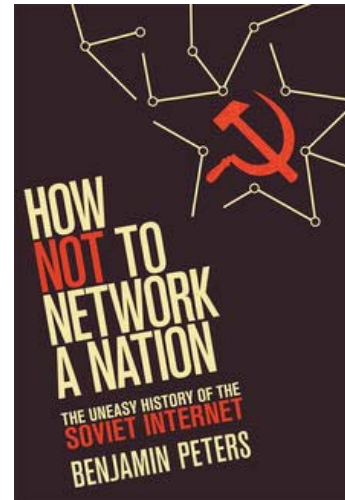


Benjamin Peters, *How Not to Network a Nation: The Uneasy History of the Soviet Internet*, Cambridge, MA: MIT Press, 2016, 312 pp., \$31.35 (hardcover), \$25.00 (paperback).

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There are studies that transgress—methodically and creatively—disciplinary borders, enriching in a crucial way our understanding of major cultural, political, economic, and technological puzzles. The book *How Not to Network a Nation: The Uneasy History of the Soviet Internet* by Benjamin Peters achieves a complex epistemic goal that has, at the same time, deep moral, political, economic, cultural, and military ramifications. Peters resorts, in an efficient and elegant mode, to the tools of cultural anthropology, as happens with other landmark studies developed by Knorr-Cetina (1999) or Latour (1999). Peters' approach benefits from the expertise of an insider in a core Internet area: communication. The book explores the roots and consequences of the conflict between Internet and "Internyēt" for the future of global communication.



Peters' interdisciplinary exercise "in the emerging field of network studies, seeks to articulate a fluid discourse around the central term *network*" (p. 9) and its Russian correspondent, *set'*. Resorting to a dialectical perspective, Peters explores the "uneasy history of the Soviet Internet" with genuine empathy toward the work of the Soviet scientists and their struggle to be creative within an ideologically closed and politically repressive system, while he accurately assesses that "the first global computer networks began among *cooperative capitalists, not competing socialists* [emphasis added]" (p. 13).

The first chapter investigates the "global history of cybernetics" (pp. 15–17) within the confrontational context between the Soviet Union and the United States, between closed and open societies. Peters discusses the variety of sources and "synthesizing ideas" from philosophy, mathematics, engineering, biology and literary and social criticism that have been integrated by Norbert Wiener, credited with launching cybernetics. The historical inquiry shows that the genesis of cybernetics is the fruit of scientific creativity oriented toward highly abstract problems such as feedback processes and theory of messages combined with vital practical tasks, such as the design of antiaircraft fire-control systems, posed by World War II. The new field includes prominent contributors such as Von Neumann (game theory); Shannon (information theory); McCulloch (neurophysiology); Licklider (computer science); M. Mead; Bateson; Lazarsfeld; Lewin; the physicist Ampère, who coined the concept *cybernétique*; and the psychologist Odobleja.

McCulloch's concept of "heterarchy" is discussed in contrast with hierarchy. The heterarchy reveals that "multiple competing regimes of evaluation" can emerge in all systems and "helps to describe some of the sources of conflict that beset Soviet cybernetics attempts to network their command

economy" (p. 22). The idea of heterarchy leads to new insights into the deep contradictions between the formal and informal structures that characterized the Soviet command society and the secretive nature of its major power structures.

The story of Soviet "Internet" starts in 1952 with the "discovery" in a "secret library," by the colonel engineer Anatoly Kitov, of Wiener's seminal book (1948). Kitov had the task to research "possible military applications for computers" (p. 35). Due to Kitov and other Soviet scientists (Lyapunov, Sobolev, Kolman) who also had political power, the work to change the view on cybernetics from "a reactionary pseudoscience that appeared in the USA" into a useful science, namely, "cybernetics in the service of communism" (p. 31), did take off. The history of Soviet cybernetics is marked by Wiener's visit to Moscow in 1960. Does it mean that "technocratic sciences are politically neutral" (p. 51)? No, because "claiming technocratic neutrality itself is a consequential political posture that often is filled by whatever the politics of status quo at the time and place are" (p. 51).

Peters' inquiry reveals how problems are fixed in the Soviet command economy. The solution is provided by "hidden networks of *tolkachy* (literally 'pushers') . . . or 'fixers' who got the job done outside of the formal economic plan," but without challenging the system" (p. 75). Cybernetics faced a foundational paradox: "the reformers had to win the support of the very system that it meant to reform" (p. 77). The informal navigation encountered the obstacle posed by the divide between "civilian" and "military" sectors, which is at the core of Peters' explanatory framework of the "early Soviet computer networks projects" (p. 79).

The first technological proposal for a large-scale computer for civilian use was conceived by Kitov. For transgressing the sacred political borders between civil and military systems, Kitov sent an epistle—an ancient communication tool—in 1959 to Khrushchev, who "never saw it," but this first letter reached Brezhnev. Kitov proposed to use electronic calculating machines in "automating administrative and economic governance" (p. 81). Kitov again sent a letter, which never reached any Soviet leader. The consequences of his audacity: a show trial, exclusion from the party, and dismissal from the military leadership of the initiator of the first national network—the Economic Automatic Management Systems (EASU).

The unsuccessful attempt with the EASU to achieve a network emerged within the context of an internal competition and a competition with the U.S. involving the Secret Service, eager to know the competitor's efforts of developing means to produce and use knowledge on a large scale, as Peters suggests. Is this a prelude to cyber warfare? I think that this is a trend that, due to the moral bankruptcy and the systemic repression of totalitarian regimes, distorts the intrinsic features of the "interknowledge" processes at the megascale. *Interknowledge* refers to the cognitive processes that correspond to the interaction processes between Self and Other (individual or collective actors), and includes the knowledge of the other, of its relationships, and of its knowledge—inclusively, Other's self-knowledge.

