In his capacity as chief administrator in charge of light industries, Kosygin contributed to the war effort by organizing supplies to the besieged Leningrad. From 1962 he was heavily involved in foreign trade and served as prime minister from 1964 to 1980. The rise of Kosygin, who was perceived by his contemporaries and historians alike as a dry bureaucrat, was not merely a peculiar moment in Soviet history, but also an indicator of a wider shift toward the rationalization of government. This has parallels with the situation in Western Europe: according to Louise Amoore, during World War II British professional accountants gained central roles in national policy and strategy making for the first time, because they produced food rationing quotas. Accordingly, the managerialization of Soviet government was rooted in war planning, just as it was in the West, and Kosygin is a clear example of this larger process. Kosygin fostered a particular network of government officials who were able to bridge Party bureaucracies, the military-industrial complex, academia, and foreign relations. The central role in this circle was played by Kosygin’s son-in-law, Dzhermen Gvishiani, a vice chairman of the State Committee for Science and Technology (GKNT), a governmental institution in charge of scientific and applied research policy and international transfer.

This chapter thus introduces the little-known tandem of Kosygin and Gvishiani, who jointly sought to modernize Soviet governance by introducing new scientific approaches, building new institutions, and forging new, transnational networks of policy scientists. So far Kosygin and Gvishiani have been overlooked as mere bureaucrats by historians of Soviet science and technology. Although Kosygin played a role in foreign policy, he was never known for distinct political strategies, whereas Gvishiani was very active internationally, representing the Soviet Union at a number of international organizations, including the UN. Indeed, Kosygin was the only member of the top nomenklatura who worked continuously under Stalin, Khrushchev, and Brezhnev, whereas Gvishiani was professionally active in the strategic departments in charge of technology transfer from 1955 to the end of the 1980s. The Kosygin-Gvishiani tandem was a typical arrangement in the Soviet top nomenklatura: official and informal ties intertwined.

It is important to focus on the tandem of Kosygin-Gvishiani in order to understand the Soviet role in the development and worldwide promotion of the new scientific governmentality, one that built on the systems approach. In part because of a technological imperative, in part because it was intellectually in vogue, Soviet technocrats directly borrowed the foremost Western policy sciences, such as OR, systems approach, and cybernetics. The leaders of the world’s largest state socialist system dreamed of being able to organize and manage their country the way the Pentagon managed their departments, and jealously followed the stream
of innovations flowing from the RAND Corporation. For instance, the State Planning Committee, Gosplan, argued that the methods developed at RAND saved 14 billion USD between 1962 and 1965, and Soviet technocrats wished to see think tanks established on the RAND model. This chapter describes social networks in which such thinking emerged, tracing the ways in which the rise of Gvishiani and Kosygin intertwined with the development of a new intellectual paradigm of governance, the scientific-technical revolution.

**Modernization Theory, the Scientific-Technical Revolution, and Postindustrial Communism**

During the postwar era, liberal democratic and communist regimes shared a fundamental discourse on socioeconomic change, which emerged in a dialogue between the MIT economic historian Walt Whitman Rostow’s modernization theory and the theory of scientific-technical revolution (STR). Cold War historians emphasized the central role of modernization theory in shaping US internal and foreign policies. Developed as a tool to limit the spread of communism by helping third-world countries embark on the US path of industrial development, modernization theory was also used by US Sovietologists to explain and predict Soviet society. Modernization theory provided a powerful narrative of change, in its conceptual structure, as noted by Nils Gilman, agreeing with the Marxist-Leninist version of development, which set out clearly defined, universal historical stages of development. As such, modernization theory can be understood as a story with a clear protagonist—the enlightened rulers, equipped with scientific expertise—and an antagonist, in the form of traditional society. An important point here is that the character of the political system had only a weak link to this trajectory of development: both liberal and illiberal systems were in principle able to embark on modernization process. Therefore, according to modernization theory, the Soviet state and society were understood as rather anomalously than antagonistic, even though Rostow did entitle his seminal work *The Stages of Economic Growth: A Non-Communist Manifesto* (1960). The Soviet system, wrote Rostow, was rather derailed by misguided communist ideologues, but the Soviet Union had a chance to get back on the track of development, with a goal of ultimately converging with the West. This is because Rostow saw only one form of modernity, communism and democratic-capitalism being merely different paths to the same end. Nevertheless, modernization theorists warned the US government that it was imperative to embark on modernization of the third world, if they were to prevent it from following the communist path of modernization.
In this way, Rostow’s modernization theory clearly appears as a strategy for Cold War competition. However, it was not the only influential approach explaining developmental trajectories at that time: its competitor was the theory of scientific-technical revolution, which differed from modernization theory in its even more universalist claims. The theory of scientific-technical revolution postulates that new technosciences, based on automatic control and digital technologies, lead to the restructuring of society by intellectualizing labor and thus reducing the working class, at the same time freeing up workers’ time for leisure pursuits. Where did the idea of STR come from? Some suggest that STR is derived from the term “second industrial revolution,” the first use of which has been attributed to the French sociologist Georges Friedmann, in his *La crise du progrès* (1936). While the notion of the industrial revolution emphasized the leading role of technology in socioeconomic development, the notion of STR placed the fundamental science along with technology as drivers of innovation, economic growth, and social change. It is widely agreed that this conceptual juncture was established by British scientist and political debater John Desmond Bernal, who employed a classical socialist argument that the progress in science and technology automated the production, in effect deskilling and socially disadvantaging manual workers, but he also called for the rationalization of administration, for administration, according to Bernal, had yet escaped the revolutionary impact of science. Bernal postulated that science should become the “chief agent” of social change, acting in two ways: first by “paving the way” through technology to socioeconomic change, then, later as a motive, a conscious urge for further transformation. Bernal argued, however, that progressive science, including the scientific-technical revolution, was by its nature “incompatible with capitalism.” According to this view, the scientific-technical revolution alone could not solve class antagonism and ameliorate the negative effects of private capital ownership, an idea that appealed to communist philosophers. Beginning in 1957 Bernal engaged in the debates on the third industrial revolution, based on semiconductor electronics, which was also described as the informational revolution, to further advance his call for the social goals of STR.

The idea of the ambivalent effects of STR gained wide influence through the work of a British scientist, Charles Percy Snow, who presented his thesis on two cultures and scientific revolution at Cambridge University in 1959. But whereas Snow saw the industry as a dangerous system, encroaching to dominate society and destroy human values, others pointed out that the industry itself was changing, shifting to intellectual, creative, increasingly automated work. Such was the argument set out in Leonard Silk’s *Scientific Revolution* (1960). An economist by training, Silk was an influential journalist at *The New York Times*, concerned with global issues and, as his *Scientific Revolution* shows, involved in the forging of a
transnational discourse coalition, placing new technologies at the heart of future development, where the premium was placed on both speed and growth. To give academic weight to the volume, but also to link his agenda to the Soviet Union, Silk invited the Harvard-based econometrician, Wassily Leontief, to write an introduction. In the spirit of Cold War competition, Leontief dismissed the arguments that the Soviet Union would run out of breath in the competition of economic growth and stressed that the American advantage was “large-scale research,” plugged into “rapidly expanding markets” for new products. Silk, in turn, argued that slow growth threatened the United States both internally and externally. Internally, slow economic growth would pose a risk of social conflict, whereas externally it would disadvantage the United States in its bid for world domination. In contrast to the idea of an age of automation or cybernation, inspired by Norbert Wiener and promoted by such theorists as Donald Michael in his *Cybernation: The Silent Conquest* (1962) and Marshall McLuhan, Silk suggested a broader category of “research revolution” as a descriptor of the post-war condition in advanced societies. The most prominent extension of this line of thought belonged to Daniel Bell, who, albeit skeptical about many of the postulates about cybernation, developed a theory of a postindustrial society leading to the convergence of capitalist and communist regimes, as political ideology would be replaced with technical systems of control. However, while the proponents of cybernatization, inspired by Wiener, saw cybernetization as a way to develop liberal order by making way for advanced self-regulation through multilevel goal-setting and feedback-based self-correction, Silk espoused a much more elitist view. In favor of large-scale research, Silk saw as fundamental having an “outstanding” leadership that would “set the goals that stir others to their best efforts.”

