SERRC
Social Epistemology
Review & Reply Collective

http://social-epistemology.com
ISSN: 2471-9560

The Political Sins of Cybernetics: A Review of Evgeny Morozov's *The Santiago Boys*

Felipe Figueroa, University of Warwick, felipefigueroaz@gmail.com

---

Figueroa, Felipe. 2023. "The Political Sins of Cybernetics: A Review of Evgeny Morozov's *The Santiago Boys*." *Social Epistemology Review and Reply Collective* 12 (8): 33–41. https://wp.me/p1Bfg0-811.

SERRC
Social Epistemology
Review & Reply Collective
12 (8): 33–41. 2023.
https://wp.me/p1Bfg0-81l

My interest in Evgeny Morozov's new podcast on Project Cybersyn is long-lasting. I come from Chile and have been interested in Project Cybersyn ever since reading Eden Medina's wonderful book "Cybernetic Revolutionaries" (2011). Hence, I have been eagerly waiting for Morozov's podcast series on the project. I must admit that I was initially a bit sceptical that the podcast would have anything to add to Medina's excellent account of the project. Furthermore, I am not particularly fond of the retrofuturist hype that Cybersyn currently enjoys among a certain class of young Leftist radicals (which I certainly once shared).

Despite of my scepticism, I consider Morozov to be one of the most lucid and clear-sighted writers on the intersection between politics and technology, so I was very curious about what would come out of Morozov's two years' work into telling the story of Cybersyn in podcast format. Moreover, the release of the podcast could not be more timely, just a couple of months before the fiftieth anniversary of September 11, 1973 colloquially known as "El Golpe" among Chileans. At the same time, Gabriel Boric's progressive government is currently facing a constitutional reform process which is being directed without opposition by the extreme right party "Republicanos", a party that is apologetic of the Augusto Pinochet dictatorship and has links to Germany's AfD, Spain's Vox and the extreme right of the US Republican Party. One can indeed see many parallels to the initial enthusiasm surrounding Salvador Allende's Unidad Popular's ascent to power and that after Boric's presidential election. Sadly, one can also sense the parallel frictions, limitations and contradictions in both political projects.

An Overall Assessment of the Podcast

The podcast is divided into nine episodes of over an hour of duration each. All episodes are narrated by Morozov himself with interspersed interviews. The podcast tells the story of project Cybersyn's origins, vision, development, ultimate demise under Pinochet and its afterlife. At the podcasts' Homepage, it is possible for the listener to access the extremely well researched critical apparatus underpinning Morozov's narration.

Morozov's chosen geographical and chronological span is equally ambitious. The story begins with the occupation of the Pontificia Universidad Católica de Chile in Santiago (PUC) in 1967, which led to the creation of the MAPU, the political party in which many of the engineers involved in Cybersyn began their political careers. It ends with a sort of postscript dealing with Cybersyn's segue into Silicon Valley. The story takes place mainly between London, Santiago de Chile and Washington DC, with some stops in Palo Alto, Lima, Jakarta, Davos, Sao Paulo and La Habana, Cuba.

The podcast displays an impressive amount of archival work and a very nuanced understanding of the history and politics of 1970s Chile. Morozov is originally trained as an historian and it shows. The Podcast also features over 200 interviews, including with many of the original participants in the Cybersyn project, as well as Vanilla Beer, daughter and biographer of Strafford Beer. Beer was a British management consultant and cybernetician. Fernando Flores contacted him, as head of CORFO, Chile's economic development agency,

to help him design and implement a networked system of telex machines with the aim of managing the recently nationalized firms and industries, which CORFO was tasked with managing. Eventually, the project's goal was to use the insights of Beer's brand of cybernetics to run the Chilean economy.[1]

Morozov's podcast does a good job describing the kind of obstacles faced by the project from its inception, chief among them US intervention aimed at making "the Chilean economy scream" as Nixon notoriously ordered. The podcast also highlights the project's blind spots, biases, ambiguities and contradictions: for example, its ambivalent relationship with workers as well as the tension between technocracy and democracy.

