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The Crisis of Industrial Statism and the Collapse of the Soviet Union

When the Soviet Union will produce 50 million tons of pig iron, 60 million tons of steel, 500 million tons of coal, and 60 million tons of oil we will be guaranteed against any misfortune.

Stalin, Speech in February 1946[1]

The contradiction which became apparent in the 1950s, between the development of the production forces and the growing needs of society on the one hand, and the increasingly obsolete productive relations of the old system of economic management on the other hand, became sharper with every year. The conservative structure of the economy and the tendencies for extensive investment, together with the backward

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This chapter was researched, elaborated, and written jointly with Emma Kiselyova. It relies mainly on two sets of information. The first is the fieldwork research I conducted between 1989 and 1996 in Moscow, Zelenograd, Leningrad, Novosibirsk, Tyumen, Khabarovsk, and Sakhalin in the framework of research programs of the Programa de Estudios Rusos, Universidad Autonoma de Madrid, and of the University of California's Pacific Rim Program, in cooperation with: the Russian Sociological Association; the Institute of Economics and Industrial Engineering, Russian Academy of Sciences, Siberian Branch; and the Center for Advanced Sociological Study, Institute of Youth, Moscow. Four major research projects were co-directed by myself with O.I. Shkaratan, V.I. Kuleshov, S. Natalushko, and with E. Kiselyova and A. Granberg, respectively. Specific references to each research project are given in the footnotes corresponding to each subject. I thank all my Russian colleagues for their essential contribution to my understanding of the Soviet Union, but I certainly exonerate them from any responsibility for my mistakes and personal interpretation of our findings. The second set of information on which this chapter is based refers to documentary, bibliographical, and statistical sources, primarily collected and analyzed by Emma Kiselyova. I also wish to acknowledge the thorough and detailed comments provided on the draft of this chapter by Tatyana Zaslavskaya, Gregory Grossman, and George Breslauer.

1 Cited by Menshikov (1990: 72).

system of economic management gradually turned into a brake and an obstacle to the economic and social development of the country.

Abel Aganbegyan, *The Economic Challenge of Perestroika*, p. 49

The world economy is a single organism, and no state, whatever its social system or economic status, can normally develop outside it. This places on the agenda the need to devise a fundamentally new machinery for the functioning of the world economy, a new structure of the international division of labor. At the same time, the growth of the world economy reveals the contradictions and limits inherent in the traditional type of industrialization.

Mikhail Gorbachev, Address to the United Nations, 1988[2]

We will realize one day that we are in fact the only country on Earth that tries to enter the twenty-first century with the obsolete ideology of the nineteenth century.

Boris Yeltsin, *Memoirs*, 1990, p. 245[3]

The sudden collapse of the Soviet Union, and with it the demise of the international communist movement, raises an historical enigma: why, in the 1980s, did Soviet leaders feel the urgency to engage in a process of restructuring so radical that it ultimately led to the disintegration of the Soviet state? After all, the Soviet Union was not only a military superpower, but also the third largest industrial economy in the world, the world's largest producer of oil, gas, and rare metals, and the only country that was self-reliant in energy resources and raw materials. True, symptoms of serious economic flaws had been acknowledged since the 1960s, and the rate of growth had been decreasing since 1971 to reach a standstill by 1980. But Western economies have experienced a slowdown trend in productivity growth, as well as negative economic growth at some points in the past two decades, without suffering catastrophic consequences. Soviet technology seems to have lagged behind in some critical areas, but overall, Soviet science maintained its level of excellence in fundamental fields: mathematics, physics, chemistry, with only biology having some difficulty in recovering from Lysenko's follies. The diffusion of this scientific capacity in technological upgrading did not seem out of reach, as the advance of the Soviet space program over NASA's dismal performance of the 1980s seems to indicate. Agriculture continued to be in permacrisis, and shortages of consumer goods were customary, but exports of energy

2 Reprinted in a special supplement of *Soviet Life*, February 1989, and Tarasulo (1989: 331).
3 Our translation into English.

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and materials, at least until 1986, were providing a hard currency cushion for remedial imports, so that the living conditions of Soviet citizens were better, not worse, in the mid-1980s than a decade earlier.

Furthermore, Soviet power was not seriously challenged either internationally or domestically. The world had entered an era of relative stability in the acknowledged spheres of influence between the superpowers. The war in Afghanistan was taking its toll in human suffering, in political image, and in military pride, but not to a greater level than that of the damage inflicted by the Algerian War on France or the Vietnam War on the United States. Political dissidence was limited to small intellectual circles, as respected as isolated; to Jewish people wanting to emigrate; and to kitchen gossip, a deeply rooted Russian tradition. Although there were a few instances of riots and strikes, generally associated with food shortages and price increases, there were no real social movements to speak of. Oppression of nationalities and ethnic minorities was met with resentment, and in the Baltic republics with open anti-Russian hostility, but such feelings were rarely articulated in collective action or in parapolitical opinion movements.

People were dissatisfied with the system, and expressed their withdrawal in different forms: cynicism, minor larceny at the workplace, absenteeism, suicide, and widespread alcoholism. But with Stalinist terror long superseded, political repression was limited and highly selective, and ideological indoctrination had become more of a bureaucratic ritual than an ardent inquisition. By the time the long Brezhnevian rule had succeeded in establishing normalcy and boredom in the Soviet Union, people had learned to cope with the system, going on with their lives, making the best of it, as far away as possible from the hallways of the state. Although the structural crisis of Soviet statism was brewing in the cauldrons of history, few of its actors seem to have realized it. The second Russian revolution, which dismantled the Soviet empire, so ending one of the most daring and costly human experiments, may be the only major historical change brought about without the intervention of social movements and/or without a major war. The state created by Stalin seems to have intimidated its enemies, and succeeded in cutting off the rebellious potential of society for a long period.

The veil of historical mystery is even thicker when we consider the process of reform under Gorbachev. How and why did this process go out of control? After all, against the simplistic image conveyed in the Western press, the Soviet Union, and before it Russia, had gone "from one *perestroika* to another," as Van Regemorter entitles his insightful historical analysis of reform processes in Russia.[4] From the New

4 Van Regemorter (1990).

Economic Policy of the 1920s to Kosygin's reforms of economic management in the late 1960s, passing through Stalin's dramatic restructuring of the 1930s, and the revisionism of Khrushchev in the 1950s, the Soviet Union had progressed/regressed by leaps and bounds, making a systemic feature of alternating between continuity and reform. Indeed, this was the specific way in which the Soviet system responded to the issue of social change, a necessary matter for all durable political systems. Yet, with the major exception of Stalin's ruthless ability to constantly rewrite the rules of the game in his favor, the party apparatus was always able to control the reforms within the limits of the system, proceeding when necessary to political purges and changes of leadership. How, in the late 1980s, could such a veteran, shrewd party, hardened in endless battles of managed reform, lose political control to the point of having to resort to a desperate, hurried coup that ultimately precipitated its demise?

My hypothesis is that the crisis that prompted Gorbachev's reforms was different in its historical nature from the preceding crises, thus impinging this difference on the reform process itself, making it riskier, and eventually uncontrollable. I contend that the rampant crisis that shook the foundations of the Soviet economy and society from the mid-1970s onwards was the expression of the structural inability of statism and of the Soviet variant of industrialism to ensure the transition towards the information society.

By statism, I understand a social system organized around the appropriation of the economic surplus produced in society by the holders of power in the state apparatus, in contrast to capitalism, in which surplus is appropriated by the holders of control in economic organizations (see volume I, prologue). While capitalism is oriented toward profit-maximizing, statism is oriented toward power-maximizing; that is, toward increasing the military and ideological capacity of the state apparatus to impose its goals on a greater number of subjects and at deeper levels of their consciousness. By industrialism, I mean a mode of development in which the main sources of productivity are the quantitative increase of factors of production (labor, capital, and natural resources), together with the use of new sources of energy. By informationalism, I mean a mode of development in which the main source of productivity is the qualitative capacity to optimize the combination and use of factors of production on the basis of knowledge and information. The rise of informationalism is inseparable from a new social structure, the network society (see volume I, chapter 1). The last quarter of the twentieth century was marked by the transition from industrialism to informationalism, and from the industrial society to the network society, both for capitalism and statism, in a process that is

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concomitant with the information technology revolution. In the Soviet Union, this transition required measures that undermined the vested interests of the state's bureaucracy and party's *nomenklatura*. Realizing how critical it was to ensure the transition of the system to a higher level of productive forces and technological capacity, the reformers, led by Gorbachev, took the gamble of appealing to society to overcome the *nomenklatura*'s resistance to change. *Glasnost* (openness) displaced *uskorenie* ([economic]acceleration) at the forefront of *perestroika* (restructuring). And history has shown that once Russian society comes into open political ground, because it has so long been repressed, it refuses to mold to pre-packaged state policies, takes a political life of its own, and becomes unpredictable and uncontrollable. This is what Gorbachev, in the tradition of Stolypin, learned again at his expense.

Furthermore, opening up political expression for Soviet society at large unleashed the contained pressure of national identities – distorted, repressed, and manipulated under Stalinism. The search for sources of identity different from the fading communist ideology led to the fracturing of the still fragile Soviet identity, decisively undermining the Soviet state. Nationalism, including Russian nationalism, became the most acute expression of conflicts between society and the state. It was the immediate political factor leading to the disintegration of the Soviet Union.

At the roots of the crisis that induced *perestroika* and triggered nationalism was the incapacity of Soviet statism to ensure the transition to the new informational paradigm, in parallel to the process that was taking place in the rest of the world. This is hardly an original hypothesis. Indeed, it is the application of an old Marxian idea, according to which specific social systems may stall the development of productive forces, admittedly presented here with an ironic historical twist. I hope that the added value of the analysis submitted to the reader's attention in the following pages will be in its specificity. Why was statism structurally incapable of proceeding with the necessary restructuring to adapt to informationalism? It is certainly not the fault of the state *per se*. The Japanese state, and, beyond the shores of the Sea of Japan, the developmental state, whose origins and feats are analyzed elsewhere (see chapter 4), have been decisive instruments in fostering technological innovation and global competitiveness, as well as in transforming fairly traditional countries into advanced information societies. To be sure, statism is not equivalent to state interventionism. Statism is a specific social system oriented toward the maximization of state power, while capital accumulation and social legitimacy are subordinated to such an overarching goal. Soviet

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communism (like all communist systems) was built to ensure total control by the party over the state, and by the state over society via the twin levers of a centrally planned economy and of Marxist–Leninist ideology enforced by a tightly controlled cultural apparatus. It was this specific system, not the state in general, that proved incapable of navigating the stormy waters of historical transition between industrialism and informationalism. The whys, hows, and ifs of this statement make the stuff of this chapter.

The Extensive Model of Economic Growth and the Limits of Hyperindustrialism

We have become so used to demeaning accounts of the Soviet economy in recent years that it is often overlooked that, for a long period of time, particularly in the 1950s and until the late 1960s, Soviet GNP grew generally faster than most of the world, albeit at the price of staggering human and environmental costs.[5] To be sure, Soviet official statistics grossly overestimated the growth rate, particularly during the 1930s. The important statistical work of G.I. Khanin,[6] fully recognized only during the 1990s, seems to indicate that Soviet national income between 1928 and 1987 did not grow 89.5 times, as Soviet statistics would make us believe, but 6.9 times. Still, by Khanin's own account (that we should consider the lower limit in the range of estimation: see tables 1.1–1.3 and figures 1.1 and 1.2), average annual growth of Soviet national income was 3.2 percent in the 1928–40 period, 7.2 percent in 1950–60, 4.4 percent in 1960–65, 4.1 percent in 1965–70, and 3.2 percent in 1970–75. After 1975 quasi-stagnation settled in, and growth became negative in 1980–82, and after 1987. Yet, overall, and for most of the existence of the Soviet Union, its economic growth was faster than that of the West, and its pace of industrialization one of the fastest in world history.

Furthermore, a system's performance must be evaluated according to its own goals. From such a perspective, the Soviet Union was for half a century an extraordinary success story. If we put aside (can we

5 See, among other works, Nove (1969/1982); Bergson (1978); Goldman (1983); Thalheim (1986); Palazuelos (1990). For the debate on statistical accuracy in analyzing the Soviet economy, see Central Intelligence Agency (1990b).

6 Khanin (1991a). Khanin has been, for many years, a researcher at the Institute of Economics and Industrial Engineering, Russian Academy of Sciences, Siberian Branch. In addition to the reference cited, which corresponds broadly with his doctoral dissertation, much of his work has been published in the economic journal of the above-mentioned Institute, *EKO*; for example, see issues 1989(4); 1989(10); 1990(1); 1991(2). For a systematic review, in English, of Khanin's decisive contribution to the economic statistics of the Soviet Union, see Harrison (1993: 141–67).

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Table 1.1 Soviet national income growth, 1928–87: alternative estimates (change over period, percentage per year)

Period	*TsSU*[a]	*CIA*	*Khanin*
1928–40	13.9	6.1	3.2[b]
1940–50	4.8	2.0	1.6[c]
1928–50	10.1	4.2	2.5
1950–60	10.2	5.2	7.2
1960–65	6.5	4.8	4.4
1965–70	7.7	4.9	4.1
1970–75	5.7	3.0	3.2
1975–80	4.2	1.9	1.0
1980–85	3.5	1.8	0.6
1985–87	3.0	2.7	2.0
1950–87	6.6	3.8	3.8
1928–87	7.9	3.9	3.3

[a] TsSU: Central Statistical Administration (of the USSR).
[b] 1928–41.
[c] 1941–50.
Sources: compiled by Harrison (1993: 146) from the following sources – TsSU; Khanin: net material product, calculated from Khanin (1991b: 85); CIA: GNP, calculated from CIA (1990a: table A-1)

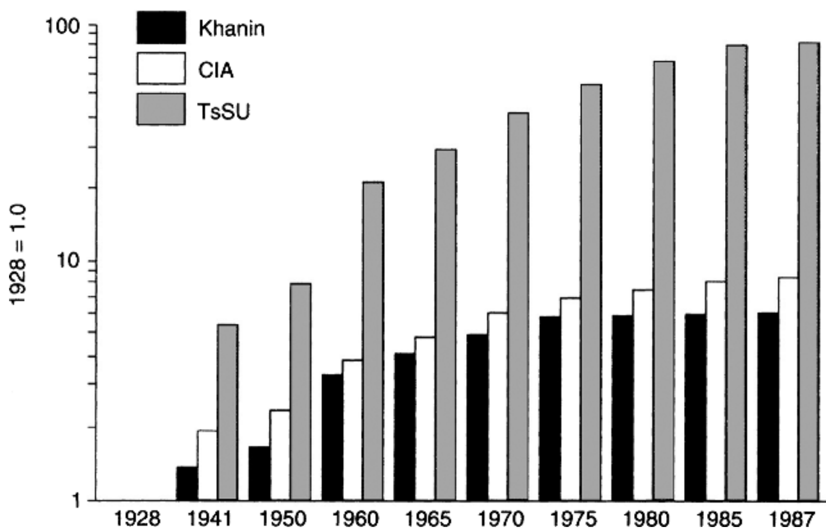

Figure 1.1 Soviet national income, 1928–87: alternative estimates
Source: compiled from figures in table 1.1 by Harrison (1993: 145)

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Table 1.2 Soviet output and inflation, 1928–90 (change over period, percentage per year)

	Real product growth			*Wholesale price inflation*	
	Industry	*Construction*	*National income*	*True*	*Hidden*
TsSU[a]					
1928–40	17.0	–	13.9	8.8	–
1940–50	–	–	4.8	2.6	–
1950–60	11.7	12.3[b]	10.2	− 0.5	–
1960–65	8.6	7.7	6.5	0.6	–
1965–70	8.5	7.0	7.7	1.9	–
1970–75	7.4	7.0	5.7	0.0	–
1975–80	4.4	–	4.2	− 0.2	–
1980–85	–	–	3.5	–	–
1985–87	–	–	3.0	–	–
1928–87	–	–	7.9	–	–
Khanin					
1928–41	10.9	–	3.2	18.5	8.9
1941–50	–	–	1.6	5.9	3.2
1950–60	8.5	8.4[b]	7.2	1.2	1.8
1960–65	7.0	5.1	4.4	2.2	1.6
1965–70	4.5	3.2	4.1	4.6	2.6
1970–75	4.5	3.7	3.2	2.3	2.3
1975–80	3.0	–	1.0	2.7	2.9
1980–85	–	–	0.6	–	–
1985–87	–	–	2.0	–	–
1928–87	–	–	3.3	–	–
1980–82	–	–	− 2.0	–	–
1982–88	–	–	1.8	–	–
1988–90[c]	–	–	− 4.6	–	–

[a] TsSU: Central Statistical Administration (of the USSR).
[b] 1955–60.
[c] Preliminary.
Sources: compiled by Harrison (1993:147) from the following sources – TsSU; 1928–87: 'National income' calculated from Khanin (1991b: 85); 'other columns' calculated from Khanin (1991a: 146, industry; 167, construction; 206, 212, wholesale prices; 1980–90: calculated from Khanin (1991b: 29)

really?) the tens of millions of people (60 million?) who died as a result of revolution, war, famine, forced labor, deportation, and executions; the destruction of national cultures, history, and traditions (in Russia and the other republics alike); the systematic violation of human rights

