

Part IV
Reflections

Chapter 17

Why Did the Cold War End When and As It Did?

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We Cold Warriors—no, Millennials, we are not from “Game of Thrones”—did not expect the conflict of our lifetimes to end in our lifetimes. How wrong we were, to our astonishment and gratification. If not the end of history, it certainly was a fulcrum of history. Much has been written about *how* the Cold War ended, under particular circumstances. But understanding *why* it ended is at least as important, not just for history’s sake but for what it may tell us about the behavior of societies and states in times of change and pressure.

The facile answer to why the Cold War ended when it did is that the Soviet Union ended when it did. True, the Cold War can be said to have ended in 1989, when the Kremlin acquiesced in anti-communist revolutions in Eastern Europe, whereas the Soviet Union was formally dissolved two years later. But Gorbachev’s main motivation to end the Cold War was to rescue the Soviet Union. Whether he would have sought to end the Cold War if the Soviet Union was not failing is moot.

To redirect the question, then, why did the Soviet Union collapse when it did? Briefly, in the words of an old sailor, the ship of Soviet communism, already listing badly, was capsized by the effects of the information revolution. When its skipper failed to right it, it sank as peacefully as “an old man slipping into a warm bath.”¹ By surprise if not default, the West won the Cold War. The end was unpredicted yet, on reflection, not so unpredictable.

The full story is rather complicated. Soviet and Western leaders began working systematically to lower East-West tensions after new General Secretary Mikhail Gorbachev, shaken by the Chernobyl reactor catastrophe, decided that domestic reform and international cooperation were essential. Fundamentally, these events occurred because Soviet communism—a mix of Marxist ideology, economic central-planning, state and party bureaucracy, Russian imperialism, and confrontation

with the West—collapsed of its own dead weight. Its ideology could not tolerate truth; its economic central-planning retarded modernization; its bureaucracy was obese; its propaganda was stale; its military was outsized; the arms race drained it of investment capital; and its imperialism, including demands for military intervention, caused bankruptcy and, in Afghanistan, intolerable loss of life. The Soviet Union could no longer compete with the West technologically, economically, militarily, or in the war of ideas. To make matters worse, the price of its principal revenue source, fossil fuel, nose-dived.

In these conditions, the comprehensive reform launched in the mid-1980s by Gorbachev—following alarms sounded and tepid reforms attempted by his predecessor, Yuri Andropov—seemed like a good idea at the time.² *Perestroika* would restructure the economy by introducing a modest role for actual demand, market-based pricing, and return-on-capital investing. *Glasnost* would open the Soviet state and communist party by allowing information to move more freely, promote truthfulness, and encourage new ideas. The idea—or hope—was that both communism and the Soviet Union would become humane, accountable, legitimate, innovative, productive and sustainable. “New Thinking” would overhaul foreign policy and produce a negotiated way out of the Cold War. In turn, this would allow access to new technology, which was advancing rapidly and transforming every sector, including the military, in the West.

That Gorbachev believed that these reforms could work suggests that this favorite son of Soviet communism—and to this day a devout socialist—did not understand that it was beyond saving. We now know that *glasnost* and *perestroika* were not just “too little too late” and doomed to fail but would hasten the Soviet end-days. These reforms gave rise to unafraid and interconnected dissent, unfulfillable expectations, unfavorable comparisons to life in the West, and awareness that the glorious story of a successful and harmonious multinational Soviet state was largely fabricated. Revolution swept across Eastern Europe, where communism had been imposed by Stalin’s army two generations earlier and still had shallow roots. In parallel, support for communism crumbled in the Soviet Union itself, with the Baltic republics energized to demand independence, separatism on the rise in Ukraine, and Boris Yeltsin’s ascent as an anti-establishment—essentially anti-communist—Russian nationalist.

Still, why did the Cold War and the Soviet Union not drag on but instead end *then*? Mainly, the Soviet political-economic system did not—could not—participate in the information revolution. It could not compete either in inventing or using this technology, which depends on free enterprise, consumer demand, and minimal state interference. All along, the West had a profound, if sometimes latent, advantage in innovative dynamism, propelled not by the state but by people and enterprises working to advance their particular interests, usually—not always—producing human progress. The information revolution tapped into this advantage, and it put the West on course to prevail over Soviet communism. While American and fellow Western innovators were not out to win the Cold War (nothing was further from their minds), their role was pivotal.

Communism suffocated innovative dynamism. Soviet scientific and higher-education systems were still excellent. However, because information technology requires initiative, rewards risk-taking, and relies on both consumer and capital markets, state-planned production and resource allocation were anathema. Nor could the Soviet state control the networking, facts, truths, and new ideas this technology offered. Thus, the information revolution would not only bypass but also undermine the Soviet Union. Changes required of the Soviet Union in order to succeed—even to survive—in the information age contradicted its essence.