All these aspects of Cybersyn were already present in Medina's book. Where Morozov truly departs from Medina's book is in the isomorphism he identifies between the technological vision and architecture behind Cybersyn and the infamous Operación Cóndor. To my mind, here lies the novelty of Morozov's contribution to our understanding of Cybersyn: the same technology can be used to achieve completely different political goals. This, of course, will come as no surprise for the readers and contributors to the SERRC, but should be taken as a cautionary tale for those who are too enthusiastic about the prospects of creating some sort of Big Data Digital Socialism.[2]

In sum, I would say that Morozov's experiment has been a success and that the reader is well advised to listen to it.

However, there are some limitations that are inherent to the podcast format that, I think, forced Morozov to leave some topics unaddressed. With reason, Morozov is driven by the political events unfolding around Cybersyn, as well as by the (mis)adventures of his characters. After all, he is telling a story, not writing a historical or political treatise about cybernetics, nor a STS-style case study on Cybersyn. Hence, he may be forgiven for the omissions I wish to discuss below. Nevertheless, these omissions are relevant insofar as they take away force from some of Morozov's most interesting insights, including the similarities between Operación Cóndor and Cybersyn.

I would argue that the main omission is that he should have given more substance to one of the podcast's key concepts: *dark tech*. By this, Morozov means the nexus connecting power and technology. Although the concept is featured in most episodes, it is never clearly defined, except through the examples of the politics of knowledge production involved in Chile's political struggles. Second, some discussion of the epistemological affinities between Cybernetics and Neoliberalism would have enriched Morozov's narrative. Morozov makes a

[1] For this reason, Beer has been turned into a kind of hipster tech hero for the young Left across the globe. For those who don't believe me, please search "Cybernetics" or "Stafford Beer" in your podcast apps. Or even better, Google the following: "Stafford Beer" AND "socialism".

[2] Morozov has written on this topic a few times in recent years. Specially relevant is his article for the *New Left Review* entitled "Digital Socialism?" (Morozov 2019). Also, see his latest interview at the *Future Histories* Podcast: "On Discovery Beyond Comp etition". https://www.youtube.com/watch?v=3lxPMem0USM.

SERRC
Social Epistemology
Review & Reply Collective
12 (8): 33–41. 2023.
https://wp.me/p1Bfg0-81l

big deal of the parallelism between the Chicago Boys and the Santiago Boys.[3] However, he doesn't delve much into it. In what follows I will do my best to briefly address these omissions, not to criticize Morozov, but rather in the spirit of adding to his account of Cybersyn, which as I already mentioned is both novel and insightful.

The Podcast's "Cyber-sins" of Omission

Let us begin with the first omission: a clearer definition of "dark tech". What this concept is meant to highlight is the connection between power and technology, or the use of technology to sway or influence geopolitics. Indeed, a common theme throughout the podcast is the notion that "technology is geopolitics by other means". In other words, one of the challenges facing those who wished to implement Cybersyn was that the US would not tolerate the creation of a parallel telecommunications infrastructure that (to add insult to injury) was implemented by a self-declared socialist regime in its own backyard. This topic is developed the most from chapter 3 of the podcast onwards. Specially revealing is Allende's 1972 April 13th UNCTAD address. The gist of Allende's speech is that the global technology infrastructure was being co-opted and controlled by powerful and unaccountable corporations.[4]

---

[3] The label "Chicago Boys" is a well-known term, used to refer to the group of economists trained at the PUC/University of Chicago that developed the package of economic reforms usually associated with the Pinochet regime (although these reforms were already present in Jorge Alessandri's failed presidential candidacy). Once Pinochet came into power, many of the Chicago boys came to hold high positions in Chile's Finance, Labor and Pension, and Economics ministries, as well as Chile's Central Bank, often going from one ministry to the other. In turn, the label "Santiago Boys" is coined by Morozov as a direct reference to the first group. Although the Santiago Boys also come from the PUC, they were mostly engineers, so they had a different outlook and politics. The key figures are Fernando Flores, who first approach Stafford Beer; Sonia Mordojovich (Beer's assistant), Raúl Espejo, the project's Operations Manager, Roberto Cañete, who first acted as Beer's interpreter, to then move to more technical tasks within the project, most notably building the telex network and keeping Beer up to date on the project as well as Chile's political situation; Gui Bonsiepe, German designer trained at the Ulm School of Design, one of the offshoots of the Bauhaus School. He designed the famous Operations Room; and Mario Grandi, Italian economist and director of the CHECO simulator (CHECO stands for CHIlean ECOnomy), Carlos Senna was a Brazilian engineer and anti-torture activist, to avoid political persecution, he had to go on exile to Chile, were worked in project Cybersyn. The rest of the cast is less-well known and do not feature as heavily in the podcast: Eugenio Balmaceda (an engineer from the State Technology Institute, he modelled enterprises within the forestry and construction sector), Fernado Améstica (focused on building the telecommunications infrastructure for the telex network), Jorge Barrientos (in charge of defining production indicators for the textile and forestry sectors), Isaquino Benadof (Stanford educated, he directed the development of the Cyberstride permanent suite), Enrique Farné and Herman Schwember (tasked by Flores with thinking beyond Cybersyn's technology to insert the project in the flow of Chile's broader political, economic, and social transformations), Tomás Kohn (modelling engineer), Hernán Santa María (data management), Alfredo del Valle (in charge of defining production indicators for the energy sector), Humberto Gabella (studied cybernetic principles to determine how they could improve the government's control of the economy); Fernando Shultz, Alfonso Gómez, Rodrigo Walker, Guillermo Capdevilla, Eddy Carmona, Jessie Cintolesi, Lucía Wormald and Carmen (Pepa) Foncea, assisted Gui Bonsieppe in the design of the Operations Room. This list was compiled by cross-referencing Medina's book with the podcast's glossary.