It was, indeed, a miraculous coincidence that the thaw or relaxation of ideological control in the Soviet Union from 1954 to the mid-1960s coincided with the onset of US modernization theory, as well as Western publications on the scientific-technical revolution. Thus at exactly the same time, in 1954, when the influential Chicago sociologist Edward Shils and the French philosopher Raymond Aron developed the theory of a unitary industrial society and first used the phrase “the end of ideology,” claiming that political struggles would no longer be centered around the issue of the exploitation of the working class in the developed world, the Soviet Union was opening up its scientific institutes for new sciences, such as cybernetics, and declaring that the scientific-technical revolution would become the driver for the growth. However, was STR becoming a new ideology? The Communist Party clearly understood the propaganda value of STR. From 1957 to 1961 the Soviet Union had many spectacular scientific achievements, such as Sputnik, the first man in space, the Soviet computer, and the bomb,
capturing the public imagination as a rising red power. STR’s career in the Soviet Union demonstrates the plasticity of views on the meanings of ideology, politics, and expediency; the Soviet notions of STR emphasized its political and neutral aspects depending on the context.

Therefore, it is not surprising that the Soviets embraced Silk’s and Bernal’s version of STR, one of scientific research-driven economic growth, where research organization was directed and controlled by a strong leader and anchored in achieving social equality. Silk’s volume was promptly translated and published in Russian in 1963, with a preface written by Dzhermen Gvishiani. However, this translation was distributed only within restricted organizations, intended for scholars and decision makers and not for the public, which suggests that although the rhetoric of the scientific technical revolution was part of the public political discourse in both East and West (British prime minister Wilson delivered his famous speech on “the white heat of the revolution of technology” in 1963), the oversight and control of the socioeconomic mechanism of this process was understood as belonging to governmental professionals. In parallel with these debates, a new research policy advocacy emerged in Britain and the United States, which called for a systematic and substantial governmental policy for scientific research. It is important that these policy networks included such key promoters of operations research as Patrick Blackett and Solly Zuckerman, who would later be involved in the creation of International Institute for Applied Systems Analysis (IIASA). In the next section I show how all these factors contributed to the widening political and intellectual agenda for the Soviet version of STR, an agenda that reflected ongoing de-Stalinization in research policy, academic thought, and institutional reform, and, later, in the internationalization of the Soviet system.

While the Soviet discourse on scientific-technical revolution (STR) appears to have originated in policy debates about the material-technical basis of communism, the introduction of STR to Soviet policy and public debates took place in parallel with the Twentieth Congress and the ending of Stalin’s cult. In 1955 Nikolai Bulganin, the chairman of the Council of Ministers, announced that the Soviet Union was open to the transfer of science and technology from the West. The five-year plan approved in 1956 set a goal for Soviet industry to fully exploit the ongoing “scientific-technical revolution” in the furthering of the Soviet economy. After Bulganin’s speech, the terms “STR” and “scientific-technical progress (STP)” were used interchangeably, the most prominent theoretician being Anatolii Zvorykin, a historian of science and technology who was also interested in economics and sociology and who authored programmatic articles on this subject between 1958 and 1960. Parts of the writings of Bernal were translated into Russian and published as early as 1956. Like Bernal, from the early 1950s on Zvorykin doubted the idea that science and technology belonged to the super-
structure of Marxist society, eventually proposing that they should be understood as a direct productive force.\textsuperscript{31}

While technoscientific advancement was regarded as a necessary condition of the development of the Soviet state, few Soviet scientists would have guessed at that time that STR would become a vehicle for the rejuvenation of Soviet social science. An important shift happened in the early 1960s, when Walt Rostow launched his modernization theory as an intellectual program to conceptualize development at home and abroad. It appears that Soviet scholars first encountered Rostow’s ideas in the Fifth World Congress of Sociology in Washington, in September 1962, where eighteen sociologists, including such influential reformers of Soviet social science as Anatolii Zvorykin, Genadii V. Osipov, and Edvard Arab-Ogly, represented the Soviet Union. The influential research agenda-setting journal \textit{The Issues of Philosophy} (in Russian, \textit{Voprosy filosofii}), introduced at length Rostow’s theory of stage-driven development from a traditional to modern society, at the same time criticizing modernization theory as a strategic instrument to expand US influence in the developing world.\textsuperscript{32} The vigor of these debates indicates that Rostow’s theory deeply unsettled Soviet intellectuals, who realized that the Marxist-Leninist models of development were at risk of being outcompeted.

It is probably not a coincidence that it was only after the Fifth Sociology Congress that \textit{Voprosy filosofii} began to regularly publish articles on STR and scientific-technical progress (STP) as drivers of not only Soviet economic development but also social change, including such themes as noncapitalist routes of development for the third world and the use of mathematical models and systems to plan such developmental programs.\textsuperscript{33} The first of these articles, which thoroughly criticized Rostow, were published in the Soviet Union between 1963 and 1965. At the same time extensive criticism of the notion of a single industrial society and convergence theory appeared.\textsuperscript{34} Major conferences to examine the history and the future of STR were organized in the GDR and the Soviet Union; for instance, one such meeting took place at the Institute of Natural Science and Knowledge in 1963, resulting in a compact but comprehensive volume that presented the approaches of Soviet historians and philosophers of science to STR.\textsuperscript{35} Many books, booklets, and articles followed.\textsuperscript{36} Similar treatises on STR were published in Eastern bloc countries, Czechoslovakia, and Romania.\textsuperscript{37} In Eastern Europe the most prominent notion of scientific-technical revolution was formulated by a group of Czechoslovak scholars under the direction of the Marxist philosopher Radovan Richta.\textsuperscript{38} Richta’s volume \textit{Civilization at the Crossroads: The Social and Human Implications of the Scientific-Technical Revolution} (1965) outlined the future development of Czechoslovak state socialist society pretty much along the same lines as Bernal’s and Leonard Silk’s, and was promptly translated into many languages, although not Russian (this delay might be explained by generally slow turnover
of the Russian translation—the lag was usually three to five years—and by the “Prague spring” of 1968. Following the Soviet invasion of Czechoslovakia, Richta was not prosecuted, but he significantly revised his views, abolishing the idea of open paths of state socialist development. Richta’s ideas were introduced to Soviet audiences only after 1973, under Gvishiani’s patronage.\textsuperscript{39}

Although the Czechoslovak revolt politically tainted Richta’s writings in the eyes of Soviet ideologues, it is important to note that in Soviet academia there was considerable room for different opinions on the definition of STR. Scholars debated whether STR was revolutionary or evolutionary and whether STR effects were universal or varied depending on local circumstances. Some argued that STR had similar effects in communist and capitalist regimes, while others defended the uniqueness of Soviet STR.\textsuperscript{40} For me it is important to note that these debates were harnessed to promote empirical social sciences, which would become the building blocks of the new Soviet scientific governmentality: beginning in 1966 the new, sociological research agenda of social consequences of STR was launched, with Zvorykin appointed as the head of the department dedicated to these problems at the newly established Institute for Concrete Social Research (IKSI). In the field of management science, Gvishiani’s role was indispensable: in 1966 he declared the 1920s to be the golden age of Soviet but also Western scientific management, regretted what he described as an “absurd” disruption of this field under Stalin, and called for a speedy reinstating of scientific management as a field of theory and practice in the Soviet Union, building on local, Russian tradition and transferring the most advanced methods from the West.\textsuperscript{41}