This contradiction was not well understood at the time in the West because technological upheaval and East-West strategic competition were happening in mutually exclusive realms by entirely separate institutions and by people with unconnected perspectives and agendas. The U.S. information industry was, by its ideological predisposition, divorced from government.³ It was engaged in fierce international competition, not with the Soviet Union but with Japan. In the author's stint in this sector in the 1980s—a formative time for both the sector and the author—the Soviet Union was literally never mentioned, because it was irrelevant to the opportunities and business at hand. One does recall a speaker at a business roundtable in 1982 stating matter-of-factly that the Cold War was over, and the West had won. By the late 1980s, the U.S. military would harness information technology to transform warfare and give the United States unrivalled superiority. Moreover, globalization of digital infrastructure and, as a consequence, easier ac-

cess to information would render the Kremlin incapable of hiding the truth and controlling society.

But let's not get ahead of ourselves. The pages that follow cover communism's economic decline (the "listing"), the information revolution in economic, military and political affairs (the "capsizing"), and the cumulative effect of these developments on the viability of Soviet communism and outcome of the Cold War (the "sinking").

Before proceeding, though, the reader is invited on a brief excursion into theories of why certain complex human systems, like the Soviet Union, prove unstable and unsustainable, while others—the Peoples' Republic of China, so far—do not.

Why Some Complex Human Systems May Fail: Fantasies and Rigidities

Two theories concerning the sustainability of complex (socio-economic-political-cultural) human systems bear on our case. The first is that of *fantasy ideology*, which has been ricocheting around the halls of political science in recent decades.⁴ Laced with psychology, fantasy-ideology theory tries to explain why groups are drawn and conform to certain all-encompassing and closed closed-minded explanations—predictions *and* prescriptions—of human struggle, progress, and end-states. Nazism offered a racial explanation. Marxism held that human affairs can be explained as a class struggle between owners and workers. Salafism calls on all Muslims to reject modernity, return to 7th-century piety, and do battle with those who disbelieve or get in the way. What such ideologies have in common is that they discount or reject the way people naturally and actually are inclined to *behave*, thus earning the qualifier "fantasy."⁵ They are, in a word, impractical. So they require obedience, which dictates coercion, undermines legitimacy and can be sustained only with isolation and still greater coercion. Neither capitalism nor nationalism is such an ideology unless taken to such extremes that it brooks no competing ideas. Liberal democracy is not a fantasy ideology because it is inclusive by definition and therefore resilient. In this regard, what may seem on the surface to be weak states, e.g., democracies, are in fact robust, whereas autocracies may need to rely on power and control to be viable.⁶

States organized around fantasy ideologies tend toward command economies driven by heavy state investment and mobilized labor, which may not be sustainable.⁷ Hitler and Stalin drove production with top-down dictates, dedicated cadres, informers, brow-beaten workers, and the prospect of war—all justified by the ideology and by the enemies they saw at home and abroad, such as Jews and democracies. Such economic systems have expiration fates (though unknown dates). In Hitler's case, it led directly to war, extermination of internal enemies, and final destruction. In the Soviet case, it led to collapse because society, along with conquered nationalities, could no longer be mobilized by a failed idea, a bogus economic system based on that idea, or force that became too costly to use.

A different but related theory is that of *complex adaptive systems*—a way of explaining why some organizations thrive and others fail in the face of change.⁸ In political-science terms, a complex adaptive system is one in which “micro-level” (fine-grained) sensitivity to a changing external environment guides productive “macro-level” (aggregate) adjustment. Such sensitivity is conditioned by success and failure, possibly cyclical. Because open complex systems are dynamic, they progress better than closed ones. Fantasy ideologies, precisely because they cannot tolerate information that does not fit, are bound to be inflexible and more brittle than they may seem. How long would Nazism have endured had it not been destroyed in the war it started?

A closed system can survive by using brutality, xenophobia, isolation, cult worship of a leader, and acceptance of depressed living conditions: look at North Korea's seventy-year life-span—thirty of them coming after the Soviet Union ended—against stiff odds. Some eventually accept reform and openness when the alternative is increased oppression: look at the spread of democracy in East Asia and Latin America. As for the Soviet system, even after molting its fantasy ideology, under Khrushchev, it did not become adaptive. It did become more complex as its economy diversified, however, which made central planning more tortuous and markets more essential. As we will see, Gorbachev knew what was coming and tried reform—but by then the real choice was between failure and complete transformation.