[4] This critique parallel that of liberal progressives of the New Deal era, such as Walton Hamilton (see, e.g. (Hamilton 1941)) (who allegedly coined the term "institutional economics"). I think this hints at the fact that Allende's political project was a Marxist one more in rhetoric than in practice. When looking at the concrete

What is the role of these tech-infrastructures? How do they connect technology and power? The answer given by cyberneticians is that they are mechanisms through which coordination is enabled, which in turn allows for the system to function at a higher level of complexity. The example Morozov likes to use is that of a timetable at a school,[5] which helps coordinate the activities of a large group through an extremely simple device. Morozov sees cybernetics as a versatile framework for understanding and developing these generative technologies, of which a school's timetable is just one simple example of a vast array of similar non-market systems of coordination. The stated goal of Beer's version of cybernetics was to allow disruptive patterns to emerge, so as to prompt adaptive responses from the system which would then reach homeostasis at a higher level of complexity in an endless feedback loop, with the system never quite reaching equilibrium nor disintegrating.[6] This is in contrast with more conservative views of cybernetics, which put the stress on keeping homeostasis (i.e. the status quo), rather than fostering the emergence of disruption.

At the same time, the timetable example shows very clearly the nature of the link between technology and power. Those who get to decide on how the timetable is designed, have a great deal of power over the activities of others and decide which resources they will have available to carry them out. Insofar as Cybersyn tried to concretely deal with the challenges of managing the economy within the (severe) constraints of real-life international political economy and geopolitics, it became instantly entangled in the geopolitics of technology. For this reason, Morozov shows little sympathy for the criticisms aimed at Beer and Cybersyn coming from the British New Left after he returned to the UK in the aftermath of Chile's 9/11. For, even if one concedes that they are right in principle, it was very misguided to criticize Cybersyn on the grounds of technocracy and authoritarianism, considering the Chilean context. Briefly put, this critique goes against the kind of experimentalism that Morozov argues the Left needs today and that was present in Cybersyn. In Chile, we like to say "otra cosa es con guitarra."[7]

I think a way of shedding some light on dark tech (pun intended) would be through Roberto Mangabeira Unger's book on the knowledge economy (2019). There, he argues that the revolutionary potential of digital technologies is kept at bay by artificially restricting these technologies to the vanguard of the productive system, where a tech elite running a few global corporations, can easily control and modulate its disruptive effects on society. This

policies and political objectives Allende pursued, it appears (at least to my mind) to be more in line with FDR than with Castro. My intuition is that the warped, über-Manichean politics of the Cold War made Allende look more to the Left than he actually was.

[5] This is a commonly used example of the co-ordination features of a viable system, or a "System 2" subsystem of Beer's Viable System Model (VSM).

[6] Of course, this will sound familiar to those acquainted with more sophisticated versions of neoliberal thinking. We will return to this point below.

[7] The meaning of this idiom is that there is a difference between doing something without pressure or under normal circumstances and doing it with added complexity or in a challenging context. It implies that it is wrong to criticise someone for how they are playing the guitar while one is comfortably seated in the audience. It is relatively similar to the idiom "armchair quarterbacking".