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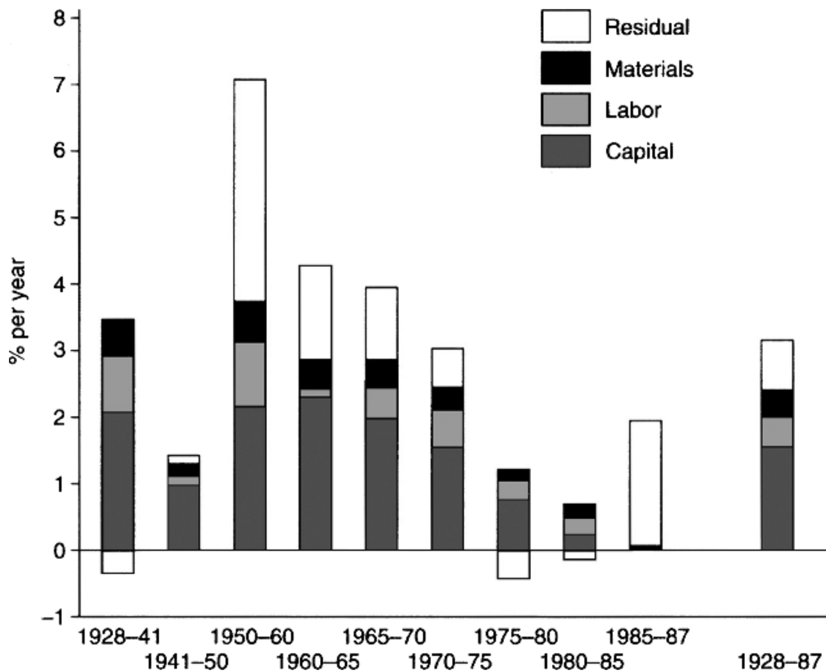

Figure 1.2 Soviet national income: role of inputs in output growth
Source: compiled from figures of Khanin (1991a, b) by Harrison (1993: 149)

and political freedom, the massive degradation of a rather pristine natural environment; the militarization of the economy and the indoctrination of society; if, for one analytical moment, we can view the historical process with Bolshevik eyes, it can only be amazement at the heroic proportions of the communist saga. In 1917, the Bolsheviks were a handful of professional revolutionaries, representing a minority fraction of the socialist movement, itself only a part of the broader democratic movement that enacted the February 1917 Revolution almost exclusively in the main cities of a country whose population was 84 percent rural.[7] Yet, they were able not only to seize power in the October coup, eliminating competition from all political forces, but still to win an atrocious revolutionary war against the remnants of the Tsarist army, the White Guards, and foreign expeditionary forces. They also liquidated in the process the anarchist Makhno's peasant army and Kronstadt's revolutionary sailors. Moreover, in spite of a narrow social base in a meager urban industrial proletariat, barely

7 See, among other works, Trotsky (1965); Conquest (1968, 1986); Cohen (1974); Antonov-Ovseyenko (1981); Pipes (1991).

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Table 1.3 Soviet inputs and productivity, 1928–90 (change over period, percentage per year)

	Stock of fixed assets	*Capital productivity*	*Output per worker*	*Materials intensity*
TsSU[a]				
1928–40	8.7	4.8	11.9	– 0.3
1940–50	1.0	3.1	4.1	– 0.2
1950–60	9.4	0.8	8.0	– 0.5
1960–65	9.7	– 3.0	6.0	– 0.2
1965–70	8.2	– 0.4	6.8	– 0.4
1970–75	8.7	– 2.7	4.6	0.6
1975–80	7.4	– 2.7	3.4	0.0
1980–85	6.5	– 3.0	3.0	0.0
1985–87	4.9	– 2.0	3.0	0.4
1928–87	7.2	0.5	6.7	– 0.2
Khanin				
1928–41	5.3	– 2.0	1.3	1.7[b]
1941–50	2.4	– 0.8	1.3	1.1
1950–60	5.4	1.6	5.0	– 0.5
1960–65	5.9	– 1.4	4.1	0.4
1965–70	5.1	– 1.0	3.0	0.4
1970–75	3.9	– 0.6	1.9	1.0
1975–80	1.9	– 1.0	0.2	1.0
1980–85	0.6	0.0	0.0	1.0
1985–87	0.0	2.0	2.0	– 0.5
1928–87	3.9	– 0.6	2.2	0.8
1980–82	1.5	– 3.6	– 2.5	2.5
1982–88	1.9	– 0.2	1.4	0.7
1988–90[c]	– 0.5	– 4.1	– 4.1	3.4

[a] TsSU: Central Statistical Administration (of the USSR).
[b] 1.7–2%.
[c] Preliminary.
Sources: compiled by Harrison (1993: 151) from the following sources – TsSU; 1928–87: calculated from Khanin (1991b: 85); 1980–90: calculated from Khanin (1991b: 29)

joined by scores of intelligentsia, the Bolsheviks went on to build in record time, and despite international isolation, an industrialized economy that was developed enough in just two decades to provide the military hardware capable of crushing the Nazi war machine. In a relentless determination to overtake capitalism, together with a somewhat understandable defensive paranoia, the Soviet Union, by and large a poor country, managed to become quickly a nuclear power, to

maintain strategic military parity with the United States, and to pull ahead in the space race by 1957, to the shocked astonishment of Western governments which had believed their own mythology about communism's inability to build an advanced industrial economy.

Such undeniable feats were accomplished at the price of deforming the economy forever.[8] At the root of Soviet economic logic was a set of cascading priorities.[9] Agriculture had to be squeezed of its products to subsidize industry and feed cities, and emptied of its labor to provide industrial workers.[10] Consumer goods, housing, and services had to concede priority to capital goods, and to the extraction of raw materials, so that socialism could rapidly be made self-sufficient in all indispensable production lines. Heavy industry itself was put at the service of military industrial production, since military might was the ultimate purpose of the regime and the cornerstone of statism. The Leninist-Stalinist logic, which considered sheer force as the *raison d'être* of the state – of all states in the final analysis – permeated down through the entire institutional organization of the Soviet economy, and reverberated throughout the whole history of the Soviet Union under various ideological forms.

To enforce such priorities under the strictest conditions, to "bring politics to the command posts of the economy," as the communist slogan runs, a centrally planned economy was established, the first of its genre in world history, if we except some centrally controlled preindustrial economies. Obviously, in such an economy, prices are simply an accounting device, and they cannot signal any relationship between supply and demand.[11] The entire economy is thus moved by vertical administrative decisions, between the planning institutions and the ministries of execution, and between the ministries and the production units.[12] Links between production units are not really horizontal since their exchanges have been preestablished by their respective parent administrations. At the core of such central planning, two institutions shaped the Soviet economy. The first was Gosplan, or State Board for Planning, which established the goals for the whole economy in five-year periods, then proceeded to calculate implementation measures for each product, for each production unit, and for the whole country, year by year, in order to assign output targets and supply quotas to each unit in industry, construction,

8 Aganbegyan (1988).
9 Menshikov (1990).
10 Johnson and McConnell Brooks (1983).
11 For a theoretical understanding of the logic of the centrally planned economy, see the classic work of Janos Kornai (1986, 1990).
12 Nove (1977); Thalheim (1986); Desai (1989).

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agriculture, and even services. Among other details, "prices" for about 200,000 products were centrally set each year. No wonder that Soviet linear programming was among the most sophisticated in the world.[13]

The other major economic institution, less notorious but more significant in my opinion, was Gossnab (State Board for Materials and Equipment Supply), which was in charge of controlling all supplies for every transaction in the whole country, from a pin to an elephant. While Gosplan was preoccupied with the coherence of its mathematical models, Gossnab, with its ubiquitous antennae, was in the real world of authorizing supplies, actually controlling flows of goods and materials, and therefore presiding over shortages, a fundamental feature of the Soviet system. The Gosbank, or central bank, never played a substantial economic role, since credit and money circulation were the automatic consequence of Gosplan decisions, as interpreted and implemented by the state in accordance with the party's central committee instructions.[14]

To accomplish fast industrialization, and to fulfill the targets of plans, the Soviet state resorted to full mobilization of human and natural assets of an immense, resource-rich country, accounting for one-sixth of the earth's surface.[15] This extensive model of economic growth was characteristic of the Soviet Union not only during the phase of primitive accumulation in the 1930s,[16] but in the post-Stalin period.[17] Thus, according to Aganbegyan,

> in a typical post-war five-year period, usually in these five years the basic application of funds and capital investment increased one and a half times, the extraction of fuel and raw materials by 25–30 percent, and a further 10 to 11 million workers were recruited in the national economy, a large proportion of whom moved into new branches of production. This was characteristic of the whole period from 1956 to 1975. The last five-year period which involved a large growth in the use of resources was 1971–75. In that period a composite index for the increase of all resources used in production showed a growth of 21 percent.[18]

Thus, the Soviet model of economic growth was typical of an early industrial economy. Its rate of growth was a function of the size of capital investment and labor inputs, with technical change playing a minor role, thus potentially inducing diminishing returns as the supply

13 Cave (1980).
14 Menshikov (1990).
15 Jasny (1961); Nove (1977); Ellman and Kontorovich (1992).
16 Wheatcroft et al. (1986).
17 Palazuelos (1990).
18 Aganbegyan (1988: 7).

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Table 1.4 Growth rates of Soviet GNP, workforce, and capital stock, with investment–GNP and output–capital ratios

	Growth rate of				
Year	*GNP (%)*	*Workforce in man hours (%)*	*Capital stock (%)*	*Gross investment–GNP ratio (%)*	*Output–capital ratio (average)*
1951	3.1	− 0.1	7.7		0.82
1952	5.9	0.5	7.5		0.81
1953	5.2	2.1	8.6		0.78
1954	4.8	5.1	10.5		0.74
1955	8.6	1.6	10.6		0.73
1956	8.4	1.9	10.3		0.72
1957	3.8	0.6	9.9		0.68
1958	7.6	2.0	10.0		0.66
1959	5.8	− 1.0	9.7		0.64
1960	4.0	− 0.3	9.2	17.8	0.61
1961	5.6	− 0.7	8.9	18.1	0.59
1962	3.8	1.4	8.8	17.9	0.56
1963	− 1.1	0.7	8.8	19.3	0.51
1964	11.0	2.9	8.6	19.1	0.52
1965	6.2	3.5	8.2	18.9	0.51
1966	5.1	2.5	7.7	19.2	0.50
1967	4.6	2.0	7.2	19.9	0.49
1968	6.0	1.9	7.1	20.2	0.48
1969	2.9	1.7	7.2	20.3	0.46
1970	7.7	2.0	7.8	21.0	0.46
1971	3.9	2.1	8.1	21.7	0.45
1972	1.9	1.8	8.2	22.9	0.42
1973	7.3	1.5	8.0	22.3	0.42
1974	3.9	2.0	7.8	23.0	0.40
1975	1.7	1.2	7.6	24.6	0.38
1976	4.8	0.8	7.2	24.5	0.37
1977	3.2	1.5	7.0	24.6	0.36
1978	3.4	1.5	6.9	25.2	0.35
1979	0.8	1.1	6.7	25.2	0.33
1980	1.4	1.1	6.5	25.4	0.31

GNP and investment (information for which is available from 1960) are in terms of 1970 rubles, whereas capital stock data are in terms of 1973 rubles. The output–capital ratios are average ratios, derived by dividing the absolute values of output and capital during a given year. The latter is the average of the capital stock at the beginning of two consecutive years.
Source: compiled and elaborated by Desai (1987: 17).

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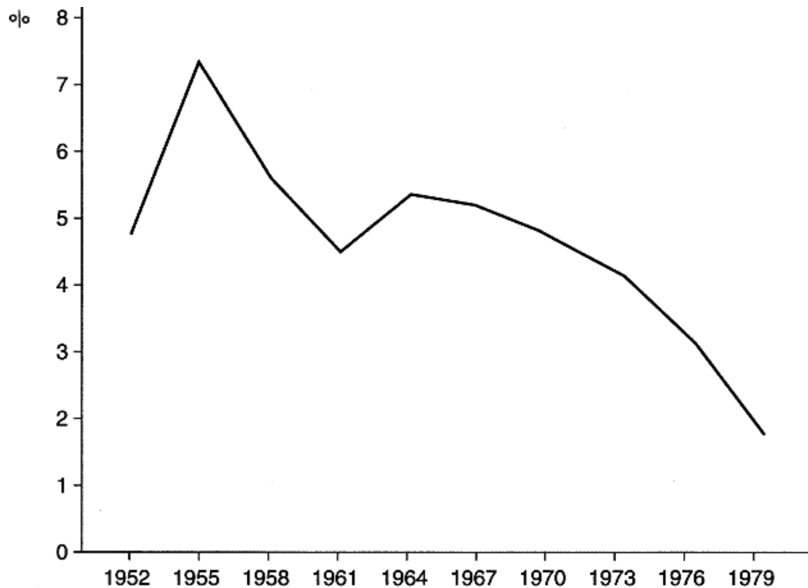

Figure 1.3 Soviet GNP growth rates, 1951–80. The annual growth rates are averaged over three years and plotted at the mid-year of each period.
Source: elaborated from table 1.4, col. 2

of resources wears down (see table 1.4 and figure 1.3). In econometric terms, it was a model of growth characterized by a constant elasticity production function with constant returns to scale.[19] Its fate was dependent upon its capacity either to keep absorbing additional resources or else to increase its productivity through technological advance and/or the use of comparative advantages in international trade.

Yet, the Soviet economy developed in autarky, and for a long time in a hostile world environment that generated a siege mentality.[20] Trade was reduced to essential items, and always conditioned, both in imports and exports, by security considerations. Predatory acquisition of additional resources was never really an option for the Soviet Union, even after the Yalta Treaty acknowledged its occupation of Eastern Europe. Its vassal states, from East Germany to Cuba and Vietnam, were considered political pawns rather than economic colonies, some of them (for example, Cuba) being, in fact, very costly for

19 Weitzman (1970: 63), cited by Desai (1987: 63)
20 Holzman (1976); Desai (1987: 163–72; 251–73); Aganbegyan (1988: 141–56); Menshikov (1990: 222–64).

the Soviet budget.[21] Interestingly enough, this priority of political over economic criteria was extended to the relationships between Russia and the non-Russian Soviet republics. The Soviet Union is a unique case of national domination in which there was reverse discrimination in the regional share of investment and resources, with Russia distributing to the other republics far more resources than it obtained from them.[22] Given the traditional Soviet distrust of foreign immigration, and with the belief in the unlimited potential of resources in the Asian and northern areas of the country, the *economic* emphasis was not on extending geographically the imperial reach but in mobilizing Soviet resources more fully, both natural and human (putting women to work outside the home; trying to make people work harder).

The shortcomings of this extensive model of economic growth followed directly from those features that assured its historical success in its politically assigned goals. The sacrifice of agriculture, and the brutal policy of enforced collectivization, hampered forever the productivity of the countryside, not only in cultivation, but in harvesting, in storing, in distributing.[23] Very often, crops were left to rot in the fields, or were spoiled in warehouses, or on the long journey to distant silos, located as far as possible from peasant villages to prevent pillage by a distrusted, resentful rural population. Tiny private plots of land systematically contributed much higher yields, but they were too small, and too often submitted to controls and abuses, to make up for the difference in an otherwise ruinous agriculture. As the Soviet Union moved from a state of emergency to a society trying to feed its citizens, agricultural deficits became an onerous burden on the state budget and on Soviet imports, gradually taking away resources from industrial investment.[24]

The centrally planned economy, extremely wasteful, yet effective in mobilizing resources on priority targets, was also the source of endless rigidities and imbalances that decreased productivity as the economy became more complex, technologically advanced, and organizationally diversified. When the population was allowed to express consumption preferences above the level of survival, when technological change forced the transformation of established work procedures, and when the sheer size of the economy, functionally interdependent on a vast geographical scale, eluded the programming skills of Gosplanners, the command economy began to be plagued by systemic

21 Marrese and Vanous (1983). For a critique (which I find questionable) of this analysis, see Desai (1987: 153–62).

22 See, among other sources, Korowkin (1994).

23 Volin (1970); Johnson and McConnell Brooks (1983); Scherer and Jakobson (1993).

24 Goldman (1983, 1987).

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dysfunctions in the practice of implementing the plan. Vertical, heavy-handed bureaucracies, stranded in an age of flexibility, became increasingly aloof, wandering along the paths of their own interpretation of the plan's assignments.