The Internet did not take off in the Soviet Union. The Internet is a complex American invention with a global impact on all human activities. Peters' study is the first systematic and comprehensive

exploration of the history of the network projects, of their failures, and of the context of these projects in the Soviet Union. This history reveals their societal and global dynamics and their uses and abuses.

A new letter, signed by young scientists, was handed to Khrushchev. This epistolary choice provides a chance to the "supreme leader" to present a nice social face that the system has a great leader. The core actor is an eminent scientist, Glushkov from Kiev, who designed the All-State Automatic System Project (OGAS) as the nervous system of the nation, conceived as "a single incorporated body of workers" (p. 120). Things looked like they were heading in the right direction. The scientists at the Institute of Cybernetics even had time to imagine an "autonomous country" named "Cybertonia" (p. 131) that abounded in ludic activities. Glushkov proposed to replace paper money with an "electronic receipt," although Peters warns us that this idea, which looks like anticipation of the ATM or digital money, has different roots and end goals. Glushkov's proposal fits the "Marxian prophecy of a future Communist society without hard currency" (p. 123) and the Marxian utopia of a one-party system and abolition of private ownership, as prescribed by the Marxian algorithm of communist revolution.

If anyone might think that OGAS shows a good match between advanced technological projects and the "socialist democracy," one should consider that Glushkov proposed "*that the state should gather dossiers on every worker and economic actors in the nation*" (p. 120, emphasis added). This equates to a structural injustice in the functioning and administration of interknowledge processes: The state and its secret police had disproportionate access and rights to use information in comparison with any citizen or group. Freedom cannot flourish within bubbles surrounded by a repressive megastructure and a unique "scientific" ideology. Sooner or later, the repressive waves of the system will penetrate these miraculous bubbles, turning them into relics.

Within the Soviet context, the collaboration among those who designed the project collapsed. The informal connections were "accidentally" distorted prior to a decisive Politburo meeting where "comrade Glushkov" had to listen to a speech on a poultry farm: "The machine can perform three programs—turns on music when the hen lays eggs, turn lights on and off, and so on. This increased egg production" (p. 163). The undoing of OGAS was a long process (1970–1989) with devastating consequences for what could have become the post-Soviet Internet, but turned into the Internyet. *Internyet* is rather a misconception and not a misspelling (*nyet* means *no*). Internyet preserves plenty of malicious goals, abilities, and functions against the Internet. Peters' diagnostic combines individual features and systemic traits: Creative minds had to face "counter-innovational institutional conditions" (p. 89).

The innovative approach of the history of Soviet Internet focuses also on personalities that had the intellectual resources, the resilience, and the Machiavellian skills to cross the system's barbed-wired ideological borders. Some excelled in two extra gifts, or, as Gardner's theory called them, "intelligences" (1983). Peters' insight and patient investigation focuses on Botvnik, a chess legend and an engineer who also had the privileges of a high-ranking party member due to his world championships and his loyalty to the party. His solution for the Soviet economy was inspired by his Pioneer chess algorithm. Botvnik argued that "the Soviet economy should be regulated by a software program that, like his Pioneer chess algorithm, would take a generalizable approach to reasoned decision making" (p. 178). Within the Soviet maze of competing hierarchies that had to obey the ideological master program, his attempt failed too.

The chess game “is synecdoche for cold war confrontation” that includes two opposed “rational strategists plotting to endgame the other” (p. 175). Such games need the ability of reconstructing in one’s mind the other’s reasoning and knowledge. The mental battle games nowadays need an immense Chess/Go-board with more than 200 × 200 squares for including all the players. It seems reasonable to assume that a morally based solution, such as the Kantian principle, that is minded and practiced by all players must be added to the computing abilities.

The troubled story of Soviet and post-Soviet Internet and the growth of Internyet explored by Peters is supported by witnesses of landmark contributors to computing science from former communist regimes. Freedom of thinking and communication—not gifts, intelligence, or will—seems to be the value that distinguishes the creative minds of open societies from those living within closed societies. The terrible experiences lived by scientists under totalitarian regimes support this idea, as is the case with Grzegorz Rozenberg, Ciprian Foias, Yuri Mannin, Solomon Marcus, and Mioara Mugur-Schachter. For instance, Gurevich recalls his experience in the former Soviet Union: “I remember wishing to be able to speak my mind” (quoted in Calude, 2016, pp. 385–387).

The integrative inquiry carried out by Peters goes beyond inhibiting dichotomies, and specifically “beyond the binary.” His approach leads to a comprehensive picture of Internet history, of the forces that influence its evolution while eluding the power of existing algorithms. The collapse of Soviet attempts to achieve a form of Internet are intertwined with a set of causes such as the inner conflicts of the command economy that “was both hierarchical on paper and heterarchical in practice” (p. 193). The work develops the implications of Arendtian argument on the social–cognitive conflict present in the conversation on publicity and privacy. Peters opens a fertile way of

rereading [reunderstanding] the term *privacy* in light of the rise of the private logics of the *oikos* . . . modern privacy is not about the proper spacing of the individual self and the other. It is about the sum of the private institutional interests that adjudicate the proper spacing of their institutional homes (*oikos*) and the public. War rooms, closed sessions of Senate, and boardrooms are where modern-day “privacy” resides, in the sense that these are the institutions most interested in “the state of being privy” to the lives of the public. (p. 201)

The book *How Not to Network a Nation: The Uneasy History of the Soviet Internet* represents a landmark work for the field that, beyond its theoretical and methodological value, reveals core moral issues of the field.

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