SERRC
Social Epistemology
Review & Reply Collective
12 (8): 33–41. 2023.
https://wp.me/p1Bfg0-81l

plays along to Morozov's (and Allende's) point of view regarding the geopolitics of technology and the power-tech nexus.

Also relevant regarding the geopolitics of technology are the pressures of economic and military competition between the USSR and the US. These are essential for understanding where Stafford Beer stood in the context of the Cold War. As Andrew Pickering (2010) has suggested, British cybernetics was less overdetermined by its political context than cybernetics in the two main Cold War powers: it was "amateurish", to use Pickering's terms, in the sense that it did not develop in a highly formalized institutional context. This was even more the case in Chile, especially if we consider the early stages of development that Cybersyn achieved. This allowed for all the characters in Morozov's tale to project their own aspirations and goals onto the project. As Cybersyn itself, cybernetics has always been ridden with political ambiguity. For example, as Slava Gerovitch (2002)[8] has suggested, it is hard to gauge whether for Soviet economists and engineers, cybernetics was a way of building an alternative to the price mechanism or rather a surreptitious way of reintroducing the logic of the price mechanism into the Soviet economy. The same goes for Soviet scientists. It is not clear whether if they wished to use cybernetics to merely update Marxism or supersede it as a general approach to Soviet science. Whichever it may be, the point is that as a conceptual framework, cybernetics was available to all these goals.

Regarding the epistemic affinities between Neoliberalism and Cybernetics, the schism between disruption-oriented and homeostasis-oriented versions of Cybernetics, which we suggested earlier, can also be seen within the ranks of Neoliberalism. Put perhaps a little bit crudely, one could set Hayek and the Ordoliberals on the side of homeostasis, while Schumpeter, Popper and the more libertarian members of the Chicago School would sit on the side of disruption. Another way of putting this point would be that the first group puts the accent in the "order" bit in "spontaneous order" while the second group highlights the "spontaneous" bit.

There is another epistemic affinity between cybernetics and Neoliberalism that speaks to the political ambivalence of the former. To see it, we need to briefly recount the socialist calculation debate. As John O'Neill (1996) and Thomas Uebel (2007) have shown (albeit in different ways), the standard view of the socialist calculation debate is (at least for the most part) path-dependent on a retrospective construction of the "debate" concocted by Hayek.

Hayek's reconstruction of the debate hides the fact that his intervention actually changed the terms in which it was carried out.

The first phase of the debate, between Mises and Neurath, was about whether all rationality is algorithmic.[9] In this sense, it is an argument about practical rationality rather than epistemology, as in the second phase of the debate.

[8] See also "The Wired Cold War." *The Eurasian Knot*. https://euraknot.org/2020/12/04/the-wired-cold-war/.
[9] Or, more precisely, whether all decision-making can be represented by algorithms.

Mises's (1963)[10] position amounted to arguing that for every decision an agent makes, there is an implicit economic calculation. This is why no efficient system of allocation is possible without the price system. Without it, no economic calculation is possible and hence, no efficient allocation. Neurath (1973), on the other hand, argued that not all rationality is algorithmic. That is to say (a) there are decisions that are rational, although not reducible to any mathematical formulation, and; (b) there are decisions that would be irrational to make exclusively on the basis of mathematical calculations.

In the second phase of the debate, Oskar Lange (1938) conceded Mises's point regarding the algorithmic nature of rational decision-making but argued that a computer-aided planner could simulate the prices generated by the market. Hayek (1948), when answering Lange, took a similar stance to Neurath's on rationality, stressing the ineffable and tacit nature of the knowledge involved even in the most elemental economic decisions.

The difference between Hayek and Neurath's position is whether, in the absence of the possibility of expressing mathematically the underlying logic of the decision-making process, one had no other means of communicating it efficiently, except for the price mechanism. Hayek might have agreed with Neurath that prices do not always provide a completely rational base on which to base decision-making, but for him prices are the only viable alternative."

On the other hand, Neurath believed that there are viable alternatives to prices on which to base rational decision-making. However, these required the development of communication tools. Not surprisingly, Neurath devoted the later part of his career to developing them. This is the thread connecting the logical positivism, the Isotype system (International System of Typographic Picture Education) and Neurath's vision for a bottom up unified (but always provisory) scientific language, which would underpin his provisional encyclopaedia (Cat 2010, 2019). These in turn correspond to the non-market technological infrastructures that allow for society to function at a higher level of complexity that we referred to earlier.