This leaves us with two questions. First, why did Soviet communism collapse when it did? Second, why has “communist” China not

collapsed? The answer to the first question is that these theories could have predicted that Soviet communism would have to be transformed or would collapse, but not *when*. For that, we must examine the particulars, in the pages to come. A brief answer to the China question will come after the Soviet case.

Listing Ship: Worsening Prospects for the Soviet Economy and Empire

The Soviet economy grew rapidly until about 1970, even allowing for chronic data-fiddling. Then, being a command economy, productivity began to fall. The requirement to meet production targets and avert risk led managers to shun innovation in general and new technology in particular. More fundamentally, Soviet communism discouraged individual initiative, without which sustainable economic progress is impossible in the modern era. Revolutionary technology works only to the extent organizations are restructured in order to exploit it; yet adaptability was not a Soviet quality, at the macro or micro level. Agency resided with the state, not the individual.

The focus of Soviet research and development (R&D) was to improve military capabilities—certainly not to satisfy consumers. The economy depended on heavy industry, and even that was decoupled from demand. Agriculture, so important (and brutish) in earlier times, lacked effective, market-based distribution. Although unsurpassed in arable land and receiving huge state investment, Soviet food-growing was extremely inefficient (except for the 2% in private hands), and the need to import grain and meat sky-rocketed. Modernizing non-military industry was difficult without private capital. Full employment did not improve living standards or reward investment, which was determined by the state, not by markets. Per capita GDP stalled after 1970.

What let Soviet leaders off the hook were rising revenues in what by then had become the economy's main strength (and eventual bane): oil and gas production. Bookended by the energy crises of 1973 and 1979, high prices and gas pipeline deals sustained the growth of an economy that was otherwise in decay. Funds stuffed state coffers, to the satisfaction of officials. Only as fossil-fuel prices plummeted in the 1980s

did Soviet economists and leaders—the truthful ones—appreciate their dire straits. Debt to Western banks swelled to pay for imports.

Meanwhile, the global economy was integrating all around the Soviet Union, to the benefit of the United States, its allies, and China, among others. But the Soviet economy remained isolated and uncompetitive except in oil, gas, and other extractive stuff. Trade comprised about 4% of Soviet GDP—compare that to 50% of Chinese GDP today!—and most of that was raw materials and arms. The ruble was not convertible. Soviet workers made little that anyone else wanted to buy. By the 1980s, even Soviet-made arms were less desirable for countries that could afford choice, as they became harder to maintain and fell a generation behind Western competition. While foreign direct investment grew globally, the Soviet economy was not on the list of interesting destinations (compared to, say, East Asia). The inflexible and isolated Soviet economy was trailing by a widening margin in productive enterprise. In the “workers’ paradise,” health care deteriorated, the mortality rate rose, and cynicism about party and the state grew.

On top of its domestic woes, maintaining the Soviet Union’s empire, competing with the West militarily and, to a lesser degree, providing foreign aid comprised a huge economic drain for a weak economy. By 1980, the combined GDP of the alliance arrayed against the Soviet bloc—the United States and its six largest allies—was five times its size and was entering a period of growth based on new technology and globalization. Moscow shoveled more and more resources into the maw of the defense, espionage, and internal security services. By the time Gorbachev introduced *perestroika*, Soviet military spending had climbed to 15-17% of GDP (the highest level in the Cold War). This proved worse than wasteful, as the Soviets’ opponents responded with increased military spending from the base of vastly bigger and healthier economies.⁹

The Americans became especially alarmed with the Soviet buildup after the fall of Iran’s shah and the invasion of Afghanistan in 1979. With U.S. military outlays on the rise under presidents Carter and Reagan and, as important, emphasis having shifted from Vietnam back to Europe and to Southwest Asia, the Soviets answered with still more tanks, artillery, planes, and missiles. Ironically, this Soviet buildup caused Western intelligence, defense, academic and political figures to

overlook the growing inability of the Soviet Union to compete economically, technologically and, eventually, militarily. Recall the Committee on the Present Danger, which supplied thirty-three senior officials of the incoming Reagan administration, where they feasted on CIA assessments of a growing Soviet threat.

The 1980s began inauspiciously for the Soviet Union in its nuclear competition with the United States and its NATO allies. Upon achieving parity in intercontinental nuclear delivery systems, as formalized by the SALT II agreement, the Soviets shifted priority to the nuclear threat to Western Europe, notably in the form of the SS-20 intermediate-range missile. By menacing U.S. allies with weapons that could not reach the United States, the Soviets threatened to “decouple” the U.S. strategic deterrent from NATO’s defense.¹⁰ However, the United States and its allies responded by agreeing in 1979 to deploy in Western Europe intermediate-range nuclear forces capable of hitting the Soviet Union. The Kremlin had not only failed in its decoupling scheme, but now it faced the prospect of a new nuclear threat.