This system also discouraged innovation at a time of fundamental technological change, in spite of the vast resources that the Soviet Union dedicated to science and research and development (R&D), and in spite of having a higher proportion of scientists and engineers in the working population than any other major country in the world.[25] Because innovation always entails risk and unpredictability, production units at every level were systematically discouraged from engaging in such risky ventures. Furthermore, the accounting system of the planned economy represented a fundamental obstacle to productivity-enhancing innovation, both in technology and in management. Let us explain. The performance of each unit was measured in the gross value of production measured in rubles. This value of output (or *valovaya produktsiya, val*) included the value of all inputs. The comparison of *val* between years determined the level of fulfillment of plan and, eventually, the premium for managers and workers. Thus, there was no interest in reducing the value of inputs in a given product, for instance by using better technology or better management, if the *val* system could not translate such improvements into higher value added.[26] Furthermore, the vertical organization of production, including scientific production, made it extremely difficult to establish synergistic linkages between production and research. The Academy of Sciences remained by and large isolated from industry, and each ministry had its own research support system, often separate from that of other ministries, and rarely working in cooperation. Piecemeal, *ad hoc* technological solutions were the rule in the Soviet economy at the very moment when uncharted technological innovation was breaking ground in advanced capitalist economies at the dawn of the Information Age.[27]

Similarly, the priorities politically assigned to each branch and sector of the economy allowed for the realization of the Communist party's goals, not the least being the achievement of superpower status in about three decades. But systemic priorities led to systemic imbalances between sectors, and chronic lack of adjustment between supply and demand in most products and processes. Since prices could not reflect such imbalances because they were set by administrative

25 Aganbegyan (1988).
26 Goldman (1987).
27 Golland (1991).

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decision, the gap resulted in shortages. Shortages of everything became a structural feature of the Soviet economy.[28] And with shortages also came the development of methods to deal with shortages, from the consumer to the store, from the manufacturer to the supplier, and from one manager to another. What started as a pragmatic way of circumventing shortages, in a network of reciprocal favors, ended up as a vast system of informal economic exchange, increasingly organized on the basis of illegal payments, either in money or in goods. Since allegiance to and protection from supervising bureaucrats was a prerequisite for the system to work outside the rules on such a large scale, the party and the state became immersed in a gigantic shadow economy, a fundamental dimension of the Soviet system, which has been thoroughly investigated by Gregory Grossman, one of the leading scholars on the Soviet economy.[29] It has been sometimes claimed that such a shadow economy smoothed the rigidities of the system, creating a quasi-market mechanism that permitted the real economy to operate. In fact, as soon as managers and bureaucrats discovered the benefit of the shortage-ridden economy, shortages were constantly induced by strictly applying the rigid rules of the plan, thus creating the need for the softening of the system – at a price. The shadow economy, which grew considerably during the 1970s with the compliance of the party's *nomenklatura*, deeply transformed Soviet social structure, disorganizing and making more costly a planned economy that, by definition, was no longer allowed to plan, since the dominant interest of "gatekeepers" throughout the administrative apparatus was to collect their shadow rents rather than to receive their bonuses from the fulfillment of planned targets.[30]

The international isolation of the Soviet economy was functional to the system because it made possible the operation of the plan (not feasible practically in an open economy) and because it insulated production from external competitive pressures. But precisely for the same reason, Soviet industry and agriculture became unable to compete in the world economy, just at the historical moment of formation of an interdependent, global system. When the Soviet Union was forced to import goods, whether advanced machinery, consumer goods, or grain to feed cattle, it discovered the damaging limits of its scarce capacity to export manufactured goods in exchange. It resorted to massive exports of oil, gas, materials, and precious metals, which by the 1980s represented 90 percent of Soviet exports to the capitalist

28 On the analysis of systemic generation of shortages in the command economy, see Kornai (1980).
29 Grossman (1977).
30 Grossman (1989).

world, with oil and gas alone accounting for two-thirds of such exports.[31] This external trade structure, typical of underdeveloped economies, is susceptible to the secular deterioration of commodity prices *vis-à-vis* the prices of manufactured goods, and is excessively vulnerable to fluctuations in the price of oil in world markets.[32] This dependence on exports of natural resources diverted energy resources and raw materials from investment in the Soviet economy, further undermining the extensive model of growth. On the other hand, when the price of oil fell, in 1986, the import capacity of the economy was severely damaged, increasing shortages of consumer goods and agricultural inputs.[33]

Yet, perhaps the most devastating weakness of the Soviet economy was precisely what was the strength of the Soviet state: an over-extended military–industrial complex and an unsustainable defense budget. In the 1980s, Soviet defense expenditure could be evaluated at about 15 percent of Soviet GNP, more than twice the equivalent proportion in the US at the peak of Reagan's defense build up. Some estimates put it at an even higher level, at about 20–25 percent of GNP.[34] About 40 percent of industrial production was defense related, and the production of enterprises that were engaged in the military–industrial complex reached about 70 percent of all industrial production. But the damage of such a gigantic military industry to the civilian economy went deeper.[35] Its enterprises concentrated the best talent in scientists, engineers, and skilled workers, and were also provided with the best machinery, and access to technological resources. They had their own research centers, the most technologically advanced in the country, and they had priority in the allocation of import quotas. Thus, they absorbed the best of Soviet industrial, human, and technological potential. And once these resources were allocated to the military sector, they were hardly returned to civilian production or applications. Technological spin-offs were a rarity, and the proportion of civilian goods to the total production of military enterprises was usually lower than 10 percent. Even so, most television sets and other electronic consumer goods were produced by military enterprises, as a by-product of their activity. Needless to say, attention to consumer satisfaction was minimal, given the organic dependence of such enterprises on the Ministry of Defense. The military–industrial sector operated as a black hole in the Soviet economy, absorbing most of the creative energy

31 Menshikov (1990).
32 Veen (1984).
33 Aganbegyan (1988).
34 Steinberg (1991).
35 Rowen and Wolf (1990); Cooper (1991).

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of society and making it disappear in an abyss of invisible inertia. After all, the militarization of the economy is a logical attribute of a system that assigns absolute priority to the power of the state for the sake of the power of the state. That an impoverished, massively rural, and barely developed country like the Soviet Union at the beginning of the century could become one of the greatest military powers in history in just three decades had necessarily to take its toll on the Soviet civilian economy and on its citizens' everyday life.

The Soviet leadership was not unaware of the contradictions and bottlenecks that were developing in the planned economy. Indeed, as mentioned above, Soviet history has been dominated by periodic efforts of reform and restructuring.[36] Khrushchev tried to bring the achievements of socialism closer to people's homes by improving agricultural production, and giving more attention to consumer goods, housing, and social benefits, especially pensions.[37] Furthermore, he envisaged a new kind of economy, able to unleash the full development of productive forces. Science and technology would be put to the service of economic development, and the natural resources of Siberia, the far east and the central Asian republics would be brought to fruition. In the wake of the enthusiasm generated by the successful launching of the first sputniks, the 21st Party Congress, extrapolating on the basis of growth indicators, predicted that the USSR would reach economic parity with the United States in 20 years. Accordingly, the overall strategy to vanquish capitalism shifted from the inevitability of military confrontation to the stated policy of peaceful coexistence and peaceful competition. Khrushchev actually believed that the demonstration effect of the achievements of socialism would ultimately bring communist parties and their allies to power in the rest of the world.[38] Yet, before engaging the international communist movement in such a grandiose perspective (contested by Chinese communists), he knew that changes had to be made in the bureaucracy of the Soviet state. With the party hardliners put on the defensive by the revelation of Stalin's atrocities in the 20th Congress, Khrushchev eliminated the economic ministries, limited Gosplan's power, and transferred responsibility to regional economic councils (*sovnarkhozy*). The bureaucracy responded, predictably, by reconstructing informal networks of top-down control and management of scarce resources. The ensuing disorganization of the planning system led to falls in production, and to a substantial slowdown in the

36 Van Regemorter (1990).
37 Gustafson (1981); Gerner and Hedlund (1989).
38 Taibo (1993b).

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growth of agriculture, the core of Khrushchevian reforms. Before Khrushchev could react to the sabotage of his policies, admittedly flawed with excessive voluntarism, the party apparatus staged an internal coup that ended Khrushchev's tenure in 1964. Immediately afterwards, Gosplan's powers were reinstated, and new branch ministries were created, through which planning authorities could enforce their directives.

Economic reform was not completely stalled, but reoriented from the level of state administration to the level of the enterprise. The 1965 Kosygin reforms,[39] inspired by economists Liberman and Nemchinov, gave greater freedom of decision to enterprise managers, and experimented with a price system to pay for resources in production. More attention was also paid to consumer goods (whose production, for the first time, grew faster than that of capital goods in 1966–70). Incentives were provided to agriculture, resulting in a substantial increase in output in the 1966–71 period. Yet, when confronted with the logic of the planned economy, these reforms could not last. Enterprises that improved their productivity by using their newly obtained freedom found themselves assigned higher production quotas the following year. Entrepreneurial managers and workers (as in the enterprise that became the role model of the reforms in 1967, the chemical complex of Shchekino in Tula) felt trapped into being, in fact, punished with an intensification of their work pace while firms that had kept a steady, customary level of production were left alone in their bureaucratic routine. By the early 1970s, Kosygin had lost power, and the innovative potential of the halfhearted reforms faded away.

Yet, the first ten years of the Brezhnev period (1964–75)[40] witnessed moderate economic growth (above 4 percent per year, on average), coupled with political stability, and a steady improvement in the living conditions of the population. The term "stagnation" (*zastoi*), usually applied to the Brezhnev years, does not do justice to the first part of the period.[41] Relative stagnation did not settle in until 1975 onwards, and a zero growth level was reached in 1980. The sources of such stagnation seem to have been structural, and they were the immediate factors prompting Gorbachev's *perestroika*.

Padma Desai has provided empirical evidence, as well as an econometric interpretation, of the retardation in the growth of the Soviet economy (see figure 1.3), whose main reasons seem to be the declining rate of technical change, and the diminishing returns of the extensive

39 Kontorovich (1988).
40 Goldman (1983); Veen (1984); Mitchell (1990).
41 Van Regemorter (1990).

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model of accumulation.[42] Abel Aganbegyan also attributes the slowdown in economic growth to the exhaustion of the model of industrialization based on extensive use of capital, labor, and natural resources.[43] Technological backwardness led to decreasing returns in the oil and gas fields, in the coal mines, in the extraction of iron, and rare metals. The cost of exploring new resources dramatically increased with distance and with the geographical barriers created by the inhospitable conditions in the northern and eastern areas of the Soviet territory. Labor supply dwindled in the Soviet economy as birth rates declined over time, as a result of education and economic development, and as women's incorporation into the labor force was almost complete. Thus, one of the pillars of the extensive model of accumulation, steady quantitative increases in labor, disappeared. Capital inputs were also limited by decreasing returns of investment under the same production function, characteristic of an earlier stage of industrialization. To produce the same quantity, under the new economic conditions, more capital had to be used, as the dramatic decline in output–capital ratio indicates (see table 1.4).

Retardation was also linked to the inherent dynamics and bureaucratic logic of the model of accumulation. Stanislav Menshikov, together with a team of young economists at the Institute of Economics of the Academy of Sciences in Novosibirsk in the 1970s, developed an intersectoral model of the Soviet economy. In his words:

> Economic analysis showed that our investment, production, and distribution decision-making was not, in fact, aimed at increasing the well-being of the population, promoting technological progress and keeping growth rates sufficiently high to maintain economic equilibrium. Rather, decisions were made with a view to maximizing the power of ministries in their struggle to divide up the excessively centralized material, financial, labour, natural, and intellectual resources. Our economic–mathematical analysis showed that the system had an inexorable inertia of its own and was bound to grow more and more inefficient.[44]

This inefficiency became particularly blatant when consumption demands from an increasingly educated, by now self-assured, population, started to put pressure on government, not in the form of social movements challenging the system, but as the loyal expression of the citizens' request for the gradual delivery of promised well-being.[45]

42 Desai (1987).
43 Aganbegyan (1988).
44 Menshikov (1990: 8).
45 Lewin (1988).

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Yet, two major structural problems seemed to impede the ability of the system to reform itself by the 1980s. On the one hand, the exhaustion of the extensive model of economic growth implied the need to shift to a new production equation in which technological change could play a greater role, using the benefits of the unfolding technological revolution to increase substantially the productivity of the whole economy. This required that a share of the surplus could be set aside for social consumption without jeopardizing the updating of the military machine. On the other hand, the excessive bureaucratization of economic management, and the chaotic consequences of its corollary, the growth of the shadow economy, had to be corrected by shaking up the planning institutions, and by bringing under control the parallel circuits of appropriation and distribution of goods and services. On both counts – technological modernization and administrative regeneration – the obstacles to reckon with were formidable.

The Technology Question

In spite of the shortcomings of centralized planning, the Soviet Union did build a mighty industrial economy. When, in 1961, Khrushchev launched to the world the challenge that by the 1980s the USSR would produce more industrial goods than the United States, most Western observers ridiculed the statement, even in the wake of the sputnik shock. Yet, the irony is that, at least according to official statistics, in spite of economic retardation and social disarray, in the 1980s the Soviet Union produced substantially more than the US in a number of heavy industrial sectors: it produced 80 percent more steel, 78 percent more cement, 42 percent more oil, 55 percent more fertilizer, twice as much pig iron, and five times as many tractors.[46] The problem was that, in the meantime, the world's production system had shifted heavily toward electronics and specialty chemicals, and was tilting toward the biotechnology revolution, all areas in which the Soviet economy and technology were lagging substantially.[47] By all accounts and indicators, the Soviet Union missed the revolution in information technologies that took shape in the world in the mid-1970s. In a study I conducted in 1991–3, with Svetlana Natalushko, on the leading firms in microelectronics and telecommunications in Zelenograd (the Soviet Silicon Valley, 25 km from Moscow),[48] the immense technological gap

46 Walker (1986: 53).
47 Amman and Cooper (1986).
48 Castells and Natalushko (1993).

between Soviet and Western electronic technologies became apparent, in spite of the generally high technical quality of the scientific and engineering personnel we interviewed. For instance, even at such a late date, Russian enterprises did not have the capability to design sub-micron chips, and their "clean rooms" were so "dirty" that they could not even produce the most advanced chips they could design. Indeed, the main reason we were given for their technological under-development was the lack of appropriate equipment for semiconductor production. A similar story can be told about the computer industry, which, according to the observations of another study I conducted in the research institutes of the Siberian Branch of the Academy of Sciences in Novosibirsk, in 1990, seemed to be about 20 years behind the American or Japanese computer industry.[49] The PC revolution completely bypassed Soviet technology, as it did in fact with IBM. But, unlike IBM, the Soviet Union took more than a decade to start designing and producing its own clone, suspiciously looking like an Apple One.[50] At the other end of the spectrum, in high-performance computers, which should have been the strong point of a statist technological system, the aggregate peak performance of Soviet machines in 1991 – the highest year of such production in the USSR – was over two orders of magnitude less than that of Cray Research alone.[51] As for the most critical technological infrastructure, the evaluation by Diane Doucette of the Soviet telecommunications system in 1992 also showed its backwardness in relation to any major industrialized nation.[52] Even in key technologies with military applications, by the late 1980s the Soviet Union was well behind the US. In a comparison of military technology between the US, NATO, Japan, and the USSR, conducted by the US Defense Department in 1989, the Soviet Union was the least advanced country in 15 out of 25 technologies evaluated, and was not in parity with the US in any technological field.[53] Malleret and Delaporte's evaluation of military technology also seems to confirm this fact.[54]

Here again, there is no obvious, direct reason for such backwardness. Not only had the Soviet Union a strong scientific basis, and a technology advanced enough to have overtaken the US in the race to space in the late 1950s,[55] but the official doctrine under Brezhnev

49 Castells (1991); for an abridged version of this analysis, see Castells and Hall (1994: ch. 4).
50 Agamirzian (1991).
51 Wolcott and Goodman (1993); see also Wolcott (1993).
52 Doucette (1995).
53 US Department of Defense (1989), compiled and cited by Alvarez Gonzalez (1993).
54 Malleret and Delaporte (1991).
55 *US News and World Report* (1988).

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brought the "scientific and technical revolution" (STR) to the core of Soviet strategy to overtake the West and build communism on a technological foundation spurred by socialist relations of production.[56] Nor was this stated priority a purely ideological discourse. The importance given to the STR was backed by massive investment in science, R&D, and the training of technical personnel, with the result that, by the 1980s, the USSR had more scientists and engineers, relative to the total population, than any other major country in the world.[57]

Thus, we are left anew with the idea that "the system," not the people, and not the lack of material resources devoted to scientific and technical development, undermined its foundations, provoking technological retardation precisely at the critical moment of a major paradigm shift in the rest of the world. Indeed, until the early 1960s there is no evidence of substantial Soviet lagging behind in the main technological fields, with the major exception of biological sciences, devastated by Lysenkoism.[58] But, as soon as discontinuity took place in technological evolution, as it did in the West from the early 1970s, scientific research could not help technological progress, and efforts at learning through reverse engineering engaged the Soviet Union in a doomed race against the acceleration of technological innovation in America and Japan.[59] "Something" happened during the 1970s that induced technological retardation in the USSR. But this "something" happened not in the Soviet Union, but in the advanced capitalist countries. The characteristics of the new technological revolution, based on information technologies and on the rapid diffusion of such technologies in a wide range of applications, made it extremely difficult for the Soviet system to assimilate and to adapt them for its own purposes. It was not the crisis of the Brezhnevian stagnation period that hampered technological development. Rather, it was the incapacity of the Soviet system actually to integrate the much-vaunted "scientific and technical revolution" that contributed to its economic stagnation. Let us be specific about the reasons for this incapacity.