Cybernetics is politically ambiguous in that it is compatible with both positions on rationality (Mises/Lange vs Hayek/Neurath). Indeed, Fernando Flores's intellectual and political development, as narrated by Morozov, can be understood as a transition from the Mises/Lange position to the Neurath/Hayek one. This is why I am particularly intrigued by the fact that Morozov does not mention Hayek and his influence on the Chicago Boys. Not only did Hayek visit Chile and met with Pinochet after the Coup, he was at the University of Chicago from 1951 to 1962 and met regularly with members of the Chicago School through the Mont Pelerin Society.[11] Moreover, he also influenced the thinking of Jaime Guzmán, the

[10] Mises's article was originally published in 1920 in the Archiv für Sozialwissenschaften under the title „Die Wirtschaftsrechnung im sozialistichen Gemeinwesen".

[11] Note that the scholarship training program which funded the Chicago Boys' post-graduate work at Chicago began in the 1950s. Between 1957 and 1970 close to a hundred students went to Chicago to receive economics training (Biglaiser 2002), so a good fraction of them at least coincided with Hayek there. At the very least, it is reasonable to assume that they knew about him and his ideas, since Hayek certainly was acquainted with those members of the Chicago School that also attended the Mont Pelerin Society conferences.

key architect behind Pinochet's constitution (Cristi 1984; 1991; 1998; 2000; 2011). Finally, it is widely acknowledged that Hayek had an interest in Cybernetics and was influenced by it (Lewis 2016; Oliva 2016).

Conclusion

It is clear that cybernetics does not have an inherent political valence. As the parallel that Morozov draws between Cybersyn and Operación Cóndor attest to, "cybernetic" technologies can be put to very different uses. At the same time, what a "cybernetic" society might entail is not very clear. Indeed, I would argue that in some sense, the demise of cybernetics is more a case of receding into the background than a fading away. Our current situation, in which a handful of central banks, led by the US Federal Reserve Board, together with three asset management firms and five tech giants essentially act as de facto planners of the global economy, looks very much like a technocratic version of cybernetics. Similarly, the increasing deployment of machine learning technologies to automate different aspects of decision-making might quite plausibly be seen as the coming of a "cybernetic technocracy".

Morozov has a different vision. His vision of cybernetics is to use it as a conceptual springboard to generate experiments in creating decentralized planning systems not based on the price system. He argues that the Left should aspire to a socialization of what he calls the "feedback infrastructure" (Morozov 2019) so as to generate what he has called a "multiplicity of non-capitalisms"(*Evgeny Morozov on Discovery Beyond Competition* 2023).

This would allow the Left to get involved in three complementary projects. Morozov calls the first of these projects "solidarity as a discovery procedure." The second is called "designing 'non-markets" and the third is called "automated planning" (Morozov 2019).

The first project is to use information technologies to design methods to identify new needs and ways to meet them through mechanisms that do not depend on the price system or the market. The idea is to use the "feedback infrastructure" to uncover social problems and facilitate deliberation around them, presenting different conceptual approaches to the issues involved. Thus, democratic procedures based on deliberation could themselves be modes of problem-solving and means of social coordination. The basic intuition behind this proposal is that it is not true that capitalist competition will necessarily produce better knowledge than other discovery procedures; nor that our needs are best expressed in the language of competition.

The second project focuses on problems of social coordination that are not linked to production and consumption. The goal is for radical democracy to join the "radical bureaucracy" to take advantage of advanced planning, simulation, and coordination infrastructures. Thus, once social coordination is freed from the price system, there is no reason to suppose that public institutions are always inferior to private ones in managing complexity. For this reason, Morozov believes that it would be possible to replace markets with alternative institutions designed to take advantage of information flows to solve problems of complexity. It would therefore be necessary to push in the direction of

ensuring free and universal access to planning, computing and coordination infrastructures, so that local institutions, charged with reducing complexity in their own contexts, can find their own optimal solutions (Morozov 2015). However, before we can turn to such bright futures, we are better advised to begin understanding the power of dark tech.

References

Babintseva, Ekaterina and Slava Gerovitch. 2020. "The Wired Cold War." Interviewed by Sean Guillory. December 4, 2020. *The Eurasian Knot*. Audio 1:13:25. https://euraknot.org/2020/12/04/the-wired-cold-war/.