The intensity and institutional support that the STR debates and, from the mid-1960s, studies into socioeconomic effects of the STR had suggested that there was more to the STR than just an intellectual innovation. A discursive resolution was reached: it was agreed that both Western and Soviet societies had many shared features, both being industrial societies, but the convergence theory was inverted. The Soviet ideologues argued that it would be Western countries that would converge into socialism, while other Soviet scholars satisﬁced themselves with vague claims that the positive effect of scientiﬁc-technical revolution was limited to state socialism, STR being unable to resolve the “internal contradictions of capitalism.”\textsuperscript{42} Although compromise was awkward, it was also necessary, because it opened a discursive and institutional space for an East-West ﬂow of innovative ideas, technologies, and practices, as both STR and modernization theories were highly political epistemologies.

Indeed, I propose that the Soviet government used the STR discourse as a highly strategic and political instrument. While the US government used modernization theory to expand US hegemony abroad, the Soviets embraced STR as a sub-theory of modernization, aiming to legitimize East-West cooperation but also their own
interventions in the global South. The very fact that Gvishiani himself promoted STR theory in the Soviet Union is quite revealing here. Both sides were obviously guided by different rationales and invested different hopes in this process. Modernization theory postulated a universal path of development, driven by technoscience and industrialization, which would bring about a sociopolitical value change toward democracy, enabling US policy makers to meet the Soviets halfway. In turn, STR advocated the fundamental integration and co-transformation of social, economic, and technical systems. Just as the Americans used modernization theory to guide their foreign policy and development plans, the Soviets mobilized STR to legitimize their international activities, promoting socialist planning in developing countries, and as a bridge for technoscientific transfer from the West.\(^4\)

Modernization theory can be understood as a strong story in which protagonists are moving toward the same future by somewhat different paths, the communist and liberal-democratic ones. According to Barbara Czarniawska, narratives are not just tales but important organizational devises, for narratives bind together distant, loosely coupled practices and imbue them with a coherent sense and, even more importantly, a purpose.\(^4\) Accordingly, a story that enables a government and a scientific expert to identify and link observed changes into one chain of events is also a promise of control. Because the theories of modernization and the scientific-technical revolution offered a new narrative of global development, they should be understood not only as intellectual discourses, but also as ways of opening new vistas for governmental and scientific intervention.

Thus STR played a double role in relation to Soviet society: it was used by the Soviet regime as a heuristic tool to understand itself, but also as a discourse to legitimize international technology transfer. In turn, STR theory resonated well with modernization theory and was used by Western scholars to interpret Soviet society.\(^4\) STR, in this way, was a powerful tool of sense-making that linked the two opposing regimes. In the next section I discuss the efforts of particular individuals to support and entrench the STR discourse in the Soviet government: the story of Soviet STR is not just an intellectual history, but also a story of military-industrial complex and East-West transfer, and, as such, it is a story of Kosygin and Gvishiani.

**“He was never a revolutionary”: Aleksei Kosygin**

Kosygin’s contribution to Soviet governance extended well beyond his widely described failed attempt to reform Soviet economic management from 1966 to 1969, but not enough is known about his influence inside the Soviet Union and
abroad. Although acknowledgment of Kosygin’s importance surfaces occasionally in studies of separate branches of Soviet economy and technology, there is no systematic account about his governmental legacy. Several memoirs, published in Russian, provide at least some, if not entirely reliable, information about the personality of Kosygin. The difficulty is that Kosygin, widely known for his extremely reserved, dry, and even sulky manner, never kept diaries and never wrote memoirs. In what follows, I discuss some of relevant moments in Kosygin’s life story as it was connected to the development of scientific expertise around the State Committee for Science and Technology and the career of Dzhermen Gvishiani.

Aleksei Kosygin was born into the family of a qualified worker, Nikolai Kosygin, in Saint Petersburg in 1904. Originally a farmer hailing from the Kolomenskoe area near Moscow, Nikolai Kosygin moved to Saint Petersburg in pursuit of a better-paying job, in which he was rather successful and, according to his biographer, enjoyed for that time a reasonable standard of living. Nikolai’s wife died when Aleksei was only four and the child, together with his two siblings, was brought up by their father, who took care to give his children an education. Indeed, the biography of the future prime minister of the Soviet Union was not limited to worker experience. Quite the opposite: a glimpse of Kosygin’s early years reveals the development of an educated, ambitious, and successful entrepreneur and not someone who shot from a workshop floor to the Politburo. The young Aleksei Kosygin attended a Petrograd business school and embarked on a professional career as a manager of a gold-mining company, located in Kirensk, Siberia. In Kirensk Kosygin was in charge of management and trade relations, excelling in both. There he married Klavdia Krivosheina, of a well-to-do family of entrepreneurs, and had a daughter, Liudmila. The Kosygin family, as well as their nanny and Evenk housekeeper, lived in a comfortable house. In his grandson’s memoir, the young Kosygin is described as an entrepreneurial “NEP-man,” a phenomenon of the New Economic Policy that followed attempts at stabilization after the October Revolution, who was promoted from the mining company to work at the cooperative union in Novosibirsk.

Forewarned about the changing political climate and escaping the purges, Kosygin moved back to Leningrad in 1930, where he dissociated himself from the cooperative union and began to study engineering in the Kirov Textile Institute. Once again, Kosygin successfully climbed the career ladder. Just before the outbreak of World War II, Kosygin found himself promoted to people’s commissar in textile and by 1940 served as a deputy chairman of a council in charge of mass-consumption goods. In December 1941 Kosygin was personally charged by Stalin to supervise the evacuation of factories from the European part of Russia to the east. In January 1942, now a representative of the State Defense Com-
mittee, Kosygin was flown by a military plane, accompanied by jetfighters, to besieged Leningrad, where he organized the evacuation of industrial plants and the arrangement of supplies to the starving city. In 1943, Kosygin devised and presented a recovery plan for the Soviet economy.

From these war experiences Kosygin made and retained close personal connections with several top military commanders, although, according to his contemporaries, he was never deeply involved in matters of the military-industrial complex. One of the mysteries for his biographers is that, although part of Andrei Zhdanov’s circle, Kosygin surprisingly survived the last purges, the so-called “Leningrad affair,” in 1949. From the late 1940s through the 1950s Kosygin gained, lost, and regained Politburo membership, in any case retaining his role as the chief administrator in the field of light industry. Historians attribute Kosygin’s ability to survive to both his indispensable, practical understanding of the Soviet economy, and to his political cunning. According to his contemporaries, Kosygin had a severely dry manner and “only somewhat relaxed” during the thaw, some of which was probably consciously assumed behavior, a survival strategy learned under Stalin.