There ensued a Soviet propaganda and fifth-column campaign to mobilize the European Left to oppose deployment of NATO missiles and to fracture and paralyze European coalition governments. Though this led to massive demonstrations, it failed. Whatever resonance Soviet (“fantasy”) ideology once had in European opinion, it had by then been depleted by revelations of Stalin’s crimes and Soviet use of force in Hungary (1956), Czechoslovakia (1968), and Afghanistan (1979), and at that very moment threats against Poland’s Solidarity movement. By the time NATO systems were deployed, Soviet leaders had to concede that they could not crack Alliance cohesion or resolve.

Meanwhile, the economic burden of the Cold War was being made heavier by imperial “over-reach.”¹¹ Afghanistan was the tipping point. Although Army Chief of Staff Ogarkov warned that the Red Army had zero experience in counterinsurgency and could not promise success, his aging masters, Gromyko, Ustinov and Andropov—Brezhnev was fading by then—forged ahead anyway. Within two years of a ten-year intervention, it was should have been clear that the war could not be won, was bleeding the Soviet economy, and was fomenting discontent, especially among families whose sons did not come home and who asked “For what?”

When Solidarity challenged communist rule in Poland, the Kremlin first decided to send in troops *only if* the Jaruzelski government requested them. A year later, on further consideration—with war in Afghanistan going badly—it decided against intervention *even if* requested. KGB chief and future party General Secretary Andropov insisted that it was more important to “save our own country” than to maintain communism in Poland.¹² Although the Brezhnev Doctrine was not officially cancelled until 1988 by Gorbachev, forces was no longer an affordable option to save communism elsewhere, including East Central Europe. One reason the Cold War ended when it did was that the Soviet Union became too weak to sustain communism militarily.

Yet, blinkered Western fixation with Soviet military spending and hardware counts, on one side, and misplaced confidence of Soviet leaders in reforming communism, on the other, obscured what was happening. U.S. government institutions regarded the Soviet system as monolithic, robust and increasingly threatening. Western economists and intelligence analysts were guilty—a strong but apt word—of overestimating the scale and growth of the Soviet economy and missing signs that it was in growing trouble. The insatiable appetite and rising costs of the Soviet military added to nominal GDP, economic growth-rate, investment and R&D. The East-West arms race made the Soviet economy look hale when in fact it was sick. Its puny consumer sector was not understood by either side to be a liability, even though consumer demand drives information technology.

Meanwhile, Soviet visibility into the severity of economic weakness was blocked by production-output metrics, which were regularly inflated and anyway ignored that such output was misaligned with real demand, owing to the absence of markets. As noted, productivity was declining, and living conditions were not keeping pace with (misleading) GDP growth. These problems got worse as the economy became too complicated for central-planners to grasp, much less to manage.

Ironically, the Soviets installed some mainframe computers to help them with economic planning and tracking; but rapid progress in computing systems—first mini-computers, then distributed processing—rendered these machines and their clunky software obsolete. There was no mechanism for the Soviets to stay up to speed in information tech-

nology. Just imagine if the U.S.-led information revolution had been directed by the government!

In sum, while the Soviet economy was becoming both too sick and too complex to be managed by the state, the information revolution had begun to transform advanced market economies of the Soviets' enemies *and* to integrate the world economy to their advantage. The only role for the Soviet Union was to sell fuel for other's growing economies. A steep drop in energy prices, from \$38/barrel in 1981 to \$13/barrel in 1987, knocked out the last crutch of the Soviet economy and the chief source of revenue for the Soviet state. Revenue from fossil fuel contracted sharply and could no longer postpone the day of reckoning.

Cap sizing: The Information Revolution

The decline of the Soviet economy began before the information revolution did (around 1980)—which could not have helped it anyway because of communism's incompatibility with these technologies. By the time Soviet leaders came to grips with the truths and implications of both economic and political deterioration, in the mid-1980s, the United States and its allies in Europe and East Asia had begun to realize the promise of these (*their!*) technologies. Western economic and, later, military momentum picked up just when the Soviet system began to break down.

As Joseph Nye put it: "At the end of the 20th century, the major technological change was the growing role of information as the scarcest resource of an economy. The Soviet system was inept at handling information...because of its deep secrecy."¹³ When Gorbachev came into office in 1985, there were 50,000 personal computers in the Soviet Union compared to 30,000,000 in the United States. That's roughly one for every six thousand Soviet citizens compared to roughly one for every eight Americans. Again, the significance of such a disparity was not understood at the time because the information revolution occurred largely beyond government's field of vision.