The first reason was the absorption of economic resources, science and technology, advanced machinery, and brainpower into the industrial–military complex. This vast universe, which accounted in the early 1980s for about two-thirds of industrial production, and received, together with the armed forces, between 15 and 20 percent

56 Afanasiev (1972); Dryakhlov et al. (1972). For an English summary of these themes, see Blyakhman and Shkaratan (1977).
57 See Fortescue (1986); Smith (1992: 283–309).
58 Thomas and Kruse Vaucienne (1977); Fortescue (1986).
59 Goldman (1987).

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of Soviet GNP,[60] was a wasteful repository for science and technology: it received the best talent and best equipment available, returning to the civilian economy only mediocre electrical appliances and consumer electronics goods.[61] Few of the advanced technologies that were discovered, used, or applied in the military–industrial complex were diffused into society, mainly for security reasons, but also for the sake of controlling information which made the military enterprises virtual oligopolies of advanced industrial know-how. Furthermore, the logic of military enterprises, in the East as in the West, was and is, overall, to please their only client: the Defense Ministry.[62] Thus, technologies were developed, or adapted, to fit the extremely specific requirements of military hardware, which explains the considerable difficulties of any conversion project both in Russia and in the US. Who needs, in the industrial or consumer market, a chip designed to withstand a nuclear blast? What saved American electronics defense industries from rapid obsolescence was their relative openness to competition from other American companies, as well as from Japanese electronics producers.[63] But Soviet enterprises, living in a closed economy, without incentive to export, and with no other purpose than to follow the specifications of a not necessarily up-to-date Ministry of Defense, were engaged in a technological trajectory increasingly removed from the needs of society and from the processes of innovation of the rest of the world.[64]

The logic imposed by military requirements on technological performance was largely responsible for the demise of Soviet computers, which were not far behind their Western equivalents between the mid-1940s and mid-1960s, and were a key element in the progress made by the early Soviet space program.[65] Computer design began at the Academy of Sciences in Kiev in the 1940s, under the direction of Professor S.A. Lebedev.[66] The first prototype, the MESM, was built in 1950, only four years after the first American computer, the UNIAC. From such prototypes developed, in the late 1950s and 1960s, a whole family of mainframes: the M-20, BASM-3M, BASM-4, M-220, and M-222. This line of development reached its peak in 1968 with the

60 Sapir (1987); Audigier (1989); Alexander (1990: 7620); Steinberg (1991).

61 Alvarez Gonzalez (1993).

62 Fieldwork by Manuel Castells, Svetlana Natalushko, and collaborators in electronics firms in Zelenograd (1991–3). See Castells and Natalushko (1993). On the problems of technological spinoffs from the defense industry in Western economies, see Kaldor (1981).

63 Sandholtz et al. (1992).

64 Cooper (1991).

65 Fieldwork by Manuel Castells in Novosibirsk (1990) and in Zelenograd (1992–3); see also Hutching (1976); Amman and Cooper (1986).

66 Agamirzian (1991).

production of a powerful machine, the BESM-6, capable of 800,000 operations per second, which became the workhorse of Soviet computing for the next two decades. Yet, this was the last major breakthrough of an endogenous Soviet computer industry. In 1965, under pressure from the military, the Soviet government decided to adopt the IBM model 360 as the core of the Unified Computer System of the Council of Mutual Economic Assistance (the Soviet-dominated Eastern European international organization). From then on, IBM and digital computers, and later some Japanese computers, became the norm in the Soviet Union. Instead of developing their own design and production line, Soviet electronic R&D centers and factories (all under the Ministry of Defense) engaged in the smuggling of computers from the West, proceeding to reverse engineering and to reproduce each model, adapting them to Soviet military specifications. The KGB was given, as a priority task, the acquisition of the most advanced Western technological know-how and machines, particularly in electronics, by whatever means.[67] Open and covert technology transfer from the West, both in design and in equipment, became the main source for the information technology revolution in the Soviet Union. This necessarily led to retardation, since the time lag between the moment that a new computer hit the world market (or even became available to KGB agents) and the moment that Soviet factories were able to produce it became increasingly longer *vis-à-vis* the state of the art, especially given the acceleration of the technological race in the late 1970s. Since the same procedure was followed for all electronics components and software, retardation in each segment of the industry interacted with each other, thus multiplying the technological lag. What had been a situation close to parity in computer design in the early 1960s became, in the 1990s, a 20-year difference in design and manufacturing capability.[68]

A similar development took place in software. Soviet machines of the 1960s were working on the endogenously developed ALGOL language, which would have paved the way for systems integration, the current frontier of computing. Yet, in the 1970s, in order to operate American-like computers, Soviet scientists developed their version of FORTRAN, quickly made obsolete by software developments in the West. Finally, they resorted to copying, without legal permission, whatever software appeared in America, thus introducing

67 Andrew and Gordievsky (1990: 521ff.).

68 Evaluation by the director of the Institute of Informatics Systems, Russian Academy of Sciences, Siberian Branch. This evaluation was confirmed by six engineers and managers in telecommunications and electronics institutes in Zelenograd during my fieldwork; see Castells and Natalushko (1993); Castells and Hall (1994: ch. 4).

the same retardation mechanism to a field in which Russian mathematicians could have pioneered the world's scientific frontier.

Why so? Why, paradoxically, did the Soviet military and the KGB choose to become technologically dependent on the US?! The researchers I interviewed in the Academy of Sciences' Institute of Informatics Systems in Novosibirsk gave a convincing argument, drawn from their own experience. The development of Soviet computer sciences in isolation from the rest of the world was too uncertain in a field largely unexplored to satisfy the worried military and political leadership. What would happen to Soviet power, based on computing capacities, if their researchers missed a crucial new development, if the technological trajectory in which they were locked diverged dangerously from the West in an untested course? Would it not be too late to change course if the US one day realized that the Soviet Union did not have the real computing capacity to defend itself effectively? Thus, the Soviet leadership (probably a high-level decision informed by the KGB) opted for a conservative, safe approach: let us have the same machines as "they" have, even if we take some extra time to reproduce "their" computers. After all, to activate Armageddon a few years' technological gap in electronic circuitry would not really be relevant, as long as it worked. Thus, the superior military interests of the Soviet state led to the paradox of making the Soviet Union technologically dependent on the United States in the crucial field of information technology.

However, Japanese electronics companies also proceeded to copy American technology in the early stages, and succeeded in catching up in several key areas in one or two decades, while the Soviet Union experienced the opposite result. Why so? The main reason seems to be that Japanese (and later other Asian countries) had to compete with the firms from whom they were borrowing the technology, so they had to keep apace, while the rhythm of technological development in Soviet enterprises was dictated by military procurement procedures and by a command economy that emphasized quantity over quality. The absence of international or domestic competition removed any pressure on Soviet firms to innovate faster than was needed in the view of the planners of the Ministry of Defense.[69] When the military-oriented technological acceleration of the "Star Wars" program made evident the much-feared technological gap between the Soviet Union and the US, the alarm of the Soviet high command, as expressed most openly by the chief of staff Marshal Ogarkov, was one of the factors that prompted *perestroika*, in spite of the political fall of Ogarkov himself.[70]

69 Goldman (1987).
70 Walker (1986).

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However, the Soviet Union had sufficient scientific, industrial, and technological resources outside the military sector to have been able to improve its technological performance even in the absence of military spinoffs. But another layer of statist logic precluded such development. The functioning of the command economy, as mentioned above, was based on the fulfillment of the plan, not on the improvement of either products or processes. Efforts at innovation always entail a risk, both in the outcome and in the ability to obtain the necessary supplies to engage in new areas of production. There was no incentive built into the system of industrial production toward such a goal. Indeed, there was the possibility of failure inscribed in any risk-taking initiative. Technological innovation had no rewards but could result in sanctions.[71] A simplistic, bureaucratic logic presided over technological decision-making, as in all other areas of economic management. A revealing anecdote may help to illustrate the argument.[72] Most US chip leads are spaced $^1/_{10}$ inch apart. The Soviet Ministry of Electronics, in charge of copying American chips, mandated metric spacing, but $^1/_{10}$ inch is equivalent to an odd metric measure: about 0.254 mm. To simplify things, as is often the case with the Soviet bureaucracy, rounding was decided upon, creating a "metric inch": 0.25 mm spacing. Thus, Soviet chip clones look like their American equivalents, but they do not fit in a Western socket. The mistake was discovered too late, with the net result that, even in 1991, Soviet semiconductor assembly equipment could not be used to produce Western-sized chips, thus excluding potential exports for Soviet microelectronics production.

Furthermore, scientific research and industrial production were institutionally separated. The powerful and well-provided Academy of Sciences was a strictly research-oriented institution with its own programs and criteria, disconnected from the needs and problems of industrial enterprises.[73] Unable to rely on the contributions of the Academy, enterprises used the research centers of their own ministries. Because any exchange between these centers would have required formal contacts between ministries in the context of the plan, applied research centers also lacked communication between each other. This strictly vertical separation, imposed by the institutional logic of the command economy, forbade the process of "learning by doing" that was critical in fostering technological innovation in the West. The lack of interaction between basic science, applied research, and industrial

71 Berliner (1986); Aganbegyan (1989).
72 Reported by Fred Langa, chief editor of the journal *BYTE*; see the April 1991 issue, p. 128.
73 Kassel and Campbell (1980).

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production led to extreme rigidity in the production system, to the absence of experimentation in scientific discoveries, and to a narrow application of specific technologies for limited uses, precisely at the moment when advancement in information technologies was predicated on constant interaction between different technological fields on the basis of their communication via computer networks.

Soviet leaders became increasingly concerned about the lack of productive interaction between science and industry, at least from 1955, when a conference convened by Bulganin met to discuss the problem. During the 1960s, Khrushchev, and then Brezhnev, were betting on science and technology to overtake capitalism. In the late 1960s, in the context of cautious economic reforms, "science–production associations" were introduced, establishing horizontal links between enterprises and research centers.[74] The results, again, were paradoxical. On the one hand, the associations won some autonomy and increased the interaction between their industrial and scientific components. On the other hand, because they were rewarded by their differential increase in production *vis-à-vis* other associations, they developed a tendency to be self-sufficient, and to cut off ties with other production associations, as well as with the rest of the science and technology system, since they were only accountable to their own parent ministries. Additionally, ministries were not keen to cooperate outside their controlled turfs, and the Academy of Sciences resisted any attempt at curtailing its bureaucratic independence, skillfully using the fears of regressing to the excessive submission of the Stalinist era. Although Gorbachev tried later to revive the experience, horizontal linkages between scientific research and industrial enterprises never really worked in the planned economy, thus precluding effective application of technological discoveries using different channels from vertically transmitted ministerial instructions.

A case in point, which illustrates the fundamental inability of the centrally planned economy to accommodate processes of rapid technological innovation, is the experiment of the science city of Akademgorodok, near Novosibirsk.[75] In 1957, Khrushchev, upon his return from the United States, aimed at emulating the American university campus model, convinced that, given the right conditions, Soviet science could surpass its Western equivalent. On the advice of a leading mathematician, Lavrentiev, he launched the construction of a science city in the Siberian birch forest, on the shores of the artificial Ob lake, adjacent to, but deliberately separated from, the main Siberian

74 Kazantsev (1991).
75 Castells and Hall (1994: 41–56).

industrial and political center, Novosibirsk. Some of the best, young, dynamic scientific talent in the Soviet Union were given incentives to settle there, away from the academic bureaucracy of Moscow and Leningrad, and somewhat freer from direct ideological control. In the 1960s, Akademgorodok flourished as a major scientific center in physics, mathematics, informatics, advanced materials, and economics, among other disciplines. At its peak in the 1980s, Akademgorodok was home to 20 Institutes of the Academy of Sciences, as well as to a small, elite university, Novosibirsk State University. Altogether there were almost 10,000 researchers and professors, 4,500 students, and thousands of auxiliary workers and technicians. These scientific institutions operated on the cutting edge of their disciplines. Indeed, in economics and sociology, Akademgorodok provided some of the first intellectual leaders of *perestroika*, including Abel Aganbegyan and Tatyana Zaslavskaya. Yet, regardless of the scientific excellence achieved by the Siberian science city, its link up with industry never took place. And this was in spite of its proximity to the Siberian industrial center, where were located major defense plants, including electronics and aircraft factories. The separation between the two systems was such that the Academy of Sciences established its own industrial workshops in Akademgorodok to produce the machines needed for scientific experimentation, while Novosibirsk electronics enterprises continued to rely on their Moscow-based research centers. The reason, according to the researchers I interviewed in 1990–2, was that industrial firms were not interested in state-of-the-art technology: their production plans were adjusted to the machinery they already had installed, and any change in the production system would mean failure to meet production quotas assigned to them. Therefore, technological change could happen only through the impetus of the corresponding Gosplan unit, which would have to order the introduction of new machines at the same time as it determined a new production quota. But Gosplan's calculations could not rely on potential machinery resulting from cutting-edge research in the academic institutes. Instead, Gosplan relied on off-the-shelf technology available in the international market, since the more advanced Western technology procured secretly by the KGB was reserved to the military sector. Thus, one of the boldest experiments of the Khrushchev era, designed to link up science and industry to form the core of a new development process in one of the world's richest regions in natural resources, ultimately failed under the inescapable burden of Soviet statism.

Thus, when technological innovation accelerated in the West, during the 1970s and early 1980s, the Soviet Union increasingly relied on imports of machinery and technology transfer for its leading industrial

sectors, taking advantage of the cash bonanza resulting from Siberian oil and gas exports. There was considerable waste. Marshall Goldman interviewed a number of Western business executives engaging in technology exports to the Soviet Union in the early 1980s.[76] According to their accounts, imported equipment was poorly utilized (at about two-thirds of Western efficiency for the same machines); the Ministry of Foreign Trade attempted to save its scarce hard currency resources, while major enterprises had a vested interest in stockpiling the most recent equipment and large amounts of spare parts whenever they were authorized to proceed with imports; distrust between ministries made it impossible to harmonize their import policies, resulting in incompatibility between equipment; and long periods of amortization for each type of equipment imported in a given factory led to technological obsolescence, and to the painful coexistence of machinery and procedures of highly diverse technological ages. Moreover, it soon became evident that it was impossible to modernize the technology of one segment of the economy without revamping the entire system. Precisely because the planned economy made its units highly interdependent, it was impossible to remedy technological lag in some critical sectors (for example, electronics) without enabling each element of the system to interface with the others. To close the circle, the logic of using scarce foreign technology resources for a shrunk, indispensable segment of the system, reinforced the priority given to the military–industrial sector, and firmly established a sharp separation between two increasingly incompatible technological systems, the war machine and the survival economy.

Last, but not least, ideological repression and the politics of information control were decisive obstacles for innovation and diffusion of new technologies precisely focused on information processing.[77] True, in the 1960s the excesses of Stalinism were left behind, to be replaced by the grand perspectives of "scientific and technical revolution" as the material basis of socialism. Lysenko was dismissed shortly after Khrushchev's fall, although only after exercising intellectual terror for 20 years; "cybernetics" ceased to be considered a bourgeois science; mathematical models were introduced in economics; systems analysis was favorably commented upon in the Marxist–Leninist circles; and, most significantly, the Academy of Sciences received strong material support and considerable bureaucratic autonomy to take care of its own affairs, including exercising its own ideological controls. Yet, Soviet science and technology continued to suffer from bureaucracy,

76 Goldman (1987: 118 ff.).
77 Smaryl (1984).

ideological control, and political repression.[78] Access to the international scientific community remained very limited, and available only to a select group of scientists, closely surveilled, with the ensuing handicap for scientific cross-fertilization. Research information was filtered, and the diffusion of findings was controlled and limited. Science bureaucrats often imposed their views on challengers and innovators, finding support in the political hierarchy. KGB presence in major scientific centers continued to be pervasive until the end of the Soviet regime. Reproduction of information, and free communication among researchers, and between researchers and the outside world, remained difficult for a long time, constituting a formidable obstacle to scientific ingenuity and technological diffusion. Following Lenin's genial instinct to control paper supply as the basic device for controlling information in the aftermath of revolution, Soviet printing, copying, information processing, and communication machines remained under tight control. Typewriters were rare, carefully monitored devices. Access to a photocopying machine always required security clearance: two authorized signatures for a Russian text, and three authorized signatures for a non-Russian text. Use of long-distance telephone lines and telex was controlled by special procedures within each organization. And the very notion of a "*personal* computer" was objectively subversive to the Soviet bureaucracy, including science bureaucracy. Diffusion of information technology, both of machines and of the know-how, could hardly take place in a society where the control of information was critical to the legitimacy of the state, and to the control of the population. The more communication technologies made the outside world accessible to the imaginary representation of Soviet citizens, the more it became objectively disruptive to make such technologies available to a population which, by and large, had shifted from submissive terror into passive routine on the basis of a lack of information and of alternative views of the world. Thus, as its very essence, Soviet statism denied itself the diffusion of information technologies in the social system. And, without this diffusion, information technologies could not develop beyond the specific, functional assignments received from the state, thus making impossible the process of spontaneous innovation by use and networked interaction which characterizes the information technology paradigm.