Under Nikita Khrushchev, Kosygin was instrumental in making the Soviet Union catch up and overtake the West, although he deeply disapproved of Khrushchev’s utopian statements, such as promises to reach communism in twenty years. His contemporaries noted Kosygin’s dislike of Khrushchev’s rushed schemes, but Kosygin cunningly tapped into Khrushchev’s determination to modernize the Soviet economy to pursue his own projects. For instance, Kosygin not only personally supported the development of oil and gas fields in Siberia in the 1960s and 1970s, but was proactive in establishing the first high-level trade contacts with Italian businesses in 1962. In 1959 Khrushchev even assigned Kosygin as the chairman of Gosplan, in which role Kosygin disciplined regional economic councils. But Kosygin continued to have a complicated professional relation with Khrushchev and in the end he would participate in the coup against the unpredictable chairman of the Soviet state. Contemporaries’ memoirs detail this ambivalent relationship: to celebrate Kosygin’s birthday, Khrushchev threw a lavish party in his official summer house in Petrovo-Dalnee in February 1964, to which members of the Presidium, ministers of defense and foreign affairs, as well as families were invited. However, in the autumn of 1964 Kosygin called for Khrushchev’s resignation in front of the Central Committee. In contrast, Kosygin had a less formal relation with Brezhnev than he had had with Khrushchev: according to Kosygin’s grandson, Aleksei Gvishiani, Kosygin and Brezhnev called each other by their first names. Historians indicate a growing tension between Kosygin and Brezhnev at a later stage, but Kosygin’s influence began to decline only in the late 1970s.
Although Kosygin was not heavily involved in the military matters, these issues could not be completely alien to him. I have already mentioned Kosygin’s role as a member of Defense Committee during World War II. He kept this affiliation after the war, and thus when Kosygin became the vice chairman of the Council of Ministers in 1960, he was also a member of the Defense Council. In 1964 Kosygin became prime minister of the Soviet Union and, in this role, assumed an active position in Soviet foreign policy as the chief spokesman in arms control matters.57 Before his rise to the post of general secretary, Brezhnev was familiar with the development of military-industrial complex and espoused the avoidance of war at all costs; however, at the same time he was initially uninterested in foreign policy and delegated some tasks to Kosygin.58 In this capacity, Kosygin also participated high-level international negotiations about foreign policy and defense, as, for example, in the important Glassboro meeting in June 1967, where the idea of mutually assured destruction was announced (and rejected by Kosygin), and later, in relation to the Soviet invasion in Afghanistan, to which Kosygin personally opposed.59 In addition to this, Kosygin was involved in international trade; for instance, through the Dartmouth conferences he met David Rockefeller, first in 1971 and then in New York in 1973. Some rather daring ideas of East-West cooperation were voiced in those meetings: Rockefeller recalled that, during their meeting in 1974, Kosygin proposed Rockefeller to co-fund and co-own nuclear plants in the Soviet Union.60

In all, Kosygin’s skills and position made him an ideal gatekeeper between civil and military-industrial sectors. Although his relations described Kosygin as being “never a revolutionary,” Kosygin was a champion of the scientific-technical revolution, concentrating on solving practical issues in economic and research and development sectors while making sure that the solutions never directly challenged either existing political priorities or ideological discourses. As I show in the remaining part of this chapter, it was through Kosygin’s circles that Soviet policy sciences were developed at home and, through international cooperation, spilled over into nonmilitary applications.

Enter Gvishiani

One would search in vain for Dzhermen Gvishiani in histories of the Soviet Union. Although this somewhat exotic name surfaces time and again in the context of technoscientific transfer or even espionage, little is known about the role that Gvishiani played in Cold War relations.61 If in the scholarship Kosygin emerges as a rare if dry pragmatic, Gvishiani remains almost completely unknown.62 However, this lacuna is hiding one of the most extraordinary actors of the late
socialist era. A man with an inscrutable name, who held prominent posts, and had extraordinary connections around the world, including membership in the Club of Rome, Gvishiani mingled with global business and political leaders abroad, and promoted the theory of scientific-technical revolution, systems analysis, and computer modeling of global development at home. It is the task of future historians to trace Gvishiani’s political networks: while his personal archival file is not available to researchers, there is some evidence that Gvishiani was no simple bureaucrat. For instance, when in the midst of the Cuban missile crisis in October 1964 Khrushchev invited the president of Westinghouse Electric, William Knox, for a talk aiming at sending threats to Kennedy, it was Gvishiani who was present alongside the head of the Soviet Union. Promoted as an academician at the Soviet Academy of Sciences, Gvishiani was awarded honorary doctorates from several Western universities. A small planet was called after him by a Russian astronomer in 1976.

In many ways Dzhermen Gvishiani was a typical member of the Soviet nomenklatura: brought up in the provinces, he studied in the capital and had a strong link with the military. Gvishiani was born in Akhaltsikhe, a town on a southern border of Georgia, in 1928, the same year as Kosygin’s daughter Liudmila, Gvishiani’s future wife. These two families could not be more different. Dzhermen Gvishiani’s mother was Armenian, but his father, Mikhail Maksimovich Gvishiani, was Georgian. It was Mikhail who gave his son this unusual name as a tribute to the communist security organs (“Dzhermen” is a combination of “Dzherzinskii” and “Menzhinskii”). Mikhail Gvishiani (1905–1966) had only a primary education and made his career in the State Political Directorate (GPU) and then the People’s Commissariat for Internal affairs (Narodnyy Komissariat Vnutrennikh Del, or NKVD), serving as the head of personal security for Lavrentii Beria, who rose to the post of the chief of NKVD in 1938.

The name of Mikhail Gvishiani surfaces in writings about the Soviet repression, as he directed a special unit in charge of surveillance and arrests. In 1939 Mikhail Gvishiani was listed as part of Beria’s group and a candidate member of the Central Committee. In 1944 Mikhail Gvishiani supervised the resettlement of Chechens, which involved a mass execution. It is not known, however, if Mikhail Gvishiani was in any way involved in the Beria’s postwar projects of strengthening Soviet military-industrial complex with captured technology, transferred from East Central Europe to secret research towns in Russia. After Beria’s death in August 1953, Mikhail Gvishiani left NKVD as a reserve lieutenant-general, but lost his status in 1954. Thereafter he was put in charge of the Georgian Committee for Science and Technology. There is speculation that Mikhail Gvishiani could have encountered Kosygin during the Leningrad affair, but I could not locate sources to support this hypothesis.
This background of the Stalinist repression could hardly be guessed from memoirs that mention Dzhermen Gvishiani. In a way, the life trajectories of the father and son Gvishiani illustrate the shift that the Soviet power system underwent. Whereas brutality, as Paul Gregory notes, was a characteristic feature, indispensable for career advancement in Stalin’s government, other, softer managerial values came to the fore by the late 1950s. It is Dzhermen Gvishiani’s polished manners and aptitude for diplomacy that come across in the recollections of his contemporaries. In an interview, a national security advisor under Johnson described Gvishiani as “very intelligent, not ideological man. Indispensable.”

The British pioneer in the operations research P. M. S. Blackett wrote that Gvishiani was a “capable bloke.” In his memoir the president of the American National Academy of Science, Philip Handler, did not spare words in expressing his fascination with Gvishiani as “a sharply intelligent man,” who had “a superb brain” and was “very civilised and urbane.” US presidential science advisor Jeremy Wiesner also recalled Gvishiani as a courteous diplomat who claimed to be in charge of Soviet research policy in the computer industry. The active coordinator of many US-Soviet exchange programs Yale Richmond remembered Gvishiani as “a suave and sophisticated Georgian with a perfect command of English.” Others, such as the founder and director of the Kennedy Government School in Harvard, Howard Raiffa, recalled that Gvishiani commanded influence in the Soviet Union which far exceeded his posts (as a rule, Gvishiani served as a deputy director on many boards). The accounts of Western scientists and policy makers mention suites in fancy hotels, such as the Four Seasons in Vienna and the George V in Paris, where Dzhermen Gvishiani would receive his guests. Impeccably and elegantly dressed, Gvishiani made such an impression on Alexander King of the Organization for Economic Co-operation and Development (OECD) as a representative of the world political elite, that King even wondered what Gvishiani was doing in the academic gathering.