While the computer age began in the 1950s, the information revolution did not begin until computers and telecommunications were digitized and linked. In the beginning were computers and, separately, telephones. Certain technological breakthroughs, notably in mi-

cro-processing, fiber-optic and satellite transmission, packet-switching and cellular telephony, led to broad-band digital data-networking (or distributed processing). Deregulation of telecommunications and the breakup of the Bell System in 1984 enabled computer-communications integration and competition, which was then propelled by the demands of large Western business enterprises. Voila!—email, the Internet, the World Wide Web, global digital infrastructure, and network-based restructuring of organizations from banks to airlines to utility companies to government agencies, chiefly U.S.-led.

For all the headaches it has caused society—spam, e-porn, unfounded news, hacking, loss of privacy, job-robbing robotics—the ability to share information and collaborate regardless of distance has been breathtakingly positive. For one thing, firms were now able to distribute functions optimally while managing seamlessly, a boon to efficiency and spur to globalization. Productivity increased sharply, as automation allowed humans to do what they do best: think. Education has expanded its reach. Banks have networked. Business-to-business and customer-to-supplier links have been forged. These and many other advancements have been concentrated among the nations that lead in the invention and production of information technologies, which in the latter stages of the Cold War were, first and foremost, the United States, followed by its European and East Asian allies—the same coalition that stood against the Soviet Union.

While the U.S. military was instrumental in supporting early some technologies of the digital revolution, its acquisition red-tape and industrial inertia held it back from the accelerating progress of these technologies in the economy at large. Nonetheless, by 1990, as first on display in the Gulf War, the U.S. military was leading a “revolution in military affairs” (aka “network-centric warfare,” aka “targeting revolution”) involving conventional forces. The resolution and coverage of sensors were rapidly improving; data networks fused their voluminous products; munitions gained pin-point accuracy at any range; collateral damage was reduced; global-positioning systems gave ships, planes and weapons near-perfect navigation regardless of location; off-board guidance and microelectronics brought per-weapon costs down and lethality up; networking facilitated integrated joint command-and-control and operations.

For a while, U.S. forces had a near-monopoly in applying digital technologies, which were mostly driven by its vast commercial markets, revenues and R&D. Until now—with China’s technological and military rise—this military superiority enabled the United States to dispatch joint forces anywhere at will to wage lop-sided combat with few casualties (e.g., liberation of Kuwait and air campaign against Serbia). This pattern was to the consternation yet envy of the Soviets.

Compared to its revolutionary impact on conventional military affairs, the impact of the digital revolution on strategic-nuclear capabilities and competition has been muted. Warning systems, missile guidance, infrastructure for command, control and communications, and computerized weapon-testing have all been modernized, and nuclear weapons themselves have been updated. But core strategic hardware—bombers, bombs, missiles—has endured. Moreover, the need for humans to manage tightly all nuclear operations has inhibited a comparable information-technology “revolution in nuclear affairs.”

Although the United States did not seek to achieve strategic-nuclear superiority, the Soviets were alarmed by U.S. work on ballistic missile defense. The Strategic Defense Initiative, dubbed “Star Wars,” was little more than a twinkle in Ronald Reagan’s eye, for the technologies needed to defend against a large nuclear-missile strike did not—for that matter, still do not—exist. However phantasmagorical it was, Star Wars was seen by the Soviets as a looming threat to their strategic deterrent that would give the United States a potential first-strike capability and, consequently, an advantageous position in geo-politics and crises. In hindsight, we can see that the Soviets were so amazed by U.S. prowess in information technology that they ignored the infeasibility of large-scale missile defense. In any case, this clearly added to their gloom concerning the East-West arms race and their Cold War burdens.

The Soviets were in fact able to maintain rough strategic-nuclear equivalence with the United States, but they were slipping behind qualitatively in conventional capabilities, something bean-counters on neither side could discern. After Vietnam, the Pentagon, led by technologist Harold Brown, embarked on a new “long-term defense program,” to which NATO allies signed on, focused on the Warsaw Pact’s massive mechanized threat to Western Europe. New technologies—precision-guided munitions, cruise missiles, advanced and extended

intelligence, surveillance and reconnaissance (ISR), and broad-band communications—enabled new concepts of operations. The most important of these was “air-land battle,” which harmonized ground combat with air strike, and ISR-enhanced targeting of “second-echelon” Pact forces and support. The age of the tank offensive—the Red Army’s stock-in-trade—was finished.