Thus, at the core of the technological crisis of the Soviet Union lies the fundamental logic of the statist system: overwhelming priority given to military power; political–ideological control of information by the state; the bureaucratic principles of the centrally planned

78 Fortescue (1986).

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economy; isolation from the rest of the world; and an inability to modernize some segments of the economy and society technologically without modifying the whole system in which such elements interact with each other.

The consequences of this technological backwardness at the very moment when advanced capitalist countries were involved in a fundamental technological transformation, were full of meaning for the Soviet Union, and ultimately became a major contributing factor in its demise. The economy could not shift from an extensive to an intensive model of development, thus accelerating its decline. The increasing technological gap disabled the Soviet Union in world economic competition, closing the door to the benefits of international trade beyond its role as supplier of energy and materials. The highly educated population of the country found itself trapped in a technological system that was increasingly distant from comparable industrial societies. The application of computers to a bureaucratic system and to a command economy increased the rigidity of controls,[79] verifying the hypothesis according to which technological rationalization of social irrationality increases disorder. Ultimately, the military machine itself came to suffer from a growing technological gap *vis-à-vis* its competing warriors,[80] thus deepening the crisis of the Soviet state.

The Abduction of Identity and the Crisis of Soviet Federalism

> *Many of our national problems are caused by the contradictory nature of the two principles which were laid as the cornerstones of the Russian Federation: the national-territorial principle and the administrative-territorial principle.*
>
> Boris Yeltsin, *Rossiyskaya gazeta*, February 25, 1994

Gorbachev's reforms were explicitly aimed, at their inception, at economic restructuring and technological modernization. Yet, these were not the only faults of the Soviet system. The foundations of the multinational, multi-ethnic, multilayered, Soviet federal state were built on the shaky sand of reconstructed history, and barely sustained by ruthless repression.[81] After massive deportations of entire ethnic groups to

79 Cave (1980).
80 Walker (1986); Praaning and Perry (1989); Rowen and Wolf (1990); Taibo (1993a).
81 Carrere d'Encausse (1978).

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Siberia and central Asia under Stalin,[82], an iron-clad prohibition was imposed on the autonomous expression of nationalism among the more than a hundred nationalities and ethnic groups that populated the Soviet Union.[83] Although there were isolated nationalist demonstrations (for example, Armenia, April 1965; Georgia, April 1978), sometimes crushed by force (for example, Tbilisi, March 1956), most nationalist expressions were subdued for a long period, and only taken up by dissident intellectuals in rare moments of relative tolerance under Khrushchev or in the late 1970s.[84] Yet, it was the pressure of nationalism, utilized in their personal interest by the political elites of the republics, that ultimately doomed Gorbachev's reformist experiment, and led to the disintegration of the Soviet Union. Nationalism, including Russian nationalism, provided the ideological basis for social mobilization in a society where strictly political ideologies, not relying on historical–cultural identity, suffered the backlash of cynicism and disbelief generated by seven decades of indoctrination in the themes of communist utopia.[85] While the inability of Soviet statism to adapt to the technological and economic conditions of an information society was the most powerful underlying cause of the crisis of the Soviet system, it was the resurgence of national identity, either historically rooted or politically reinvented, that first challenged and ultimately destroyed the Soviet state. If economic and technological problems prompted the Andropov–Gorbachev reforms of the 1980s, the explosive issue of insurgent nationalism and federal relationships within the Soviet Union was the main political factor accounting for the loss of control of the reform process by the Soviet leadership.

The reasons for this irrepressible resurgence of nationalism in the Soviet Union during the *perestroika* years are to be found in the history of Soviet communism. It is, in fact, a complex story that goes beyond the simplistic image of sheer repression of national/ethnic cultures by the Soviet state. Indeed, it is argued by one of the leading historians of non-Russian nationalities in the Soviet Union, professor of Armenian history Ronald Grigor Suny, that:

> Lost in the powerful nationalist rhetoric is any sense of the degree to which the long and difficult years of Communist party rule actually continued the "making of nations" of the pre-revolutionary period. As the present generation watches the self-destruction of the Soviet Union, the irony is lost that the USSR was the victim not only of its negative

82 Nekrich (1978).
83 Motyl (1987); Lane (1990).
84 Simon (1991).
85 Carrere d'Encausse (1991); Khazanov (1995).

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> effects on the non-Russian peoples but of its own "progressive" contribution to the process of nation building ... The Soviet state's deeply contradictory policy nourished the cultural uniqueness of distinct peoples. It thereby increased ethnic solidarity and national consciousness in the non-Russian republics, even as it frustrated full articulation of a national agenda by requiring conformity to an imposed political order.[86]

Let us try to reconstruct the logic of this powerful political paradox.[87]

The Soviet Union was founded in December 1922 and its multinational, federal state was enshrined in the 1924 Constitution.[88] Originally it included: the Russian Soviet Federated Socialist Republic (RSFSR), itself incorporating, besides Russia, a number of non-Russian autonomous republics; the Ukrainian Soviet Socialist Republic; the Byelorussian Soviet Socialist Republic; and the Transcaucasian Federated Socialist Republic, a potentially explosive, artificial entity that brought together centuries-old inimical peoples, such as Georgians, Azeris, Armenians, and a number of smaller ethnic groups, among whom were Ingushis, Osetians, Abkhazians, and Metsketyans. Membership of the Union was open to all existing and future Soviet and Socialist Republics in the world. In the Fall of 1924, two additional republics were incorporated: Uzbekistan (formed by the forced territorial integration of the Uzbek population in Turkestan, Bukhara, and Khoresm), and Turkmenia. In 1936, three new Union Republics were created under the names of Tajikistan, Kirghizia, and Kazakhstan. Also in 1936, Transcaucasia was divided into three republics, Georgia, Armenia, and Azerbaijan, leaving inside each one of the three republics substantial ethnic enclaves that acted eventually as nationalist time bombs. In 1940, the forced absorption into the USSR of Estonia, Latvia, Lithuania, and Moldova (taken from Romania) completed the republican structure of the Soviet Union. Its territorial expansion also included the annexation of Karelia and Tuva, as autonomous republics within the RSFSR, and the incorporation of new territories in Western Ukraine and Western Byelorussia, extracted from Poland, in the 1939–44 period, and Kaliningrad, taken from Germany in 1945.[89]

The formation of the federal state of the Soviet Union was the result of a compromise following intense political and ideological debates

86 Suny (1993: 101, 130).
87 For a theoretical analysis of the relationship between nationalism and mobilization by Leninist elites, see Jowitt (1971, esp. part I), which sets his analytical foundation in a comparative perspective.
88 Pipes (1954).
89 Singh (1982); Hill (1985); Kozlov (1988).

during the revolutionary period.[90] Originally, the Bolshevik position denied the relevance of nationality as a significant criterion for the building of the new state, since class-based proletarian internationalism intended to supersede national differences between the working and exploited masses, manipulated into inter-ethnic confrontations by bourgeois imperialism, as demonstrated by World War I. But in January 1918 the urgency of finding military alliances in the civil war that followed the Bolshevik October coup convinced Lenin of the importance of support from nationalist forces outside Russia, particularly in Ukraine. The Third All-Russian Congress of Soviets in January 1918 adopted the "Declaration of the Rights of Working and Exploited People," outlining the conversion of the former Russian Empire into the "fraternal union of Soviet Republics of Russia freely meeting on a federal basis."[91] To this "internal federalization" of Russia, the Bolsheviks added the project for the "external federalization" of other nations in April 1918, explicitly calling to the Union the people of Poland, Ukraine, Crimea, Transcaucasia, Turkestan, Kirghiz, "and others." But the critical debate concerned the principle under which ethnic and national identity would be recognized in the new Soviet state. Lenin and Stalin opposed the views of the Bundists and other socialists who wanted national cultures recognized throughout the whole structure of the state, making the Soviet Union truly multicultural in its institutions. *They opposed to such a view the principle of territoriality as the basis for nationhood.*[92] Furthermore, ethnic/national rights were to be institutionalized under the form of Union Republics, Autonomous Republics, and Autonomous Regions. The result was a complete encapsulation of the national question into the multilayered structure of the Soviet state: identities were recognized only as far as they could be marshalled within the institutions of governance. This was considered to be the expression of the principle of democratic centralism in reconciling the unitary project of the Soviet state with the recognition of the diversity of its territorial subjects.[93] Thus, the Soviet Union was constructed around the principle of a double identity: ethnic/national identities (including Russian) and Soviet identity as the foundation of the new culture of a new society.

Beyond ideology, the territorial principle of Soviet federalism was the application of a daring geopolitical strategy aimed at spreading communism throughout the world. A.M. Salmin has proposed an interesting model for interpreting the Leninist–Stalinist strategy

90 Carrere d'Encausse (1987).
91 Quoted by Singh (1982: 61).
92 Suny (1993: 110ff).
93 Rezun (1992).

underlying Soviet federalism.[94] The Soviet Union, in this view, was a centralized but flexible institutional system whose structure should remain open and adaptive to receive new members who would add to the system as the cause of socialism inexorably advanced in the world. This is why the Soviet Constitution of 1924 established the right of republics not only to enter the Union, but also to secede from it, making such decisions sovereign and reversible. History showed how difficult the application of such a right to secede became in the practice of the Soviet state. Yet, it was this principle, inherited from the early revolutionary debates and reproduced in the 1936 and 1977 Constitutions, that provided the legal/institutional basis for the separatist movements during the Gorbachev era, thus taking revolutionary ideology at its word and reversing, and ultimately dismantling, the odd construction of Soviet federalism.[95]

In the geopolitical model proposed by Salmin, which seems to fit with the historical evidence on the origins of the Soviet state,[96] five concentric circles were designed as both security areas and waves of expansion of the Soviet state as the standard-bearer of world communism. The first was Russia and its satellite autonomous republics, organized in the RSFSR. This was considered to be the core of Soviet power, to the point that, paradoxically, it was the only republic of the USSR not to have specific Communist party organizations, the only one without a president of the Republican Supreme Soviet, and the one with the least developed republican state institutions. In other words, the RSFSR was the reserved domain of the CPSU. Significantly, the RSFSR did not have land boundaries with the potentially aggressive capitalist world. Around this core of Soviet power, a protective second circle was formed by the Union republics, formally equal in rights to the RSFSR. Since several RSFSR autonomous republics (for example, Chechnya) were as non-Russian as some of the Union republics, it would seem that the actual criterion for their inclusion in one or other formation was precisely the fact that the Union republics had boundaries in direct contact with the outside world, thus acting as a territorial glacis for security purposes. The third circle was formed by the "people's democracies," outside the Soviet Union but under direct Soviet control, both militarily and territorially. Originally, this was the case for Khoresm and Bukhara (later dispatched between Uzbekistan and Turkmenia), Mongolia, and Tannu-Tura. In the 1940s, the People's

94 Salmin (1992).

95 On the relationship between the national–territorial principle of Soviet federalism and the process of disintegration of the Soviet Union, see the insightful analysis of Granberg (1993b). For a recollection of the events, see Smith (1992).

96 Suny (1993: 110ff).

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Democracies of Eastern Europe also played such a role. The fourth circle was represented by the vassal states of pro-Soviet orientation (eventually this category was formed by countries such as Cuba, Vietnam, and North Korea); China was never really considered to be in such a category in spite of the triumph of communism: indeed, it was soon to be seen as a geopolitical threat. Finally, a fifth circle was formed by the international communist movement and its allies around the world, as embryos of the expansion of the Soviet state to the entire planet when historical conditions would precipitate the inexorable demise of capitalism.[97]

This constant tension between the a-historical, class-based universalism of communist utopia and the geopolitical interest of supporting ethnic/national identities as potential territorial allies determined the schizophrenia of Soviet policy toward the national question.

On the one hand, national cultures and languages were spurred, and in some cases reconstructed, in the union republics, autonomous republics, and ethnically based territories (*krai*). Nativization (*korenizatsiya*) policies were supported by Lenin and Stalin until the 1930s, encouraging the use of native languages and customs, implementing "affirmative action," pro-minority recruitment and promotion policies in the state and party apparatuses in the republics, and fostering the development of endogenous political and cultural elites in the republican institutions.[98] Although these policies suffered the backlash of anti-nationalist repression during the collectivization years, under Khrushchev and Brezhnev they were revived and led to the consolidation of powerful national/ethnic elites in the republics. Khrushchev, himself a Ukrainian, went so far in the non-Russian bias of Soviet federalism as to decide suddenly in 1954 on the transfer of the Crimea, a historically Russian territory, to Ukraine, reportedly after a night of heavy drinking on the eve of the Ukrainian national day. Furthermore, in the central Asian and Caucasian republics, during the Brezhnev period, traditional ethnic networks of patronage combined with party affiliation to establish a tight system that linked *nomenklatura*, clientelism, and the shadow economy in a hierarchical chain of personal loyalties that extended all the way up to the Central Committee in Moscow, a system that Helene Carrere d'Encausse calls "Mafiocracy."[99] Thus, when in December 1986 Gorbachev tried to clean up the corrupt party apparatus in Kazakhstan, the removal of a long-time Brezhnev protégé (Brezhnev himself started his career as

97 Conquest (1967); Singh (1982); Mace (1983); Carrere d'Encausse (1987); Suny (1993).
98 Suny (1993: ch. 3).
99 Carrere d'Encausse (1991: ch. 2).

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Table 1.5 Balance of inter-republican exchange of products and resources, 1987

			Full balance	
	Output balance (billions of rubles)		*Fixed assets (billions of rubles)*	*Labor resources (million person-years)*
Republic	*Direct*	*Full*		
Russia	3.65	− 4.53	15.70	− 0.78
Ukraine and Moldova	2.19	10.30	8.61	0.87
Byelorussia	3.14	7.89	1.33	0.42
Kazakhstan	− 5.43	− 15.01	− 17.50	− 0.87
Central Asia	− 5.80	− 13.41	20.04	− 0.89
Transcaucasia	3.20	7.78	2.48	0.57
Baltic republics	− 0.96	− 0.39	− 3.22	− 0.05
Total	0.00	− 7.37	− 12.63	− 0.74

Source: Granberg (1993a)

party chief in Kazakhstan), the Kazakh Dinmukhammed Kunaev, and his replacement by a Russian as secretary of the party, provoked massive riots in Alma Ata in defense of ethnic, Kazakh rights.[100]

The greatest paradox of this policy toward nationalities was that Russian culture and national traditions were oppressed by the Soviet state.[101] Russian traditions, religious symbols, and Russian folk were persecuted or ignored, depending upon the needs of communist politics at each point in time. Redistribution of economic resources took place in a reverse sense to what a "Russian imperialism" would have dictated: Russia was the net loser in inter-republican exchanges,[102] a situation that has continued into the post-communist era (see table 1.5). If we refer to Salmin's geopolitical theory of the Soviet state, the system operated as if the preservation of communist power in Russia was dependent on the ability of the party to lure into the system other nations, not only subduing them through repression, but also co-opting their allegiance by providing resources and rights in excess of what Russian citizens were given. This does not exclude, of course,

100 Wright (1989: 40–5, 71–4); Carrere d'Encausse (1991).
101 Suny (1993); Galina Starovoitova, Lecture at the Center for Slavic and Eastern European Studies, University of California at Berkeley, February 23, 1994, Emma Kiselyova's notes.
102 See, among other works by Alexander Granberg, Granberg and Spehl (1989) and Granberg (1993a).