How did Gvishiani himself reconcile his international reputation as a professional and sophisticated diplomat and, furthermore, an adamant modernizer and world citizen, with his complex and difficult family history? It is hard to tell, but judging from biographical sources, it seems that this reconciliation was achieved mainly through denial: in his memoirs, Gvishiani never directly confronts this part of his family history. For instance, Gvishiani wrote about his pride in his father, who was military not only in his professional roles, but also in character: “a brave man, who was always very busy, concerned, subject to constant danger and also a great rider and gunman.” Never does Dzhermen Gvishiani expand on the Stalinist repression. Instead, he only hints that his family “knew almost nothing” about “tragic facts and events,” quickly adding that if the scale of the repression had been more widely known, it would not have mattered anyway,
because the Soviet victory in World War II more than redeemed this dark side of history.\textsuperscript{78} This was not an unusual take on the difficult past. Here Gvishiani’s position was not different from the one adopted by ex-Nazi engineers, many of whom obscured their relationship to the murderous regime by adopting different strategies, such as defining their loyalty first to technical projects of the state and thus distancing themselves from politics and violence. However, if Nazi engineers, as noted by Dolores Augustine, developed “elaborate strategies of self-justification,” none such strategies were put in use by the Gvishianis and Kosygins.\textsuperscript{79} They simply did not need to justify themselves. Instead, these families appeared to enjoy undisrupted legitimacy through the Soviet and post-Soviet eras.

And it really seemed that Dzhermen Gvishiani was brought up for a diplomatic career. As a child, he spoke Russian, Georgian, Armenian, and Turkish, and he would later become fluent in English, French, and Italian. Just like the Kosygins in the 1920s, Gvishiani’s family had a housekeeper when residing in Vladivostok (Gvishiani’s domestic help, however, was one of the Gulag inmates).\textsuperscript{80} Dzhermen finished high school in Vladivostok, where the aid provided by the Allies fostered his interest in the West and where he began to learn English, in 1946. In the same year he enrolled in the Moscow Institute of International Relations (MGIMO).\textsuperscript{81} Having completed his studies in 1951, Gvishiani did service in the marine fleet. In Moscow, Gvishiani excelled in networking. At MGIMO he met Liudmila Kosygina, a student of Soviet-American relations, whom he married in 1948.\textsuperscript{82} This was definitely a step up the nomenklatura ladder: at that time Kosygin was in charge of light industries and was soon to become the minister of finance.

Higher education was indeed crucial for the formation of Soviet governmental elites that eventually came to occupy leading positions after World War II. For example, it was at the Industrial Academy in Moscow in 1929 that Nikita Khrushchev met Stalin’s wife, then also a student, who brought him to the attention of the leader.\textsuperscript{83} Later Dzhermen Gvishiani would help Khrushchev’s grandson gain a position at the Institute of Systems Research. Furthermore, Dzhermen Gvishiani’s sister married Evgenii Primakov, who would later become the director of the Institute of World Economics and International Relations (IMEMO) and, after the collapse of the Soviet Union, the head of the state security agency and prime minister under Boris El’tsin. Fluent in English and a specialist in Soviet-American relations, Gvishiani’s wife, Liudmila Kosygina-Gvishiani assisted her father Aleksei Kosygin on several high-level business trips abroad, including a meeting with Queen Elizabeth II and, albeit not in an official role as a translator, President Lyndon Johnson in Glassboro. Liudmila rose to the position of first secretary and then counselor at the Ministry of Foreign Affairs, and later became the director of the Library for Foreign Literature in Moscow.\textsuperscript{84}
In this way, the Gvishiani-Kosygin tandem could be understood as an important nodal point in East-West knowledge transfer, flowing through the central research policy-making organ (GKNT) and the leading academic institutes. Close family ties, but also spatial proximity characterized the networks of top Soviet elites. Initially the Gvishiani family lived in an apartment on Frunzenskaya embankment, but eventually moved into the apartment house where Kosygins lived, on Vorob’evskii Road, now Kosygin Street, in close proximity to the Moscow River. Built in 1969, this building appeared to be an ordinary, functionalist apartment block. Indeed, several features, such as a nonstandard design, in particular wide balconies that were atypical for apartment blocks of that period and constructed of better than usual materials, revealed that this house was not built for common Soviet citizens. The small number of flats and only two entrances also suggest exclusivity. Most unusually for Moscow, the house was erected with a wide surrounding belt of greenery. In the same building lived the presidents of the Soviet Academy of Sciences, Mstislav Keldysh and A. P. Aleksandrov; the area also included the homes of Brezhnev and several other high officials. According to biographers, Kosygin’s father never followed his son to Moscow and continued living in his communal apartment in Leningrad, where he also worked as a yard sweeper when retired.

The Soviet leaders of STR fostered their networks outside their working hours. As all members of the nomenklatura, the Kosygin-Gvishiani family spent vacations in summer houses. The families of the ex-NEP-man and ex-NKVD officer appeared to be close: many images document their vacations together. For example, an image dated 1948 shows the extended Kosygin family against a setting of palm trees and sunshine. Liudmila wears a modest pale pink dress with matching ribbons in her pleated hair; the athletic and handsome Dzhermen looks confidently straight into the camera. Another, later image documents the Kosygins and Gvishianis in, presumably, a governmental summer residence in Arkhangel’skoe. The spacious interior is decorated with tasteful oriental carpets, an obligatory landscape painting, and a grand piano (Gvishiani, indeed, was known for his love of the piano). Yet another picture shows a different summer house used by Gvishiani. Situated in Nikolina gora, where many Moscow-based artists and scientists, such as the prominent physicist Petr Kapitsa, had their summer houses (and where oligarchs such as Chernomyrdin and Khodorkovskii built their dachas in the 1990s), the image reveals a more down-to-earth interior, decorated with taxidermy and ethnic souvenirs. It was probably to this summer house that—as Kosygin’s grandson, Aleksei Gvishiani recalled—a military commander visited, arriving in an amphibian truck. The memoirs also allow a glimpse of the conspicuous consumption of the elite: Kosygin, reportedly, never drank vodka, but preferred champagne (brut). Gvishiani smoked only Pall-Mall cigarettes: a pack is displayed
in Gvishiani’s office, kept as a memorial museum at the All-Union Institute of Systems Research/Institute of Systems Analysis (VNIISI/ISA).

All these details of everyday life show that the activities of the extended Kosygin-Gvishiani family revolved around a gated community of Soviet nomenklatura, hardly ever exposed to the oppression of persistent shortages that marked the everyday life of the common Soviet citizen. Like all top nomenclature officials, Gvishiani received just under six hundred rubles as his salary at the GKNT, which, being only three times more than a decent salary in the Soviet academia, did not make him wealthy per se. However, as a top official Gvishiani qualified for a number of privileges, such as summer houses, and subsidized groceries, car, and housing. These perks, as well as salaries, were kept secret. Furthermore, there was a fast track from such a gated community to the world outside the Iron Curtain, and the Gvishianis traveled a lot. For example, Aleksei Gvishiani, then sixteen years old, recalled accompanying Kosygin on his business trip to Italy in 1962, when they used this opportunity to visit Florence and Rome. A few years later Aleksei Gvishiani spent an afternoon in London pubs being entertained by the son of Prime Minister Harold Wilson.