Having already been induced by NATO nuclear-force deployments to enter into the Intermediate-range Nuclear Forces (INF) Treaty in 1988, the Soviets—under a leader determined to end the Cold War—entered into a Treaty on Conventional Forces in Europe (CFE) in 1990. The latter imposed equal and lower limits on tanks, artillery, combat aircraft, etc., which the Soviets had long resisted in order to maintain their quantitative advantage. Both these treaties signified the end of the military confrontation and arms race that marked the Cold War. In the analysis here, they reflected the growing inability of the Soviet systems to compete with NATO, even militarily.

For some time, the Soviet military knew what was happening but not how to offset it. Before their American counterparts embraced the network-centric “revolution in military affairs,” Soviet military thinkers identified the potential for this in less specific, more intuitive terms. Their vision was fulfilled in the 1980s, not by them but by their opponent. Here again, a fundamental asymmetry ruled: work on information technology in the Soviet Union was concentrated in and for the military sector. In the United States, it was much less in the military sector than in the vastly larger consumer and industrial-goods sectors, owing largely to the R&D budgets of the titans of information technology, e.g., IBM, AT&T, Microsoft, and Intel.

To illustrate: say the United States was spending 5% of its GDP on defense in 1985 and the Soviet Union was spending 15% of its much smaller GDP on defense, and that both were allocating 5% of defense spending to R&D. In that case, the Soviets and Americans were spending about the same amount on defense R&D. However, let’s also say that the consumer sector was 70% of U.S. GDP and that 5% of revenue generated in that sector was invested in R&D of new technologies, whereas the Soviets were spending next to nothing on consumer-sector R&D. The net result is that the United States was outspending the Soviet Union in *total* R&D on new technology by ten to one, or by over

\$1 trillion during the first decade of the information revolution and last decade of the Soviet Union.

If anything, this illustration is generous to the Soviets, for actual Soviet GDP was less than it appeared to be. And, of course, much of the innovation in information technology came from pony-tailed Americans in garages—a phenomenon as common as unicorns in the USSR. With a small consumer sector, a sclerotic industrial sector, and no way to form, attract or reward venture capital, the Soviet Union had no chance of competing in the information revolution in military affairs as it had in the age of mechanized forces. Instead, it tried to compete by plowing more money into those forces, as well as into its grossly outsized nuclear arsenal. This Soviet reaction, though wasteful, made Western analysts and political critics more worried about the danger of Soviet aggression, when they should have been less worried.

Beyond its effects on economic and military competition, the information revolution disrupted Soviet politics. Here was a state, and an empire, that relied vitally on the ability to restrict and monopolize information available to its subjects. It also went to great lengths to keep dissidents from coalescing. The Soviets depended, in the vivid expression of Hannah Arendt, on the ability to “atomize” the population and thus make it controllable.¹⁴ Until the information revolution, they were good at this. Then, fax machines (remember them?), though much earlier, were able to take advantage of broader telephone bandwidths and thus became a common way of transmitting documents—including dissidents’ manifestos and reports of oppression in the Soviet Union and its European satellites. Mass protests were still risky, but state security services could not corral fax-centric collaboration among communism’s opponents. Networked dissidence was peaceful—violence would not work anyway against a violent state. State television had to compete with Western satellite stations, and citizens came to doubt what they were told by Soviet mouthpieces.

The mortal danger to the Soviet system of even rudimentary information technology was especially evident in Eastern Europe. The fax was used to organize labor-union strikes, starting in Gdansk and spreading faster than the authorities could manage. By the time *glasnost* was underway, email was available to citizens and dissidents, and the number of personal computers multiplied. Not until well after the

Cold War have authoritarian states, e.g., Putin's Russia and Xi's China, found ways to block email and Web access. (We'll see if they succeed.)

In sum, the inability of the Soviet system to generate, use, or control society's access to information technology added to its economic, military and political failures and set the stage for the final act. Predicting the year and circumstances would have been impossible as late as Gorbachev's introduction of reforms, but it would be sooner than later.

Sinking: The Failure of *Perestroika* and *Glasnost*, and the End

Restructuring the Soviet economy was a palpable failure. The accumulation of fatal weaknesses in central-planning and state ownership could not be rectified by reforms, which tried to make an unworkable system work. Government spending, food prices, and inflation rose sharply. True transformation could not be done quickly. But as Michael Mandelbaum put it, transitioning from a communist economy to a capitalist one was like trying to switch from left-side driving to right-side driving gradually. GDP per capita—as good an indicator as any of economic health—declined by about 1.5%/year from 1986 on. Despite instances of market-based pricing and profits, there were no winners, only losers. The refusal of the United States and European Union to finance *perestroika* before it could be shown to work was out of neither stinginess nor malice. Western sentiment was that investing in what remained of a state-run system would at best fail and at worst keep that system on life-support.