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Table 1.6 Ethnic composition of Russia's autonomous republics, 1989

Republic	*Area (thousands of km²)*	*Percentage population share*	
		Titular group	*Russians*
Bashkir	144	21.9	39.3
Buryat	351	24.0	70.0
Chechen-Ingush	19	70.7	23.1
Chuvash	18	67.8	26.7
Dagestan	50	27.5 (Avars)	9.2
Kabardino-Balkar	13	57.6	31.9
Kalmyk	76	45.4	37.7
Karelian	172	10.0	73.6
Komi	416	23.3	57.7
Mari	23	43.3	47.5
Mordva	26	32.5	60.8
North Ossetian	8	53.0	29.9
Tatar	68	48.5	43.3
Tuva	171	64.3	32.0
Udmurt	42	30.9	58.9
Yakut	3103	33.4	50.3

Source: Shaw (1993: 532)

ethnic discrimination in major institutions of the state, for instance in the army and in the KGB, whose commanders were overwhelmingly Russian; or the policy of russification in the language, in the media, in culture, and science.[103] Yet, overall, Russian nationalism was generally repressed (except during the war when the assault of Nazi troops provoked Stalin into resurrecting Alexander Nevsky) as much as the cultural identity of the non-Russian subjected nations. As a consequence of this, when the relaxation of controls in Gorbachev's *glasnost* allowed nationalism to emerge, Russian nationalism was not only one of the most popularly supported but was actually the one that was decisive in dismantling the Soviet Union, in alliance with democratic nationalist movements in the Baltic republics. In contrast, in spite of their strong ethnic/national specificity, the Muslim republics of central Asia were the last bastion of Soviet communism, and only converted to independentism toward the end of the process. This was because the political elites of these republics were under direct patronage from Moscow, and their resources were highly dependent upon the politically motivated redistribution process within the Soviet state.[104]

103 Rezun (1992).
104 Carrere d'Encausse (1991).

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On the other hand, autonomous nationalist expressions were harshly repressed, particularly during the 1930s, when Stalin decided to break the back of all potential opposition to his program of accelerated industrialization and building of military power at whatever cost. The leading Ukrainian national communist, Mykola Skypnyk committed suicide in 1933, after realizing that the dreams of national emancipation within the Soviet Union had been another illusion in the long list of the Bolshevik revolution's unfulfilled promises.[105] The Baltic republics and Moldova were cynically annexed in 1940 on the basis of the 1939 Ribbentrop–Molotov pact, and national expressions in these areas were severely curtailed until the 1980s.[106] Furthermore, ethnic and national groups that were not trusted in their loyalty were submitted to massive deportation away from their original territories, and their autonomous republics abolished: such was the case for Crimean Tat-ars, Volga Germans, for Metsketyans, Chechens, Ingushi, Balkars, Karachai, Kalmyks.[107] Also, millions of Ukrainians, Estonians, Latvians, and Lithuanians suspected of collaboration with the enemy during World War II suffered a similar fate. Anti-Semitism was a permanent feature of the Soviet state and permeated down to every single mechanism of political and professional promotion.[108] In addition, the policy of industrialization and settlement in the eastern regions led to the emigration (induced by the Soviet state) of millions of Russians into other republics, in which they became a sizeable minority, or even the largest ethnic group (as in Kazakhstan) while still being represented in the state by the native elites of each republic (see table 1.6). At the end of the Soviet Union, about 60 million citizens were living outside their native land.[109] This largely artificial federal construction was more a system of cooptation of local/regional elites than a recognition of national rights. The real power was always in the hands of the CPSU, and the party was hierarchically organized throughout the Soviet territory, directly conveying orders from Moscow to the party organization in each republic, autonomous republic or *oblast*.[110] Furthermore, by mixing different national populations on such a large scale, and over a long period of time, a new Soviet identity did emerge, made up not just of ideology, but of family ties, friendships, and work relationships.

Thus, the Soviet state recognized national identity, with the odd exception of Russian identity, but it simultaneously defined identity in

105 Mace (1983).
106 Simon (1991).
107 Nekrich (1978).
108 Pinkus (1988).
109 Suny (1993).
110 Gerner and Hedlund (1989).

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institutions organized on the basis of territoriality, while national populations were mixed all over the Soviet Union. At the same time, it practiced ethnic discrimination and forbade autonomous nationalist expressions outside the sphere of Communist power. This contradictory policy created a highly unstable political construction that lasted only as long as systemic repression could be enforced with the help of national Communist political elites which had their vested interests in the Soviet federal state. But by channeling identity into national/ethnic self-definition as the only admissible alternative expression to the dominant socialist ideology, the dynamics of the Soviet state created the conditions for the challenge to its rule. The political mobilization of nationally-based republics, including Russia, against the superstructure of the a-national federal state was the lever that actually brought about the collapse of the Soviet Union.

The creation of a new, Soviet people (*sovetskii narod*) as an entity culturally distinct from each historic nationality was still too fragile to stand the assault of civil societies against the Soviet state. Paradoxically, this fragility was due to a large extent to the Communist emphasis on the rights of national cultures and institutions, as defined within the framework of the Soviet state. And this emphasis was directly motivated by the geopolitical interests of the CPSU, as the vanguard of a communist movement aiming at world power. Because people were allowed self-definition on the basis of their primary, national/ethnic identity, the ideological void created by the failure of Marxism–Leninism simplified the terms of the cultural debate into the opposition between subdued cynicism and rediscovered nationalism. While the nationalist fault produced only minor tremors under the iron hand of unabashed Communist authority, as soon as the pressure was released by the political expediency of the restructuring process, its shock waves wrecked the foundations of the Soviet state.

The Last *Perestroika*[111]

In April 1983, about six months after Brezhnev's death, a closed seminar, organized in Novosibirsk by the Sociology Department of the Institute of Economics and Industrial Engineering of the Soviet Academy of Sciences, brought together 120 participants from 17 cities

111 This section, and the one following, are mainly based on fieldwork, interviews and personal observation by myself and my Russian collaborators in Russia, as mentioned above, during the period 1989–96. Among relevant personalities interviewed were: A. Aganbegyan, T. Zaslavskaya, N. Shatalin, G. Yazov, B. Orlov, N. Khandruyev, Y. Afanasiev, G. Burbulis, Y. Gaidar, A. Shokhin, A. Golovkov, and several high-ranking officials of the Soviet Council of Ministers (1990, 1991),

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to discuss a daring report that denounced "the substantial lagging of production relations in the Soviet society behind the development of its productive forces."[112] The "Novosibirsk Report," intended to be exclusively for confidential use, was mysteriously leaked to *The Washington Post* which published it in August 1983. The impact of such a report *abroad* prompted Gorbachev, still not in full power, to read it and discuss it informally in the higher circles of the party. The report had been prepared under the direction of sociologist Tatyana Zaslavskaya at the Novosibirsk Institute. The director of the Institute at the time was one of the leading Soviet economists, Abel Aganbegyan. Only two years later, Aganbegyan became the top economic adviser of the newly appointed Secretary General Mikhail Gorbachev. Tatyana Zaslavskaya, as director of the first serious public opinion research institute in Moscow, was often consulted by Gorbachev, until her data started to show the decline of Gorbachev's popularity in 1988.

It is generally considered that the theses presented in the Novosibirsk document directly inspired Gorbachev's report to the 27th Congress of

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and of the Government of the Russian Federation (1991, 1992). A preliminary synthesis of these observations can be found in Castells (1992). Information on the political structure of the Soviet Union and of the political process between 1990 and 1993, based on Russian sources and interviews with political actors, is given in Castells, Shkaratan and Kolomietz (1993). (There is a Russian language version of the same report: Russian Sociological Association, Moscow.) Specific bibliographical references are given only when applicable to an argument or event mentioned in the text. I have not considered it necessary to provide specific references for reports in the Russian press of events and facts that are by now public knowledge. There are, in English, a number of excellent journalists' accounts of the process of reform and political conflict during the last decade of the Soviet Union. Two of the best are Kaiser (1991); and Pulitzer Prize Winner David Remnick (1993).

112 *Survey* (1984). The real story of the Novosibirsk Report differs from what was reported in the media, and accepted by the scholarly community. The generally acknowledged author of the report, sociologist Tatyana I. Zaslavskaya, wrote to Emma Kiselyova and myself to convey her own account of the origins and uses of the Novosibirsk Report. It did not originate in a meeting of the economic section of the Central Committee of the CPSU, as has been reported. Nor did the Central Committee ever discuss the document as such. The report was prepared for discussion in an academic meeting at the Institute of Economics and Industrial Engineering in Novosibirsk. Its distribution was forbidden, and it was stamped as a "restricted use document," each copy numbered for the exclusive use of participants at the meeting. During the meeting in Novosibirsk two of the copies disappeared. The KGB immediately tried to recover the copies, searching for them over the whole Institute, and confiscating all copies from the participants at the meeting, as well as the original manuscript of the report. Tatyana Zaslavskaya could not keep a single copy of her own report, and only received it in 1989 as a personal gift from the BBC in London. According to Zaslavskaya, Gorbachev read the report only after its publication in the West in August 1983. It seems plausible that he used some of the ideas in the elaboration of his own reformist strategy, as early as October 1984, in a Central Committee meeting on the management of the economy. Several observers trace back some key elements of Gorbachev's crucial report to the 27th Party Congress in February 1986 to the themes developed by Zaslavskaya in the Novosibirsk document. However, Zaslavskaya herself is much more skeptical concerning her intellectual influence on Gorbachev and on the Soviet leadership.

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the CPSU on February 23, 1986. In his report the Secretary General called into question the predominance of "administrative methods" in the management of a complex economy, ushering in what appeared to be the most ambitious *perestroika* in Russian history.

Gorbachev's *perestroika* was born of Andropov's efforts to steer the Communist party ship out of the stagnant waters of the last Brezhnev years.[113] As KGB chief from 1967, Andropov had enough information to know that the shadow economy had spread all over the system to the point of disorganizing the command economy, bringing corruption to the highest levels of the state, namely to Brezhnev's family. Work discipline had broken down, ideological indoctrination was met with massive cynicism, political dissidence was rising, and the war in Afghanistan was revealing how the technology of Soviet armed forces lagged behind in conventional, electronic-based warfare. Andropov succeeded in obtaining the support of a younger generation of Soviet leaders who had grown up in post-Stalinist society, and were ready to modernize the country, to open it up to the world, ending the siege mentality that still prevailed among the Politburo's old guard.

Thus, the systemic contradictions, outlined in the preceding sections of this study, built up toward a critical point of potential breakdown. But the cautious Soviet leadership was not willing to take risks. As is often the case in history, structural matters do not affect historical processes until they align with the personal interests of social and political actors. In fact, these new actors were able to organize themselves in the CPSU around Andropov only because Brezhnev's designated successor, Andrei Kirilenko, was disabled by arteriosclerosis. In spite of his brief tenure (15 months between his election as Secretary General and his death), and his ailing health during these months, Andropov played a critical role in paving the way for Gorbachev's reforms: by appointing him as his deputy, and by purging the party and creating a network of reformers on whom Gorbachev could later capitalize.[114] These reformers were hardly liberals. Leading members of the group were Yegor Ligachev, the ideologist who went on to lead the resistance to Gorbachev during *perestroika*, and Nikolai Ryzhkov, who later, as Gorbachev's Prime Minister, defended the command economy against the liberal proposals of Shatalin, Yavlinsky, and other pro-market economists. Andropov's original blueprints for reform focused on restoring order, honesty, and discipline, both in the party and at the workplace, by means of a strong, clean government.

113 For a documented analysis of the transition in the Soviet leadership from Brezhnev to Gorbachev, see Breslauer (1990).

114 An excellent report on the power struggles in the CPSU's Politburo after Brezhnev's death can be found in Walker (1986: 24ff.); see also Mitchell (1990).

Indeed, when Gorbachev was finally elected in March 1985, after the last stand of the old guard in the short-lived appointment of Chernenko, his first version of *perestroika* closely echoed Andropov's themes. The two main stated objectives of his policies were: technological modernization, starting with the machine-tools industry, and the restoration of labor discipline by calling on the responsibility of workers and by launching a decisive anti-alcohol campaign.

It soon became evident that the correction of failures in the Soviet system, as described in the Novosibirsk Report, required a major overhaul of the institutions and of domestic and foreign policy.[115] It was the historic merit of Gorbachev to have fully realized this need and to dare to take up the challenge, convinced as he was that the solidity of the Communist party, in whose fundamental principles he never ceased to believe, could endure the pain of restructuring so that a new, healthy, socialist Soviet Union could emerge from the process. In the 1986 27th Congress of the CPSU he articulated the series of policies that will remain in history as Gorbachev's *perestroika*.[116]

The last Communist *perestroika*, as its predecessors in Soviet and Russian history, was a topdown process, without any participation by the civil society in its inception and early implementation. It was not a response to pressures from below or from outside the system. It was aimed at rectifying internal failures from within the system, while keeping unscathed its fundamental principles: the Communist party monopoly of power, the command economy, and the superpower status of a unitary Soviet state.

In its strictest sense, Gorbachev's *perestroika* included a number of policies personally decided by Gorbachev, aimed at restructuring Soviet communism, between February 1986 (27th Congress) and September–November 1990, when Gorbachev rejected the "500 days plan" of transition to the market economy, and ceded to the pressures of the CPSU's Central Committee by appointing a conservative government which all but stalled the reforms and eventually engineered the August 1991 coup against Gorbachev himself.

Perestroika had four main distinct, yet interrelated, dimensions: (a) disarmament, release of the Soviet Empire in Eastern Europe, and end to the Cold War; (b)economic reform; (c) gradual liberalization of public opinion, media, and cultural expressions (the so-called *glasnost*); and (d) controlled democratization and decentralization of the political system. Significantly enough, nationalist demands within the Soviet Union were not on the agenda, until the Nagorno-Karabagh

115 See Aslund (1989).
116 See the series edited by Aganbegyan (1988–90).

conflict, mobilization in the Baltic republics, and the 1989 Tbilisi massacre forced Gorbachev to deal with the issues involved.

The end of the Cold War will remain in history as Gorbachev's fundamental contribution to humankind. Without his personal decision to take the West at its word, and to overcome the resistance of Soviet hawks in the security establishment, it is unlikely that the process of disarmament and the partial dismantling of Soviet and American nuclear arsenals would have gone as far as they have, in spite of limitations and delays in the process. Furthermore, Gorbachev's initiative was decisive in the crumbling of communist regimes in Eastern Europe, since he even threatened (behind the scenes) the use of Soviet troops to thwart the Stasi's intention of shooting at demonstrations in Leipzig. To relinquish control over Eastern Europe was Gorbachev's masterful move to make disarmament and truly peaceful coexistence with the West possible. Both processes were indispensable in order to attack the problems of the Soviet economy and to link it up with the world economy, as was Gorbachev's ultimate design. Only if the burden of the gigantic military effort could be removed from the Soviet state could human and economic resources be reoriented toward technological modernization, production of consumer goods, and improvement in the living standards of the population, thus finding new sources of legitimacy for the Soviet system.

Yet, economic reforms proved to be difficult, even taking into account the promise of future disarmament.[117] The conversion of military enterprises proved so cumbersome that it is still unfulfilled after several years of post-Communist regime in Russia. World oil prices fell in 1986, contributing to lagging productivity and falling production in the Siberian oil and gas fields, so that the hard-currency cushion, which for about a decade had spared the Soviet Union from major economic shortages, started to dwindle, increasing the difficulty of the transition. The dramatic nuclear accident at Chernobyl in April 1986 showed that the technological failure of Soviet industrialism had reached a dangerous level, and, in fact, helped liberalization by providing Gorbachev with additional arguments to shake up state bureaucracy. Yet, the most serious obstacles to economic reform came from the Soviet state, and even from the ranks of Gorbachev's reformers themselves. While there was agreement on the gradual movement toward the introduction of semi-market mechanisms in some sectors (mainly in housing and in services), neither Gorbachev nor his economic advisers really envisaged accepting the private property of land and means of production, liberalizing prices throughout the economy,

117 See Aganbegyan (1989).

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freeing credit from direct Gosbank control, or dismantling the core of the planned economy. Had they tried these reforms, as in the "500 days plan" elaborated by Shatalin and Yavlinsky in the summer of 1990, they would have faced the staunch opposition of the Soviet state apparatus and of the Communist party leadership. Indeed, this is exactly what happened when they hinted at such a possibility in the summer of 1990. At the root of the difficulties inherent in *perestroika* lay Gorbachev's personal and political contradiction in trying to reform the system by using the Communist party, while moving in a direction that would ultimately undermine the power of the Communist party itself. The "stop-and-go" policies that derived from such half-hearted reform literally disorganized the Soviet economy, provoking massive shortages and inflation. Inflation fueled speculation and illegal stockpiling, providing the ground for an even greater sprawling of the shadow economy in all areas of activity. From its subsidiary role, as a profitable parasite of the command economy, the shadow economy took over entire sectors of trade and distribution of goods and services, so that for a long time, and even more after the end of Communism, the former shadow economy, with its cohort of criminal mafias and corrupt officials, became the predominant organizational form of profit-making economic activity in the Soviet Union, and in its successor societies.[118] The takeover of the most dynamic economic sectors by the shadow economy further disorganized the formerly planned economy, plunging the Soviet economy into chaos and hyperinflation by 1990.

Gorbachev was not a visionary idealist, but a pragmatic leader, a veteran, skillful party politician, who had confronted the endemic problems of Soviet agriculture in his native Stavropol province. He was self-assured about his capacity to maneuver, convince, coopt, buy off, and, when necessary, repress his political adversaries, as circumstances fitted to his design. His *perestroika* became both radicalized and paralyzed because he sincerely believed that he could perfect the system without fundamentally antagonizing the social interests that supported Soviet communism. In this sense, he was at the same time sociologically naïve and politically arrogant. If he had paid closer attention to the sociological analysis implicit in Zaslavskaya's document, he would have had a clearer vision of the social groups on which he could have relied, and of those that would ultimately oppose any significant attempt to ground the system on a different logic, whether political democracy or market economy. In the final analysis, the structure of society largely determines the fate of political projects.