For people like Gvishiani, the Iron Curtain was not so much a problem as an asset. Given this exceptional arrangement for themselves and their families, it is not surprising that neither Kosygin nor Gvishiani were revolutionaries: they had little personal interest in changing the political organization of the Soviet system. But they believed that the survival of this system could only be achieved through modernization and the opening to the West. It is difficult to judge whether they anticipated any sociopolitical changes as a result of such West-oriented modernization. Yet, as I show in the following chapters, the Kosygin-Gvishiani tandem did play an important role in opening and sustaining channels for contacts, which resulted in many significant transformations inside the Soviet regime. The next section discusses the ways in which a set of special institutions was created, bridging policy and academic worlds to enable these East-West connections.

The Heart of the Gray Power: The GKNT

As I have mentioned earlier, Gvishiani’s work affiliations were many. Having graduated from MGIMO he joined the navy and while serving pursued higher education part time, with a focus on industrial sociology. In the autumn of 1955 Gvishiani left the military as a reserve officer to take up a position at the State Committee for the Introduction of New Technologies (Gostekhnika, established in 1948) under the Council of Ministers, which was renamed as the State Committee for Science and Technology (GKNT) in 1965. In this instance, Gvishiani
was appointed to the department in charge of foreign science and technology. At the same time he chaired the Standing Commission on Co-ordination of Scientific and Technical Research of the Council of Mutual Economic Assistance (Comecon or CMEA, established in 1949). Gvishiani, in this way, was involved in East-East and East-West cooperation.

Both Gvishiani himself and historians emphasized that Kosygin preferred to rely on professionals or experts, in contrast to Brezhnev who preferred a politically loyal team. Yet this does not mean that Soviet specialists had more power to decide the key issues. According to Stephen Fortescue, although highly placed Soviet policy makers adopted scientists as their protégés, this personal proximity to power did not give scientists a mandate to formulate or otherwise impact policies. Rather, this was a social contract: in exchange for scientific evidence that was relevant to the politically set policy agenda, the protégé scientists received a mandate to access and redistribute resources in the academic sector.

This model of patron and client applies well to the case of Kosygin and Gvishiani. Being in charge of the GKNT, Gvishiani was able to significantly influence national in research and development priorities. In turn, he was able to direct significant resources toward establishing new types of organizations involved in policy-relevant research, such as IIASA and VNIISI in the 1970s. However, the evidence shows that resources and influence flowed in only one direction: my interviews revealed that both IIASA and VNIISI scientists were highly frustrated about their inability to have an impact on Soviet governmental decisions. In turn, I have not come across a single case in which any scientist succeeded channeling new policy ideas up through Gvishiani. The flow was, just as Fortescue suggested, top-down: Gvishiani ensured that resources flowed down to the academic sector to his trusted scientists, but it is very difficult to say to what extent scientific expertise found its way up.

Nevertheless, Gvishiani’s career track illustrates well his determination to bridge policy and academic worlds by gaining credentials in both. Although most of his time was dedicated to managerial duties and, in the 1960s, high-level trade negotiations, Gvishiani sought to establish and consolidate his academic credentials. Thus he defended a candidate dissertation in philosophy and published his first book, Sociology of Business, in 1961. Contemporaries recalled this book having a significant impact, because it was one of first attempts to introduce Western management theories to Soviet audiences, which opened up a path for rehabilitation of some of the interwar Russian thinkers in scientific management.

It is important to note that Gvishiani’s authority was sometimes challenged: his work received occasional attacks from his political opponents, mainly boiling down to accusations of promoting convergence theory. From 1962 to 1968 Gvishiani taught philosophy at Moscow State University and continued part-time
research on US methods of management, which were the subject of his doctoral dissertation, defended at the Institute of Philosophy in 1968. The dissertation was published as *Organization and Management* (in Russian, *Organizatsia i upravlenie*) in 1970; forty thousand copies of the second edition were printed and the book was reissued as late as 1998. Gvishiani also wrote prefaces to the Russian editions of books by leading Western scholars of management and forecasting, such as Jay Forrester and Erich Jantsch.

Yet I suggest that a genuine innovation, supported by Gvishiani, was an idea that management and control sciences should be integrated with a more ambitious and complex task of Soviet social science. The STR discourse postulated an ever-growing complexity of technoscientific systems, intertwined with complex social change. This complexity was understood as a challenge for both planning and running Soviet industries. Thus, although the STR discourse posited a technoscientific advance of communism, it also indicated the coming of new types of problems, many of which were social in character. It was to tackle these problems that the field of sociology was summoned: a discipline that was first banned as a bourgeois pseudo-science by Stalin was rehabilitated in the mid-1960s. Gvishiani was directly involved in this process, first as a member of the Soviet Association of Sociology and the director of a department for research on complex problems at the Institute for Concrete Social Research (IKSI) from 1969 to 1972, an institute that was founded with personal support of Aleksei Kosygin. At IKSI, Gvishiani patronized its research program on the social consequences of STR. After IKSI was purged in the late 1960s and early 1970s, Gvishiani personally took care of several researchers, such as Nikolai Lapin, transferring them to the newly founded Institute for the Problems of Management and, later, to VNIISI, a multidisciplinary institute, which he founded and directed in 1976. I return later to discuss VNIISI at some length, as this institute was a Soviet attempt at establishing a think tank-style organization, after the example of IIASA, with the hope that it would become a Soviet response to RAND. Before IKSI, Gvishiani also chaired a department at the Institute of Automatics and Telemechanics, and when IKSI was shaken up by political rifts, he moved to the newly established Nemchinov Institute for the National Economy, where he chaired a department of socioeconomic sciences from 1972 to 1974. In this way, Gvishiani moved like a whirlwind through the most vibrant research milieus that emerged in the 1960s. Gvishiani’s name appeared as an author or editor on many publications in the new, strategically important fields of policy science and management, although his authorship has been questioned by some. Given his many obligations, it is very likely that Gvishiani was listed as a nominal author or patron of the relevant research fields.

At the international level, Gvishiani’s academic profile was anchored in the management discipline, which was at that time undergoing rapid professionalization:
he was a member of the American Academy of Management, the International Academy of Management, and the International Council of Management, as well as the Soviet-Finnish and Soviet-American commissions for management, the latter in cooperation with the Ford Foundation. But Gvishiani was more interested in the theories of management as an organizational activity, and especially in theories of leadership, and less so in the science of management, the area which was dominated by cybernetics in the Soviet Union at that time. Indeed, Gvishiani wrote that his interest in systems analysis emerged out of practical concerns, related to decision-making in Soviet research policy.

Gvishiani was no less active abroad than in Moscow. The very launch of Gvishiani’s international career was enabled by the “new foreign policy,” assumed by Khrushchev beginning in 1955. According to Zubok, a significant part of this new Soviet foreign policy involved a return to the 1920s’ idea that the transfer of Western technologies would speed up Soviet development, but it also involved intense public diplomacy. It was after the Twentieth Congress, which condemned the Stalinist regime, that Gvishiani embarked on his first trip abroad: by invitation from the British Trade Ministry, the Soviet delegation departed for London in 1956. The Soviet officials were hungry to see the world outside the Soviet Union: on the way, they stopped in Prague, the Czech spa town of Karlovy Vary, and Paris, using this opportunity to explore the hitherto inaccessible Western world. From that time intense international networking followed. In 1958 Gvishiani spent a month in China and helped organize a German industrial fair in Moscow, which was then followed up with lengthy negotiations in Bonn. Contacts with Italy were initiated. In 1955 the Italian industrialist Piero Savoretti began exploring opportunities to cooperate with the Soviets, which culminated with the Italian industry fair in Sokol’niki in 1962. But Gvishiani’s first major international trade experience was associated with Kosygin’s trip to Italy following the Sokol’niki fair. During this trip, Kosygin pursued three priority areas for Italian-Soviet cooperation: oil and gas, the automotive industry, and personal computers. Gvishiani met with the heads of Fiat and Olivetti, including Aurelio Peccei, the future founder and president of the Club of Rome, and was also a member of the Soviet negotiating team, the work of which resulted a contract with Fiat to build its Togliatti factory. Worth USD 817 million, this deal was the largest East-West trade arrangement since the October Revolution.