The opening of the political system also backfired. *Glasnost* was seen as a green light to challenge state and party authority. Unsurprisingly, the turn against Soviet control and communist rule would start in earnest in Eastern Europe, where most was known about economic and political conditions in the West. There, Gorbachev was not the target but the icon of opposition and change. The combination of *glasnost* and the end of the Brezhnev Doctrine ignited unrest throughout the satellites, enabled by information technology and free of fear of Soviet tanks. Others in this volume have detailed the spread of anti-communist insurgency across Eastern Europe, from Solidarity's electoral triumph to the opening of Hungary's borders with the West, to Gorbachev's insistence that East Germany's Erich Honecker must go, to

the demolition of the Berlin Wall. But these specifics tell how the Cold War ended, not why. The end began in Eastern Europe because communism had no legitimacy there: it had been imposed by a Red Army that was now at bay.

What began in Central Europe quickly infected certain nationalities and republics of the Soviet Union. Soviet communism had no more legitimacy in the Baltic states than in neighboring Poland. They were the most determined to leave the Soviet Union and wanted no part of any post-Soviet commonwealth. Centrifugal forces gained strength as well in western Ukraine and the Caucasus. The union that had been constructed mainly by force could not hold together once force was off the table (certainly after the failed coup). Some old-line communists in the republics changed their colors and stayed on, especially in Central Asia.

In sum, the Soviet economy was in deep trouble on its own terms and incapable of exploiting, much less creating, the most important new technology. This same technology permitted dissent to network and burst in Soviet satellites and some republics. Information technology was also tilting the qualitative military balance in NATO's favor, and that was bound to get worse. All in all, contradictions between the Soviet system and creation and use of the new, dominant technology—the former rejected freedom, and the latter required it—were fatal.

Gorbachev—hero or goat? More than anyone else, he ended the Cold War, which he could see the Soviet Union was losing. To him, ending the Cold War was necessary in order to open the gates to Western technology. But ending the Cold War, he knew, would not be enough: new-found political legitimacy and economic reforms were also needed. The main effect of these steps, however, was to embolden opposition to Soviet communism, which could not be contained at an acceptable, affordable price. Gorbachev's policies brought an end to both the Cold War *and* to the system he hoped ending the Cold War could save.

Did the West win the Cold War? Clearly it did, though less in its end-game diplomacy than in its economic, technological, and military success and superiority, owing in large part to the information revolution that it started and led. A separate yet often conflated question is whether the United States should have *said out loud* that it won the Cold War. Arguing against any such crowing is the belief that it would

deepen and prolong Russian animosity toward the West. Arguing in favor of candor about Cold War's winner and loser is the belief that only if Russians accept this bitter truth will they seek a fundamentally different future for their country. What is undeniably important for all to understand is why the Soviet Union capsized and sank.

Concluding Thoughts

Signs of inexorable Soviet decline were visible, to those who knew where to look, decades before the end. Yet, until the failure of the coup and resultant destruction of the "center" in August, 1991, the demise of the Soviet Union did not seem imminent. Moreover, the oxymoron of the Soviet Union in the information age could have lasted for years. But two developments during the middle of the 1980s accelerated the collapse of the Soviet Union, and of the Cold War. First was the sharp drop in fossil-fuel prices, which ripped the bandage off the dismal Soviet economy. The other was the decision by Gorbachev to launch *glasnost*, *perestroika*, and "new thinking" in East-West affairs. *Perestroika* fell well short of transforming the Soviet economy, but it was probably all the political traffic would bear. It was *glasnost* that invited challenges to Soviet communism in Poland, Hungary, Czechoslovakia, and East Germany by releasing anti-Soviet forces that could no longer be crushed by force, which was no longer an option.

Recalling the discussion of theory at the top of this chapter, the political illegitimacy of Soviet communism, declining economic performance, and inability to compete in or use information technology were symptoms of a complex system rooted in a fantasy ideology and too rigid to adapt. These factors made the end of the Cold War and the Soviet Union certain, but not how soon.

Why, then, did the Cold War and Soviet Union end when they did? The choice of Mikhail Gorbachev as general secretary, given his predisposition to reform, was clearly a precipitating event. At about the same time, the fall of global oil and gas prices, which was not the Soviets' doing, sent the economy into a steep and final nose-dive. Of course, the full implications of these events were not realized at the time.