118 See, for instance, Handelman (1995).

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This is why it is relevant to remember at this point in the discussion what was the basic social structure underlying the power system in the Soviet statist society. Four major interest groups represented the essence of Soviet social power:[119]

1 The communist ideologists, linked to the defense of Marxist–Leninist values and of their dominance on social habits and institutions. These were the doctrinaire leaders of the Communist party (headed by Ligachev during the *perestroika* years), but also included power-holders in the cultural and media apparatuses of the Soviet Union, from the press, television and radio, to the Academy of Sciences and universities, including also official artists and writers.
2 The power elite of the state apparatus, interested in the continuation of its monopoly of power in the Soviet state, a source of extraordinary privileges to the point of representing a caste, rather than a class. This power elite was itself subdivided into at least four major categories which obviously do not exhaust the complex structure of the Soviet state:
   (a) The core political apparatus of the CPSU, which constituted the source of the *nomenklatura*, the actual ruling class of the Soviet Union. As it is known, the term *nomenklatura* has a precise meaning: it was the list of positions in the state and in the party, for which it was necessary to have the explicit agreement of the relevant party committee on the name of each person to be appointed; in the strictest, and most relevant sense, the top of the *nomenklatura* (literally thousands of positions) required explicit agreement by the Central Committee of the CPSU. This was the fundamental mechanism through which the Communist party controlled the Soviet state for seven decades.
   (b) The second, distinct elite group of the state apparatus was formed by Gosplan officers, who single-handedly managed the entire Soviet economy and gave instructions to the relevant ministries and administrative units. Gossnab, and to some extent Gosbank, executives, should also be included in this category.
   (c) A third group was formed by the commanders of the armed forces. Although they were always submitted to the party

119 See Lane (1990); Castells et al. (1993). For an insightful theoretical analysis in understanding the social structure of socialist societies, see Verdery (1991). We have also relied on work by Ivan Szelenyi. See, for instance, Szelenyi (1982).

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authority (particularly after their decimation by Stalin in the 1930s), they represented an increasingly autonomous group as the army grew in complexity, and became more reliant on technology and intelligence. They increasingly exercised their power of veto, and could not be counted on without serious consultation in the last decade of the Soviet Union, as the 1991 plotters learned too late.[120]

(d) Last, but not least, KGB and Interior Ministry special forces continued to play an important, and relatively autonomous, role in the Soviet state, trying to embody the interests of the state beyond the variations of political rivalry within the party. It should be remembered that the contemporary KGB was created after Stalin's death, in March 1954, after the alliance of the party leadership and the armed forces suppressed an attempted coup by Beria and the MVD (the former political police) with whom the army always kept quarrel because of the memories of the 1930s' terror. Thus, in spite of obvious continuities, the KGB of the 1980s was not the direct historical heir of Dzerzhinsky and Beria, but a more professional force, still dependent on the CPSU but more focused on the power and stability of the Soviet state than on the ideological purity of its communist construction.[121] This explains the paradoxical support of the KGB for the last round of reforms, from Andropov to Gorbachev, and its resistance to the 1991 coup, in spite of the active participation of Kryuchkov, the KGB chief.

3 A third group at the roots of Soviet power was formed by the industrial managers of large state enterprises, particularly in two major sectors: the military–industrial complex,[122] and the oil and gas industry.[123] This group, while professionally competent, and interested in technological modernization, was fundamentally opposed to the move toward the market, to the demilitarization of the economy, and to releasing control over foreign trade. Because of their economic, social, and political power in the enterprises and in key cities and regions around the country, the mobilization of this power elite against the reforms was decisive in blocking

120 On the Soviet armed forces, see Taibo (1993a).
121 Andrew and Gordievsky (1990).
122 See Castells and Natalushko (1993).
123 See Kuleshov and Castells (1993). (The original research report is in Russian and can be consulted at the Institute of Economics and Industrial Engineering, Russian Academy of Sciences, Siberian Branch, Novosibirsk, 1993). See also Kiselyova et al. (1996).

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Gorbachev's efforts in the Central Committee of the CPSU, which in 1990 had come under the control of this group.[124]

4 Finally, another extremely important interest group was organized throughout the structure of the Soviet state. This was the network formed between the *nomenklatura* and the "bosses" of the shadow economy. In fact, this group was not different from those named above in terms of the persons involved. Yet their structural position in the Soviet power system was different: their power source came from their connection to the shadow economy. This group was opposed to the dismantling of the planned economy as it could only prosper in the cracks of this economy. However, once the command economy became disorganized, the shadow economy, deeply connected to the communist *nomenklatura*, took advantage of the situation, transforming the whole economy into a gigantic speculative mechanism. Because a shadow economy thrives particularly well in times of economic chaos, the quasi-criminal leaders of the shadow economy, later transformed into wild proto-capitalism, were and are a major destabilizing factor during *perestroika* and its aftermath.[125]

This was, in a nutshell, the set of powerful interest groups that Gorbachev was up against to reform communism without abolishing the privileges generated by the system. He scored an easy victory against the ideologists. When systems reach crisis point, mechanisms for legitimating the values of the system can go the same way they came in, as long as new forms of cultural domination are generated and then embedded in the material interests of the dominant elites. Ligachev and the Nina Andreyevas of the Soviet Union became the perfect target against whom to size up the progress of reform. The army was a more potent force to reckon with, since it is never easy for the military to accept a decline in power, particularly when it goes hand in hand with the shock of realizing that entire units cannot be repatriated to the motherland because they would lack housing and basic facilities. Yet, Gorbachev won their acquiescence to disarmament by building on their understanding of the need to regroup and re-equip after losing the

124 The group that controlled the Central Committee of the CPSU in the Fall of 1990, who blocked the reforms, and whose initiatives paved the way for the preparation of the coup, was led by Lukyanov, chair of the Supreme Soviet of the USSR; Guidaspov, Leningrad's Party Secretary; Masljukov, Velitchko, and Laverov, leaders of military–industrial enterprises; and Baklanov, Secretary of the Military Commission of the Central Committee. Baklanov was considered to have played a decisive role in the preparation of the coup and he was one of the members of the "State of Emergency Committee" that seized power on August 19, 1991 (information from interviews with Russian political observers).

125 See Handelman (1995).

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technological race in conventional weapons. Marshal Ogarkov, Chief of the General Staff, was dismissed in September 1984 a year after he had publicly claimed the need for higher military budgets to update the technology of Soviet military equipment, whose inferiority had been exposed in the 1982 Bekaa Valley air massacre of Syrian jets by the Israeli Air Force. Yet, his message was received, and Gorbachev, in fact, increased the military budget, even in the middle of the harshest economic times. Gorbachev's military plans were not too different from those of the American administration: they aimed at reducing costs over time, dismantling a useless plethora of redundant nuclear missiles, while elevating the professional and technological quality of the Soviet armed forces to the level of a superpower not aiming at nuclear holocaust. This strategy was, in fact, supported by both the armed forces and the KGB which, therefore, were not in principle opposed to the reforms, provided that two limits were not transgressed: the territorial integrity of the Soviet state; and the control of the military–industrial complex by the Ministry of Defense. Thus, while Gorbachev seemed convinced of the support of the army and security forces, these two non-negotiable conditions were decisively damaging for Gorbachev's reforms because, in practice, they meant that nationalism had to be repressed (regardless of Gorbachev's personal views), and that the core of industry could not operate under market rules.

Between 1987 and 1990, the party *nomenklatura*, the top state bureaucracy, the military–industrial complex, the oil generals, and the bosses of the shadow economy effectively resisted Gorbachev's reforms, conceding ideological battles, but retrenching themselves in the structure of the party and of the state bureaucracy. Gorbachev's decrees gradually became paper tigers, as had so often been the case in the history of Russian *perestroikas*.

But Gorbachev was a fighter. He decided not to follow Khrushchev in his historic defeat, and counted on the support of the new generation of Communist leaders, up against the Soviet gerontocracy, on the sympathy of the West, on the disarray of the state bureaucracy, and on the neutrality of the army and security forces toward political infighting. Thus, to overcome the resistance of interest groups that had become a political obstacle to *perestroika*, while still believing in the future of socialism and in a reformed Communist party as its instrument, he appealed to civil society to mobilize in support of his reforms: *uskorenie* led to *perestroika* and *perestroika* became dependent on *glasnost*, opening the way for democratization.[126] So doing,

126 See the excellent journalist's report on the influence of the media in the disintegration of the Soviet Union in Shane (1994).

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he inadvertently triggered a process that ultimately doomed the Communist party, the Soviet state, and his own hold on power. Yet, while for the majority of the Soviet people Gorbachev was the last Communist chief of state, and for the Communist minority he was the traitor who ruined Lenin's heritage, for history Gorbachev will remain the hero who changed the world by destroying the Soviet empire, although he did it without knowing it and without wanting it.

Nationalism, Democracy, and the Disintegration of the Soviet State

The liberalization of politics and the mass media, decided upon by Gorbachev to involve civil society in support of his reforms, resulted in widespread social mobilization on a variety of themes. The recuperation of historical memory, stimulated by an increasingly assertive Soviet press and television, brought into the open public opinion, ideologies, and values from a suddenly freed society, often in confused expression, but with a shared rejection of all sorts of official truths. Between 1987 and 1991, in a social whirlwind of increasing intensity, intellectuals denounced the system, workers went on strike for their demands and their rights, ecologists exposed environmental catastrophes, human rights groups staged their protests, the Memorial Movement reconstructed the horrors of Stalinism, and voters used every opportunity in parliamentary and local elections to reject official candidates from the Communist party, thus delegitimizing the established power structure.

Yet, the most powerful mobilizations, and the direct challenge to the Soviet state came from nationalist movements.[127] In February 1988, the massacre of Armenians by Azeris in Sumgait revived the latent conflict in the Armenian enclave of Nagorno-Karabagh in Azerbaijan, a conflict that degenerated into open warfare and forced the intervention of the Soviet army and the direct administration of the territory from Moscow. Inter-ethnic tensions in the Caucasus exploded into the open, after decades of forced suppression and artificial integration. In 1989, hundreds of people were killed in the Ferghana Valley, in Uzbekistan, in rioting between Uzbeks and Metsketyans. On April 9, 1989, a massive, peaceful demonstration of Georgian nationalists in Tbilisi was repressed with poison gas, killing 23 people, and prompting an investigation from Moscow. Also in early 1989, the

127 Carrere d'Encausse (1991).

Moldavian National Front began a campaign for the independence of the republic and its eventual reintegration into Romania.

However, the most powerful and uncompromising nationalist mobilization came from the Baltic republics. In August 1988, the publication of the 1939 secret treaty between Stalin and Hitler to annex the Baltic republics led to massive demonstrations in the three republics and to the formation of popular fronts in each of them. Thereafter, the Estonian Parliament voted to change its time zone, shifting it from Moscow time to Finland time. Lithuania started issuing its own passports. In August 1989, to protest against the fiftieth anniversary of the Ribbentrop–Molotov pact, two million people formed a human chain stretching over the territories of the three republics. In the spring of 1989, the Supreme Soviets of the three republics declared their sovereignty, and their right to overrule legislation from Moscow, triggering an open confrontation with the Soviet leadership which responded with an embargo of supplies to Lithuania.

Significantly, the Muslim republics of central Asia and the Caucasus did not rebel against the Soviet state, although Islamism was on the rise, particularly among intellectual elites. Conflicts in the Caucasus and central Asia predominantly took the form of inter-ethnic confrontation and political civil wars within the republics (as in Georgia) or between republics (for example, Azerbaijan versus Armenia).

Nationalism was not only the expression of collective ethnic identity. It was the predominant form of democratic movement throughout the Soviet Union, and particularly in Russia. The "democratic movement" that led the process of political mobilization in the main urban centers of the Soviet Union was never an organized front, nor was "Democratic Russia," the popular movement founded by Yuri Afanasiev and other intellectuals, a party. There were dozens of protoparties of all political tendencies, but by and large the movement was profoundly anti-party, given the historical experience of highly structured organizations. The distrust of formalized ideologies and party politics led socio-political movements, especially in Russia, but also in Ukraine, in Armenia, and in the Baltic republics, to structure themselves loosely around two signs of identity: on the one hand, the negation of Soviet communism in whatever form, whether restructured or not; on the other hand, the affirmation of a collective primary identity, whose broadest expression was national identity, the only historical memory to which people could refer after the vacuum created by Marxism–Leninism and its subsequent demise. In Russia, this renewed nationalism found a particularly strong echo among the people as a reaction to the anti-Russian nationalism of other republics. Thus, as has often been the case in history, various nationalisms fed

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each other. This is why Yeltsin, against all the odds, became the only Russian political leader with massive popular support and trust, in spite of (and probably because of) all the efforts of Gorbachev and the CPSU to destroy his image and his reputation. Gennadi Burbulis, Yeltsin's main political adviser in the 1988–92 period, tried to explain, in one of our conversations in 1991, the deep-seated reasons for Yeltsin's appeal to the Russian people. It is worth while to quote him directly:

> What Western observers do not understand is that, after 70 years of Stalinist terror and of suppression of all independent thinking, Russian society is deeply irrational. And societies that have been reduced to irrationality mobilize primarily around myths. This myth in contemporary Russia is named Yeltsin. This is why he is the only true force of the democratic movement.[128]

Indeed, in the critical demonstration of March 28, 1991 in Moscow, when the democratic movement definitively opposed Gorbachev and occupied the streets in spite of his prohibition, defying the presence of army troops, the hundreds of thousands of demonstrators shouted just two rallying cries: "*Rossiya*!" and "Yeltsin!, Yeltsin!" The affirmation of the forgotten past, and the negation of the present symbolized by the man who could say "No!" and still survive, were the only clearly shared principles of a newly born civil society.

The connection between the democratic movement, the nationalist mobilization, and the process of dismantlement of Soviet power was paradoxically predetermined by the structure of the Soviet federal state. Because all the power was concentrated in the Central Committee of the CPSU and in the central institutions of the Soviet state (Congress of People's Deputies, Supreme Soviet of the USSR, Council of Ministers, and Presidency of the USSR), the process of democratization under Gorbachev took the form of allowing competing candidacies (but not free political association) for the soviets of cities, regions, and republics, while keeping under tighter control the USSR Congress of People's Deputies, and the USSR Supreme Soviet. Between 1989 and 1991, a majority of the seats in the local soviets of the main cities, and in the republican parliaments, went to candidates opposed to the official Communist candidates.

The hierarchical structure of the Soviet state seemed to limit the damage inflicted on the mechanisms of political control. Yet, the strategy, deliberately designed by political strategists of the democratic

128 Interview with Gennadi Burbulis, April 2, 1991.

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movement, and particularly those working with Yeltsin, was to consolidate power in the representative republican institutions, and then to use these institutions as a lever of opposition against the Soviet central state, claiming as much power as feasible for the republics. Thus, what appeared to be an autonomist or separatist movement was also a movement to break away from the discipline of the Soviet state, and ultimately to be freed from the control of the Communist party. This strategy explains why the key political battle in 1990–91 in Russia focused on increasing the power and autonomy of the Russian Federation, the only one not to have a president of its republican parliament. Thus, while Gorbachev thought he could claim victory when he won the majority of the popular vote in the referendum on a new Union Treaty on March 15, 1991, in fact the results of this referendum were the beginning of the end of the Soviet Union. Yeltsin's supporters were able to introduce in the ballot a question demanding direct popular election for the presidency of the Russian Federation, with a precise election date, June 12. The approval of this question by the electorate, thus automatically calling for such an election, was far more important than the approval given to the vague proposals of Gorbachev for a new federal state. When Yeltsin became the first Russian chief of state to be democratically elected a fundamental cleavage was created between the representative political structures of Russia and of other republics, and the increasingly isolated superstructure of the Soviet federal state. At this point, only massive, decisive repression could have turned the process back under control.

But the Soviet Communist party was not in a condition to launch repression. It had become divided, disconcerted, disorganized by Gorbachev's maneuvers, and by penetration into its ranks of the values and projects of a revived society. Under the impact of criticism from all quarters, the political *nomenklatura* lost its self-confidence.[129] For instance, the election of Yeltsin as chair of the Russian Parliament in March 1991 was only possible because an important faction of the newly established Russian Communist party, led by Rutskoi, joined the democrats' camp against the nationalist-communist leadership of Polozkov, leader of the majority of the Russian Communist party, who was in open opposition to Gorbachev. In fact, the most influential group of the Central Committee of the CPSU, loosely articulated around Anatoly Lukyanov, chairman of the USSR Supreme Soviet (and a law school classmate of Gorbachev), had decided to draw the

129 The loss of self-confidence by the party *nomenklatura* as a major factor in preventing an early reaction against Gorbachev's reforms was called to my attention by George Breslauer.

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line against further reforms in the fall of 1990. The then appointed Pavlov government aimed at re-establishing the command economy. Police measures were taken to restore order in the cities and to curb nationalism, starting with the Baltic republics. But the brutal assault on the television station in Vilnius by Interior Ministry special forces in January 1991 prompted Gorbachev to ask for restraint and to halt the repression. By July 1991, Gorbachev was ready to establish a new Union Treaty without six of the 15 republics (the Baltic republics, Moldova, Georgia, and Armenia), and to grant extensive powers to the republics as the only way to save the Soviet Union. In his speech to the Central Committee on July 25, 1991, he also outlined an ideological program for abandoning Leninism and converting the party to democratic socialism. He won an easy victory. The real forces of the Central Committee, and the majority of the Soviet government, had already embarked on preparation of a coup against their Secretary General and President, after failing to control the process through standard institutional procedures that were no longer working because most of the republics, and particularly Russia, had broken loose from the control of the Soviet central state.