In addition to trade deals, Gvishiani represented the Soviet Union at a number of international organizations. The United Nations Advisory Committee on the Application of Science and Technology to Development (UNACASTD) in New York was established in 1963 to promote technology transfer to developing countries and to probe into social and other consequences of technoscientific pro-
gress (UNACASTD defined a set of policy problems, which later would be reflected in IIASA’s agenda). Through UNACASTD, Gvishiani met Carroll Wilson, a prominent scholar and policy advisor of the MIT’s Sloan School of Management. A frequent visitor in Moscow, Wilson would later invite Gvishiani to give a talk in Boston, Massachusetts. Gvishiani was involved in the early stages of planning UN Institute for Training and Research (UNITAR) and was a member of the annual Soviet delegation to the UN Economic Commission for Europe, one of the key platforms for developing the methods of macro-economic statistics and exchange of data. In the United States, Gvishiani met and corresponded with Jerome Wiesner, science advisor to Kennedy and Johnson, and dined with Henry Ford and Thomas Watson of IBM. Gvishiani also hosted the famous (and of dubious repute) businessman Robert Maxwell, a British media magnate of Czechoslovak origin.

By the mid-1960s the Kosygin-Gvishiani tandem had reached the zenith of their power. New to the office of prime minister, Kosygin appointed Vladimir Kirillin as the chairman of the GKNТ in September 1965. Kirillin, an established scientist, a specialist in thermophysics, and the previous occupant of such high posts as deputy minister of science and education, vice-chairman of the GKNТ, vice-president of the Soviet Academy of Sciences, and member of the Central Committee department for science and higher education, was one of very few who were personally close to the overtly cautious Kosygin. In their memoirs, contemporaries recall that Kirillin used to celebrate New Year’s parties in Kosygin’s dacha in Arkhangel’skoe, at which Keldysh, Kirillin’s closest neighbor in Zhukovka, was also present. The friendship between Kirillin and Kosygin endured, regardless of political turbulence, and their mutual reliance was strong: indeed, when Kosygin left his post in 1980, Kirillin immediately resigned from the GKNТ on his own initiative, a decision that was unprecedented for a Soviet official of such high standing.

This triangle of Kosygin, Kirillin, and Gvishiani (note that Kirillin was also Kosygin and Gvishiani’s neighbor in Moscow and his summer house was in front of Keldysh’s dacha) would shape Soviet international cooperation in science and technology, the area which, according to Kosygin, was of fundamental importance for rejuvenating the Soviet economy. Kosygin viewed management reform as an indispensable component of economic reform, and, in turn, Gvishiani promoted empirical, applied branches of management science, something which was not an easy undertaking: empirical research was avoided by many Soviet scientists, because they found abstract theorization much safer than the minefield of empiricism and the deserts of data. Nevertheless, management was formally recognized as a legitimate scientific field in December 1965, and departments and institutes cropped up all over the Soviet academic system.
East-West Transfer, the GKNT, and VNIISI

Soviet science policy was shaped by several interrelated organizations, most importantly the GKNT, the Presidium of the Soviet Academy of Sciences, and the Politburo, the central decision-making organ in the Central Committee of the Communist Party of the Soviet Union (CPSU). However, historians are not entirely sure about the actual role of the Central Committee in setting science policy; existing sources hint that the science department at the Central Committee served mainly as a postbox that processed received recommendations. Similarly, special councils at the Academy of Sciences fulfilled the function of information exchange points rather than policy-forming bodies. It seems, therefore, that the key organization that shaped actual directions of research was the GKNT, which had a mandate to shape national priorities and intervene in the work of research and industrial organizations during any stage of implementation of the five-year plans, and, importantly, had a significant reserve fund at its disposal. Located on Gorky Street (now Tverskaia Street), the offices of the GKNT were frequented by foreign diplomats and businessmen. The building buzzed and the institution was well provided with funds as with international contacts: in 1976 the GKNT’s annual salary fund totaled 2,620,500 rubles and listed 1,034 employees.

In all, the GKNT can be described as the key center that tied international contacts together, channeling them to the development of all branches of Soviet scientific research and industry. Although GKNT chairman Vladimir Kirillin was not a member of the Politburo, Kosygin was, so that through Gvishiani the GKNT had direct, informal access to the highest decision-making body in the Soviet Union. Also, Kirillin was an influential figure himself: born in 1913 in Moscow, into the family of a medical doctor, Kirillin specialized in thermo-engineering. He served as vice chairman of the GKNT and as the vice minister of education and science, as well as a member of the Pugwash committee in 1963–1964. Kirillin was also a deputy to Kosygin at the Council of Ministers; in turn, Gvishiani was Kirillin’s deputy for international relations. Kirillin chaired the GKNT for fifteen years until he stepped down from his position in 1980 to be replaced by Gurii Marchuk. Indeed, in 1980 Gvishiani was considered as a director of the GKNT, but Kosygin advised him not to take this position. In this way, the Soviet scientific-technical revolution was overseen by a triumvirate of power, Kosygin, Kirillin, and Gvishiani, in the 1960s and 1970s.

Although the GKNT was responsible for all areas of research and development, computerization of Soviet industry and academia was one of its foremost tasks. Indeed, it is difficult to overestimate the importance of computer tech-
nology in what I describe as a changing post-Stalinist technoscientific governmentality in the Soviet Union and the Kosygin-Kirillin-Gvishiani triumvirate played an important role in bringing about this change. A cluster of computer technology, systems analysis, and scientific management was purposively developed as a technical and intellectual resource for the Soviet government and managers that would enable them to detect and respond to the wider socio-economic problems and challenges of the scientific-technical revolution. The dedication to this area of scientific expertise was reflected in the institutional structure of the GKNT, which established the Department of Computer Technology and Management Systems to coordinate a project of the all-union automated system (OGAS) and network of computer centers. From 1971 on, the GKNT was involved in setting the framework for the national network of information centers for economy and management, facilitated with computer technology and plugged into one informational network, an ambitious project that failed to live up to its promise. In relation to this, further institutions for new policy sciences were established, such as an all-union scientific research institute of organization and management and a laboratory for economic mathematical methods and OR at the Institute of Management of the National Economy. A special Institute of the Problems of Organization and Management (VNIIPOU) was founded at GKNT with direct support by Gvishiani in September 1971 (renamed as the Institute of Computer Technology and Informatization in 1986). The system-cybernetic sciences were applied to govern different sectors, geophysical, industrial, and social, ranging from weather and water to libraries, health, and tourism. For example, there were plans to set up an automated hydro-meteorological agency, equipped with satellites by 1975; other examples include the automated system Weather (Pogoda), a photo-telegraph transmission system Pallada, automated systems for different consumer services, a system for emergency hospitalization in large cities, automated reader services in the Lenin library in Moscow, and a system for automatic process planning, accounting, and organization of tourism, including tracking foreign visitors in the Soviet Union.