Biglaiser, Glen. 2002. "The Internationalization of Chicago's Economics in Latin America." *Economic Development and Cultural Change* 50 (2): 269–286.

Cat, Jordi. 2010, 2019. "Otto Neurath." In *The Stanford Encyclopedia of Philosophy* edited by Edward N. Zalta and Uri Nodelman. Spring 2023 edition. Metaphysics Research Lab, Stanford University. https://plato.stanford.edu/archives/spr2023/entries/neurath/.

Cristi, Renato. 2011. *El Pensamiento Político de Jaime Guzmán: Una Biografía Intelectual*. Segunda edición. LOM Ediciones.

Cristi, Renato. 2000. "The Metaphysics of Constituent Power: Schmitt and the Genesis of Chile's 1980 Constitution." *Cardozo Lawreview* 21 (5–6): 1749–1776.

Cristi, Renato. 1998. *Carl Schmitt and Authoritarian Liberalism: Strong State, Free Economy*. The University of Wales Press.

Cristi, Renato. 1991. "Hayek, Schmitt Y El Estado De Derecho." *Revista Chilena De Derecho* 18 (2): 189–202.

Cristi, Renato. 1984. "Hayek and Schmitt on the Rule of Law." *Canadian Journal of Political Science*,17 (3): 521–535.

Gerovitch, Slava. 2002. *From Newspeak to Cyberspeak: A History of Soviet Cybernetics*. MIT Press.

Hamilton, Walton. 1941. *Patents and Free Enterprise* 31 (31). Investigation of Concentration of Economic Power. Temporary National Economic Committee. U.S. Government Printing Office,

Hayek, Friedrich A. 1948. "Economics and Knowledge." In *Individualism and Economic Order*, 33–56. The University of Chicago Press.

Lange, Oskar and Fred M. Taylor. 1938. *On the Economic Theory of Socialism*. Edited by Benjamin E. Lippincott. University of Minnesota Press.

Lewis, Paul A. 2016. "Purposeful Behaviour, Expectations, and the Mirage of Social Justice: The Influence of Cybernetics on the Thought of F. A. Hayek." History of Economics Society Meeting, Durham, NC. https://www.kcl.ac.uk/political-economy/assets/research/paul-lewis-hayek-cybernetics-2016.pdf.

Medina, Eden. 2011. *Cybernetic Revolutionaries: Technology and Politics in Allende's Chile*. MIT Press.

Morozov, Evgeny. 2023. "On Discovery Beyond Competition." Interviewed by Jan Groos. *Future Histories*. Season 2, Episode 44. Audio 1:45:20. https://www.youtube.com/watch?v=3lxPMem0USM.

Morozov, Evgeny. 2019. "Digital Socialism?" *New Left Review* 116/117: 33–67.

Morozov, Evgeny. 2015. Socialize the Data Centres! *New Left Review* 91: 45–66.

12 (8): 33–41. 2023.
https://wp.me/p1Bfg0-81l

Neurath, Otto. 1973. "Through War Economy to Economy in Kind." In *Empiricism and Sociology* edited by Marie Neurath and Robert S. Cohen, 123–157. Netherlands: Springer.

Oliva, Gabriel. 2016. "The Road to Servomechanisms: The Influence of Cybernetics on Hayek from The Sensory Order to the Social Order." *CHOPE Working Paper*, 2015–11.

O'Neill, Jhon. 1996. "Who Won the Socialist Calculation Debate?" *History of Political Thought*, 17 (3): 431–442.

Pickering, Andrew. 2010. *The Cybernetic Brain: Sketches of Another Future*. University of Chicago Press.

Uebel, Thomas. E. 2007. "Otto Neurath as an Austrian Economist: Behind the Scenes of the Early Socialist Calculation Debate." In *Otto Neurath's Economics in Context* edited by Elisabeth Nemeth, Stefan W. Schmitz, Thomas E. Uebel, 37–59. Netherlands: Springer

Unger, Roberto. M. 2019. *The Knowledge Economy*. Verso.

von Mises, Ludwig. 1963. "Economic Calculation in the Socialist Commonwealth." In *Collectivist Economic Planning: Critical Studies on the Possibilities of Socialism* 6th edition, edited by Friedrich A. Hayek, 87–130. Routledge & Kegan Paul Ltd.