The circumstances of the August 1991 coup, the event that precipitated the disintegration of the Soviet Union, have not been fully exposed, and it is doubtful whether they will be in a long time, given the maze of political interests woven around the plot. On a superficial level, it seems surprising that a coup organized from the Central Committee of the CPSU with the full participation of the chief of the KGB, the Minister of the Interior, the Minister of Defense, the Vice-president of the USSR, and most of the Soviet government, could fail. And indeed, in spite of all the analysis presented here about the inevitability of the crisis of the Soviet Union, the 1991 coup could have succeeded if Yeltsin and a few thousand supporters had not stood up to it, openly risking their lives, counting on the presence of the media as their symbolic defense, and if, all over Russia and in some Soviet republics, people of all social sectors had not met in their workplaces and voted their support for Yeltsin by sending tens of thousands of telegrams to Moscow to make their position known. After seven decades of repression, people were still there, confused but ready to fight if necessary to defend their new-found freedom. The possible success of the coup in the short term would not necessarily have meant that the crisis of the Soviet Union could have been halted, given the process of decomposition of the whole system. Yet the crisis would have had another denouement, and history would have been different. What determined the coup's failure were two fundamental factors: the attitude of the KGB and the army; and a misunderstanding

of the Communist leadership about their own country as a result of their growing isolation at the summit of the Soviet state. Key units of the security forces refused to cooperate: the elite KGB's Alpha unit refused to obey the order to attack the White House, and received support from key KGB commanders; the paratroopers under the command of General Pavel Grachev declared their loyalty to Gorbachev and Yeltsin; and, finally, the Air Force Commander, General Shaposhnikov, threatened the Minister of Defense that he would bomb the Kremlin. Surrender came within hours of this ultimatum. These decisions resulted from the fact that the army and the KGB had been transformed during the period of *perestroika*. It was not so much that they were active supporters of democracy, but that they had been in direct contact with the evolution of society at large, so that any decisive move against the established chain of command could divide the forces and open the way for civil war. No responsible commander would risk a civil war in an army equipped with a gigantic and diverse nuclear arsenal. In fact, the organizers of the *putsch* themselves were not ready to start a civil war. They were convinced that a show of force and the legal removal of Gorbachev, following the historical precedent of Khrushchev's successful ousting, would be enough to bring the country under control. They underestimated Yeltsin's determination, and they did not understand the new role of the media, and the extent to which the media were outside Communist control. They planned and executed a coup as if they were in the Soviet Union of the 1960s, probably the last time they had been in the street without bodyguards. When they discovered the new country that had grown up in the last quarter of the century, it was too late. Their fall became the fall of their party-state. Yet, the dismantling of the Communist state and, even more, the break up of the Soviet Union were not a historical necessity. They required deliberate political action in the following months, enacted by a small group of decisive revolutionaries, in the purest Leninist tradition. Yeltsin's strategists, led by Burbulis, the undisputed Machiavelli of the new democratic Russia, took to the limit the plan of separation between the socially rooted institutions of the republics and the by then isolated superstructure of the Soviet federal state. While Gorbachev was desperately trying to survive the dissolution of the Communist party, and to reform Soviet institutions, Yeltsin convinced the Ukrainian and Byelorussian Communist leaders, quickly reconverted to nationalism and independentism, to secede jointly from the Soviet Union. Their agreement in Belovezhskaya Pushcha on December 9, 1991 to dissolve the Soviet state, and to create a loose Commonwealth of Independent States as a mechanism to distribute the legacy of the defunct Soviet Union among the newly sovereign

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republics, signaled the end of one of the boldest and most damaging social experiments in human history. But the ease with which Yeltsin and his aides undertook the dismantlement process in only four months revealed the absolute decomposition of an overgrown state apparatus that had become uprooted from its own society.

The Scars of History, the Lessons for Theory, the Legacy for Society

The Soviet experiment marked decisively a twentieth century that, by and large, revolved around its development and consequences for the whole world. It cast a giant shadow not only over the geopolitics of states, but also over the imaginary constructions of social transformation. In spite of the horrors of Stalinism, the political left and social movements around the world looked to Soviet communism for a long time at least as a motive of hope, and very often as a source of inspiration and support, perceived through the distorting veil of capitalist propaganda. Few intellectuals of the generations born in the first half of the century escaped the fascination of the debate about Marxism, communism, and the construction of the Soviet Union. A large number of leading social scientists in the West have constructed their theories for, against, and in relation to the Soviet experience. Indeed, some of the most prominent intellectual critics of Soviet communism were influenced in their student years by Trotskyism, an ultra-Bolshevik ideology. That all this effort, all this human suffering and passion, all these ideas, all these dreams, could have vanished in such a short period of time, revealing the emptiness of the debate, is a stunning expression of our collective capacity to build political fantasies so powerful that they end up changing history, though in the opposite direction of intended historical projects. This is perhaps the most painful failure of the communist utopia: the abduction and distortion of the revolutionary dreams and hopes of so many people in Russia, and around the world, converting liberation into oppression, turning the project of a classless society into a caste-dominated state, and shifting from solidarity among exploited workers to complicity among *nomenklatura* apparatchiks on their way to becoming ringleaders of the world's shadow economy. On balance, and in spite of some positive elements in social policies in the post-Stalin era, the Soviet experiment brought considerable suffering to the peoples of the Soviet Union, and to the world at large. Russia could have industrialized and modernized otherwise, not without pain but without the human holocaust that took place during Stalin's period.

Relative social equality, full employment, and a welfare state were accomplished by social-democratic regimes in neighboring, then poor, Scandinavia, without resorting to such extreme policies. The Nazi machine was defeated not by Stalin (who, in fact, had decimated and weakened the Red Army just before the war to impose his personal control) but by the secular Russian will against the foreign invader. The domination of the Comintern over a large segment of the world's revolutionary and socialist movements sterilized energies, stalled political projects, and led entire nations to dead ends. The division of Europe, and of the world, into military blocs enclosed a substantial part of the technological advances and economic growth of the post-World War II years in a senseless arms race. To be sure, the American (and to a lesser extent European) Cold War establishment bears equal responsibility for engaging in the confrontation, for developing and using nuclear weapons, and for building up a bipolar symmetry for the purpose of world domination.[130] However, without the coherence, strength, and threatening façade of Soviet power, Western societies and public opinion would hardly have accepted the expansion of their warfare states and the continuation of blatant colonial enterprises, as has been shown after the end of the Cold War. Furthermore, the building of a superpower without relying on a productive economy and an open society has proved to be unsustainable in the long run, thus ruining Russia, and the other Soviet republics, without much apparent benefit to their people, if we except job security, and some improvement of living conditions in the 1960–80 period: a period that is now idealized in Russia by many because of the desperate situation in which large segments of the population now find themselves in the wild transition to wild capitalism.

Yet, the most damaging historic irony was the mockery that the communist state made of the values of human solidarity in which three generations of Soviet citizens were educated. While most people sincerely believed in sharing difficulties, and in helping each other to build a better society, they gradually discovered, and finally realized,

130 The history of the Cold War is full of events and anecdotes that reveal how the two military blocs kept feeding their own defensive paranoia beyond reasonable limits. An illustration of this mentality, too quickly forgotten, is the 1995 revelation of the mystery of Soviet submarines in Swedish waters. As some may remember, for more than two decades Swedish naval forces, supported by the Western Alliance, claimed that the country's maritime borders were repeatedly intruded upon by Soviet submarines, and they resorted to regular dropping of explosive depth-charges broadcast by television all over the world. Only in 1995 did Sweden confirm "an embarrassing fact: that its defense forces have been hunting minkies, not Russian submarines . . . New hydrophonic instruments introduced into the Swedish navy in 1992 showed that minkies could give off sound patterns similar to those of submarines" (*New York Times*, February 12, 1995, p. 8). As for the fate of the minkies, there is no reference in the report.

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that their trust had been systematically abused by a caste of cynical bureaucrats. Once the truth was exposed, the moral injuries thus inflicted on the people of the Soviet Union are likely to unfold for a long time: the sense of life lost; human values at the roots of everyday efforts degraded. Cynicism and violence have become pervasive throughout society after the hopes, inspired by democracy in the aftermath of the Soviet collapse, quickly faded away. The successive failures of the Soviet experiment, of *perestroika*, and of democratic politics in the 1990s have brought ruin and despair to the lands of Russia and the former Soviet republics.

As for intellectuals, the most important political lesson to be learnt from the communist experiment is the fundamental distance that should be kept between theoretical blueprints and the historical development of political projects. To put it bluntly, all Utopias lead to Terror if there is a serious attempt at implementing them. Theories, and their inseparable ideological narratives, can be (and have been) useful tools for understanding, and thus for guiding collective action. But only as tools, always to be rectified and adjusted according to experience. Never as schemata to be reproduced, in their elegant coherence, in the imperfect yet wonderful world of human flesh. Because such attempts are at best cynical rationalizations of personal or group interests. At worst, when they are truly believed and enacted by their believers, such theoretical constructions become the source of political fundamentalism, always an undercurrent of dictatorship and terror. I am not arguing for a bland political landscape free of values and passions. Dreams and projects are the stuff of which social change is made. A purely rational, selfish subject, of the "free rider" type, would always stay at home, and let the work of historical change be done by "the others." The only problem with such an attitude (the best "economic rational choice") is that it assumes collective action from others. In other words, it is a form of historical parasitism. Fortunately, few societies in history have been constructed by parasites, precisely because they are too selfish to be involved. Societies are, and will always be, shaped by social actors, mobilized around interests, ideas and values, in an open, conflictive process. Social and political change is what ultimately determines the fate and structure of societies. Thus, what the Soviet experience shows is not the need for a non-political, value-free process of social transformation, but the necessary distance and tension between theoretical analysis, systems of representation of society, and actual political practice. Relatively successful political practice always muddles through the limits of history, not trying to progress by leaps and bounds, but adapting to the contours of social evolution and accepting the slow-motion

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process of transformation of human behavior. This argument has nothing to do with the distinction between reform and revolution. When material conditions and subjective consciousness are transformed in society at large to a point where institutions do not correspond with such conditions, a revolution (peaceful or not, or in between) is part of the normal process of historical evolution, as the case of South Africa shows. When vanguards, who are almost invariably intellectual vanguards, aim at accelerating the historical tempo beyond what societies can actually take, in order to satisfy both their desire for power and their theoretical doctrine, they may win and reshape society, but only on the condition of strangling souls and torturing bodies. Surviving intellectuals may then reflect, from the comfort of their libraries, upon the excesses of their distorted revolutionary dream. Yet, what it is crucial to learn as the main political lesson of the Soviet experience is that revolutions (or reforms) are too important and too costly in human lives to be left to dreams or, for that matter, to theories. It is up to the people, using whatever tools they may have in their reach, including theoretical and organizational tools, to find and walk the collective path of their individual lives. The artificial paradise of theoretically inspired politics should be buried for ever with the Soviet state. Because the most important lesson from the collapse of communism is the realization that there is no sense of history beyond the history we sense.

There are also important lessons to be drawn for social theory in general and for the theory of the information society in particular. The process of social change is shaped by the historical matrix of the society in which it takes place. Thus, the sources of statism's dynamics became at the same time its structural limitations and the triggers of contradictory processes within the system. The capture of society and the economy by the state allows for the full mobilization of human and material resources around the objectives of power and ideology. Yet, this effort is economically wasteful because it has no built-in constraints in the use and allocation of scarce resources. And it is socially sustainable only as long as civil society is either subdued by sheer coercion or reduced to a passive role of contributing to work and public service at the lowest possible level. Under statism, as soon as society becomes active, it also becomes unpredictable in its relationship to the state. The state itself is weakened by its inability to mobilize its subjects, who refuse their cooperation, either through resistance or withdrawal.

Soviet statism faced a particularly difficult task in managing its relationship to economy and society in the historical context of the transition to informationalism. To the inherent wasteful tendencies of

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the command economy, and to the limits imposed on society by the structural priority given to military power, were added the pressures of adapting to the specific demands of informationalism. Paradoxically, a system built under the banner of the development of productive forces could not master the most important technological revolution in human history. This is because the characteristics of informationalism, the symbiotic interaction between socially determined processing of information and material production, became incompatible with the monopoly of information by the state, and with the closing of technology within the boundaries of warfare. At the level of organizations, the structural logic of vertical bureaucracies was made obsolete by the informational trend toward flexible networks, much as happened in the West. But, unlike in the West, the vertical command chain was at the core of the system, making the transformation of large corporations into the new forms of networked business organizations much more difficult. Furthermore, Soviet managers and bureaucrats did discover flexibility and networking as an organizational form. But they applied it to the development of the shadow economy, thus undermining the control capacity of the command economy from the inside, increasing the distance between the institutional organization of the Soviet system and the functional demands of the real economy.

Moreover, the information society is not the superstructure of a new technological paradigm. It is based on the historical tension between the material power of abstract information processing and society's search for meaningful cultural identity. On both counts, statism seems to be unable to grasp the new history. Not only does it suffocate the capacity for technological innovation, but it appropriates and redefines historically rooted identities in order to dissolve them into the all-important process of power-making. Ultimately, statism becomes powerless in a world where society's capacity to constantly renew information and information-embodying technology are the fundamental sources of economic and military power. And statism is also weakened, and ultimately destroyed, by its incapacity to generate legitimacy on the basis of identity. The abstraction of state power on behalf of a rapidly fading ideological construction cannot endure the test of time against the double challenge of historical traditions and individual desires.

Yet, in spite of these fundamental structural contradictions, Soviet statism did not collapse under the assault of social movements born of these contradictions. An important contribution of the Soviet experience to a general theory of social change is that, under certain conditions, social systems can disappear as a result of their own pitfalls

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without being decisively battered by consciously mobilized social actors. Such conditions seem to be the historical work of the state in destroying the foundations of civil society. This is not to say that the mosaic of societies that formed the Soviet Union was not capable of political insurgency, social revolt, or even revolutionary mobilization. Indeed, the nationalist mobilization of the Baltic republics, or the massive democratic demonstrations in Moscow and Leningrad in the spring of 1991, showed the existence of an active, politically conscious segment of the urban population lurching to overcome the Soviet state. Yet, not only was there little political organization, but, more importantly, there was no consistent, positive social movement projecting alternative views of politics and society. In its best expression, the Russian democratic movement toward the end of the Soviet Union was a free-speech movement, mainly characterized by the recovery of society's ability to declare and speak out. In its mainstream manifestation, the Russian democratic movement was a collective denial of the experience that society had lived through, without further affirmation of values other than the confused reconstruction of an historical, national identity. When the obvious enemy (Soviet communism) disintegrated, when the material difficulties of the transition led to the deterioration of daily life, and when the gray reality of the meager heritage gained after seven decades of daily struggle settled in the minds of the ex-Soviet people, the absence of a collective project, beyond the fact of being "ex," spread political confusion, and fostered wild competition in a race for individual survival throughout society.

The consequences of a major social change resulting from the disintegration of a system, rather than from the construction of an alternative project, can be felt in the painful legacy that Russia and the ex-Soviet societies have received from Soviet statism, and from the pitfalls of *perestroika* policies. The economy was wrecked, to the unbearable pain of the people, by speculative maneuvers for the benefit of the *nomenklatura*; by irresponsible advice on abstract free-market policies by the International Monetary Fund, some Western advisers, and politically inexperienced Russian economists, who suddenly found themselves in the posts of high command; and by the paralysis of the democratic state as a result of byzantine quarrels between political factions dominated by personal ambitions. The criminal economy grew to proportions never witnessed in a major industrial country, linking up with the world's criminal economy, and becoming a fundamental factor to be reckoned with, both in Russia and in the international scene. Short-sighted policies from the United States, in fact aimed at finishing off the Russian Bear in world politics, triggered nationalist reactions, threatening to fuel again the arms race

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and international tension. Nationalist pressures within the army, political maneuvers in Yeltsin's Kremlin, and criminal interests in power positions, led to the catastrophic adventure of war in Chechn'ya. The democrats in power became lost between their novice faith in the power of the market and their Machiavellian strategies tailored for the backrooms of Moscow's political establishment but rather ignorant of the basic condition of a traumatized population, spread around the huge territory of an increasingly disarticulated country.

The most enduring legacy of Soviet statism will be the destruction of civil society after decades of systematic negation of its existence. Reduced to networks of primary identity and individual survival, Russian people, and the people of the ex-Soviet societies, will have to muddle through the reconstruction of their collective identity, in the midst of a world where the flows of power and money are trying to render piecemeal the emerging economic and social institutions before they come into being, in order to swallow them in their global networks. Nowhere is the ongoing struggle between global economic flows and cultural identity more important than in the wasteland created by the collapse of Soviet statism on the historical edge of the information society.