There were many bottlenecks that impeded the implementation of such automated systems, not the least being the pervasive informality that made the formalization and codification of organizational processes an especially daunting task. One of key issues was the computer hardware itself, in particular input and output devices. The computerization of economic planning and organizational management entailed consistent attempts to fight and bypass the Coordinating Committee for Multilateral Export Controls (CoCom) embargo on the export to the Soviet Union of dual-use high-tech, including computers and other electronic and automated devices that could be used in both the military and civil
Archival documents show that the GKNT actively searched for ways to establish cooperation with the United States in the area of computer technology for business systems from at least as early as 1964. For instance, in 1965 a GKNT employee asked to visit leading American computer producers, such as RCA, IBM, Racecon, and Data Control Corporation, in turn offering American specialists visits to Soviet computer centers in Moscow, Minsk, Kazan’, Kyiv, Erevan, and Vilnius. In a true spirit of Cold War secrecy, the Soviets did not offer the Americans much in exchange: a list of the computers, suggested as suitable to be seen by foreigners, included Minsk-22 and -23, Razdan-2 and -3, M-220, BESM-6, and a perforator Vilnius, machines that were far from being cutting-edge examples of Soviet technology, whereas the Soviets were particularly interested in the SDS-6600, SDS-6800, and IBM-360, believing that the application of these machines in Soviet industries would reduce the lag behind the West by five to seven years. Yet the initiative did not come only from one side; US companies were keen to expand their markets and were considerably interested in selling their production and licenses to the Soviet Union. For example, beginning in 1967 representatives of Hewlett Packard paid regular visits to Moscow and Akademgorodok in Novosibirsk.

According to historians, most of these efforts to get Western computer technology turned out to be futile, and from the 1970s on the Soviets relied on illegally obtained blueprints to produce their own versions of, for example, the IBM-360. However, I suggest that the Soviets’ efforts to access Western computer technology should not be understood as a failure, but as an important process, in the course of which an new institutional and social basis emerged, opening a path for the development of a new language of international connectivity and new thinking about governance. In other words, the impact of this opening extended beyond the failed transfer of hardware. For instance, correspondence between the GKNT and American companies reveals a search for a neutral language to frame such cooperation: one GKNT official used the idiom “practical problems,” such as constructions, transport, and management of production, which could be solved with the help of computers and which spoke to the “mutual interest” of the United States and the Soviet Union. Furthermore, whereas hard technology could not travel easily across the Iron Curtain, soft technology, such as scientific approaches to management, in particular systems analysis, could, and so could people. Here a path for a more intensive exchange was opened by the US-Soviet agreement on cooperation in science and technology, signed in 1972, which included computer applications in management and systems analysis. Cybernetics and the systems approach, in the eyes of the Soviet state, was part and parcel of the larger project of computerization.
That soft technologies of control were strategically linked to hard computer technology is quite evident if one follows Gvishiani’s network and activities, in particular his support for cooperation with the United States in promoting management training in Western Europe. In 1968 scholars from the MIT Sloan School of Management visited the GKNT for the first time, and were received again by Gvishiani in 1969. In October 1970, Richard Cyert and Richard Van Horn, both of whom would rise to the leadership of Carnegie Mellon University and embark on an ambitious computerization of the university, visited Moscow to negotiate the organization of an international management training school in Italy. Cyert and Van Horn were accompanied by a representative of the Ford Foundation, which, according to Giuliana Gemelli, had a longstanding interest in developing management sciences in Europe. As I show in chapters 4 and 5, the establishment of this East-West institute, later called IIASA, grew from efforts in this field of cooperation.

In this chapter I have argued that a new, post-Stalinist governmentality emerged in the Soviet Union as a result of several postwar developments. Innovations in computer, information, and control technologies that emerged during the war informed a new developmental theory of the scientific-technical revolution that appealed to both East and West scientists and policy makers. The gospel of the STR, as well as the commitment of Soviet planning to new large infrastructure projects propelled computer technology and systems analysis into the avant-garde of Soviet governmental thought. If in postrevolutionary Russia the first attempts to develop methods for large-scale scientific management followed the GOELRO electrification plan of the 1920s, the post-Stalinist projects involved the extraction of Siberian oil and gas, building large transport systems, and managing growing metropolitan areas, all of which required computerization. Here the Gvishiani-Kosygin tandem played a hugely important role: Kosygin personally promoted the development of Siberian oil and gas while at the GKNT, Gvishiani mediated the deal with Germans to purchase of the pipes needed to build a pipeline to Europe. In 1972 gas production was launched in Siberia, and fifteen to twenty major oil fields were put into operation during the following decades. In 1973 Soviet gas began to flow to Western Europe and so did Soviet experts on large-scale planning and forecasting. Gvishiani was not only the key Soviet negotiator in the large East-West trade and transfer agreements, but was also a patron of the emerging systems approach. As the vision of a scientific-technical revolution conveyed a picture of increasing socioeconomic complexity, the systems approach promised to provide the tools to cope with this complexity, including
computer applications for management and policy-making. The state socialist regime would now engage with the issues of world energy, world trade, and world problems—and all of these in Laxenburg, a sleepy village on the outskirts of Vienna.

In retrospect, the Soviet strategic response to US modernization theory with STR served the interests of both sides. The Soviets did manage to gain access to some limited Western technologies. But in order to do so they constructed new discourses and organizations that facilitated a less tangible, but nonetheless important change in their understanding of the nature of the surrounding world and the role of governance and control within it. Although neither Kosygin nor Gvishiani appeared interested in political reform, they facilitated this birth of a new intellectual apparatus of governance. The banner of scientific and technical revolution or STR was just that: a highly powerful discourse that legitimized an unprecedented, albeit controlled, opening of the Soviet system to the West, and the co-transformation of both. However, as I show in subsequent chapters, this legitimization was of central importance for the development of a new, system-cybernetic governmentality.

Did modernization and STR theories soften Cold War confrontation? On the one hand, although the Soviet Union was classified by Rostow as a country on a universal path of modernization, this did not replace the doctrine of containment. The continued effort to contain the communist bloc was expressed, for instance, in the export embargo on strategic goods like computer technologies from West to East. However, the US government keenly supported the transfer of soft technologies, hoping for a change in the Soviet mentality of governance, and, presumably, for a sociopolitical transformation. It also seems that the Soviets understood this strategy rather well and tried to use it to their own advantage. The Soviets recognized that in order to both strengthen their position in international trade and develop their inferior technical base at home they had to find a neutral way of interacting with the West. Here cooperation in policy sciences, or soft technologies, was clearly a window of opportunity for the Soviets to at least try to gain access to the hard, embargoed technologies. I therefore suggest that Soviet discourses on the STR and the US modernization theory enabled the opposing regimes to identify areas of common interest. In the following chapters I show how Gvishiani used his institutional authority to define certain research subjects as beyond censorship, politically neutral, and therefore eligible for East-West circulation and Cold War competition. In so doing Gvishiani opened up and managed those few points of passage across the Iron Curtain, be they institutions such as IIASA or less formal, personal links like the Club of Rome. Following Rigby, Stephen Fortescue suggests that a Soviet administrator’s first duty was to fulfill tasks, which generated a degree of legitimacy for the Soviet system. This obser-
vation can indeed be applied to explain the role and impact of Gvishiani, because it is quite certain that Gvishiani never intended to erode the Iron Curtain or undermine the Soviet regime. His goal was to make East-West transfer possible and controllable, but in this respect, as I will detail, the outcomes significantly exceeded the original expectations.