Why has the Peoples' Republic of China flourished? For one thing, it has not been in the grip of a fantasy ideology since the death of Mao

Zedong and rise of Deng Xiaoping as de facto top leader starting in 1976. Even before he witnessed the failure of Soviet communism, Deng eschewed “class struggle,” opened China to foreign trade, and made sweeping market-based economic reforms, which he then doubled-down on in 1992, right after the end of the Soviet Union. Deng’s China avoided nuclear and conventional arms races with either of the superpowers, adopting instead minimal deterrence, nuclear no-first-use, and a military budget of less than 3% of GDP. He also set China’s strategic direction and pace with his admonition for China to “bide its time” for as long as needed to build its economy, military strength, and domestic stability.

Since Deng, China been less ideologically rigid; neither its state-heavy market economy nor its rising nationalism excludes other lines of thought. Moreover, its economic success and nationalistic pride has bolstered the regime’s legitimacy, thus far. China is also pragmatic: “It doesn’t matter whether a cat is black or white; if it catches mice it is a good cat,” said Deng famously. It has allowed considerable personal freedom, though drawing the line at questioning the single-party system of government or organizing nation-wide. Being open to the world economically, China is unavoidably exposed to outside information and competing ideas. Instead of resisting information technology, China is determined to become a world leader in it (e.g., artificial intelligence), and becoming such a leader will increase pressure to ease restrictions on information freedoms at home. In these respects, China is a far more adaptive complex system than it once was or than the Soviet Union ever was.

Finally, the Chinese economy is balanced, resilient, and adaptive. Its principal vulnerability is dependence on importing raw materials to sustain its extraordinary, continuing growth. But it has mitigated this vulnerability by diversifying its sources (and has benefited from a long trend of low commodity prices). China is also dependent on Western demand for its manufactures, which have been the locomotive of its economy. It could suffer from a trade war, but not necessarily more than its opponent(s). It could also be susceptible to foreign-policy manipulation by a trading partner. But these exposures do not spell any mortal danger to the Chinese state. Rather, they are part and parcel of integration in the world economy, from which China benefits immensely.

By Gorbachev's time, the Soviet Union was economically, unable to either create or withstand information technology, falling badly behind its competitors, over-spending on its military, and increasingly illegitimate with its population. China is none of these.

Notes

1. *Seinfeld* fans will remember this line uttered by George Costanza to describe the sinking of the Andrea Dorea.

2. The KGB, which Andropov once led, had a better, earlier grasp of the Soviet Union's declining competitiveness than any other organization. Ironically, its subsequent leader, Vladimir Kryuchkov, was a key organizer of the failed coup of 1991.

3. In the United States, DARPA was supportive of data networking in the 1960s and 1970s. But the armed forces, intelligence establishment, and government in general carried on as before until well into the 1980s.

4. Jacques Lacan and Slavoj Zizek being two of the most noteworthy.

5. Reader of Adam Smith's *Wealth of Nations* will recall that his economic theories are based on the non-fantasy of human self-interested "sociability."

6. See Richard Ullman, *Strong States, Weak States*, Foreign Policy Association Headline Series, 2003.

7. In her classic *Origins of Totalitarianism*, Hannah Arendt explained the imperative of increasingly autocratic and brutal rule in order to maintain control. It is arguable whether Soviet communism was totalitarian after the death of Stalin. Hannah Arendt, *The Origins of Totalitarianism* (New York: Harcourt, Brace, Jovanovich, 1973).

8. These ways of thinking were developed mainly at Santa Fe Institute and RAND. Also see nonlinear dynamical systems, heterogenous agents, phase transition, emergent behavior, self-organizing networks.

9. By the end of the 1980s, Soviet GDP was estimated by the CIA to be half of U.S. GDP. This probably understates the gap, given that both the Soviets and the CIA overestimated Soviet GDP. See Marc Trachtenberg, "Assessing Soviet Economic Performance During the Cold War: A Failure of Intelligence?" *Texas National Security Review*, 2018.

10. "De-coupling" was a term of the nuclear arts that meant that the United States would not escalate to the use of intercontinental systems if conventional and theater-nuclear defense failed against all-out Soviet aggression.

11. A phenomenon not unique to the Soviet Union, as European empires had also become too costly to keep.

12. Minutes of October 29, 1981 Politburo meeting. Released transcript quoted in Hans Binnendijk, David C. Gompert, and Bonny Lin, *Blunders, Blunders and Wars* (Arlington, VA: RAND, 2014).

13. Joseph Nye, Harvard Kennedy School Belfer Center, "Analysis and Opinions," April 5, 2006.

14. Arendt, *op. cit.*

