



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

Science and Socialism in the Time of Coronavirus

William T. Lynch, Wayne State University, [William.Lynch@wayne.edu](mailto:William.Lynch@wayne.edu)

---

Lynch, William T. 2020. "Science and Socialism in the Time of Coronavirus." *Social Epistemology Review and Reply Collective* 9 (10): 16-25. <https://wp.me/p1Bfg0-5up>.

The great civilizational crisis of 2020 has shown the bankruptcy and impotence of the last half-century of neoliberal economics and politics in the face of challenges it is not well equipped to face. Trade wars, a viral pandemic, rising inequality, Depression-level unemployment, police oppression and murder, fires and floods, racial injustice, and rising fascist movements in the halls of power and in the streets. The confluence of disastrous developments has made the year 2020 a signifier for black humor in internet memes, a cynicism buoyed by a lingering hope that belies the bad news: if only we can make it through the year, all will be well.

I hate to break it to you, but that's not going to happen. 2020 is a harbinger of the multifaceted, linked challenges we will face for the foreseeable future. Moreover, the old is new again, with fascists and socialists battling like it's the 1930s, this time with climate change and environmental devastation thrown in for good measure.

### **Rescuing Capitalism**

Many countries have responded to the crisis with what could only be called emergency socialist planning. Socialism has been called on to rescue capitalism once again.<sup>1</sup> Payroll guarantees, basic income payments, unemployment insurance, and state management of the economy to sort out essential workers from those who can be quarantined, or who can work online, have found their place as part of science-directed plans to contain the epidemic. In the U.S., the world headquarters of neoliberalism, a more muted approach took place, with a lone emergency bill offering citizens a one-time payment of \$1200, and an anemic and byzantine payroll support plan. This led to explosive unemployment growth without significant supports for businesses and workers. Small businesses and contract workers took the brunt of the hit here, leading to anger over elite scientists shutting down the economy, especially among supporters of President Trump, whose penchant for realizing a post-fact epistemic regime bodes poorly for Science and Technology Studies researchers who want to revel in symmetry and post-truth.

For a brief moment, the self-styled socialist Presidential candidate, Bernie Sanders, already edged out of contention for the Democratic ticket, proposed an aggressive plan for keeping the economy afloat more in keeping with what many other countries have done to minimize economic disruption by guaranteeing payroll.<sup>2</sup> In truth, Sanders was more a run-of-the-mill social democrat in the European mold than anyone looking to actually transform capitalism into a new kind of economic system, with proposals for universal health care, environmental reform, and minimum wage increases driving his platform (<https://berniesanders.com/issues/>). However, the crisis did lead him to outline a thoroughgoing management of the U.S. economy in crisis, while Trump dithered and Biden disappeared from view. This kind of socialist planning would have been familiar to the circle of Marxist British scientists led by J. D. Bernal, using science to direct the economy in the

---

<sup>1</sup> Slobodian (2018), p. 16. On the role of Franklin Roosevelt's New Deal in coopting socialist movements in the U.S., compare Lipset and Marks (2001) and Jones (2002).

<sup>2</sup> Bunch (2020). See also the reluctant acknowledgement that the coronavirus "proved him right" in "Coronavirus Proved Bernie Sanders Right" (2020); "Coronavirus Proves Sanders was Right" (2020).

public interest and seeking to overcome the limitations of science under capitalism for meeting public needs.

### **Technocratic Socialism**

The confident endorsement at that time of a kind of technocratic socialism as a solution for the failures of capitalism made evident by the Great Depression also elicited a counterreaction—or is that a counterrevolution?—led by the intertwined economic theory and philosophy of science of Friedrich Hayek and Michael Polanyi (Werskey 1988, ch. 3; Nye 2011, ch. 6). For both the Marxist planners and the neoliberal anti-planners, science was crucial to an understanding of economics, political philosophy, and philosophy of science. Both camps contributed to the discovery that science was constitutively social, albeit with quite distinct conceptions of the social, as we shall see. Recent critical work on both the neoliberals and the Marxist scientists has shown that there is a much more explicitly political prehistory to Science and Technology Studies than the standard story where Thomas Kuhn and other renegade philosophers overturned an allegedly asocial, positivist philosophy of science.

The key macro-political event here is the Great Depression, which shattered the faith of many in capitalism, democracy, and progress. Most intellectuals, economists, philosophers, and social scientists believed that free market capitalism had failed, as evidenced by mass unemployment and the rise of working class movements and revolutions. Much of the debate turned on the issue of planning as a corrective to the failings of laissez faire capitalism. On this point, many claimed the future belonged to socialism, while others argued that capitalism could find its own kind of planning. John Maynard Keynes's emphasis on using government stimulus and spending to spur the economy during inevitable downturns became the dominant economic theory during this time period, but other varieties of planning were endorsed across the political spectrum (Beddeleem 2017, ch. 2). The key micro-political event was the surprise arrival of a Soviet delegation, led by Nikolai Bukharin, to the Second International Congress of the History of Science in 1931 (Beddeleem 2017, 32-42; Nye 2011, 191-93). Perhaps the most famous and controversial paper in the history of science was delivered by physicist-turned-historian-of-science Boris Hessen, whose paper, "The Social and Economic Roots of Newton's *Principia*," provided the exemplar for "externalism" in the history of science by showing the influence of capitalism on Isaac Newton's discoveries (Hessen 1931). We now know that Hessen was reacting against ideologues in the Soviet Union who accused Einstein's theories of relativity of being bourgeois science by showing that Newton's science likewise was shaped by capitalism, but remained no less a contribution to advancing science for that (Graham 1985).

Hessen and Bukharin would pay for this heresy with their lives, but not before Bernal and his circle would endorse Hessen's externalist history and call for the transformation of science itself to overcome the "frustration of science" at the hands of capitalism (Blackett 1935). Impressed by the Soviet Union's commitment to funding science as a higher percentage of national income than any other nation, and never concerned to abandon that faith when growing recognition of the crimes of Stalin led other Marxists to reject communism, Bernal and company continued as committed Stalinists (Nye 2012, 188). Indeed, it appears that when correspondence with Hessen dried up and the worst was feared, nothing more was said lest the example of Stalin's Soviet Union was tarnished for the

British Marxists.<sup>3</sup> Historians of science used Hessen (and Bernal) as a foil to help define dominant internalist approaches to history of science by way of reaction (Ienna and Rispoli 2019; Mayer 2004).

### **The Beginnings of Neoliberalism**

The 1930s also saw a marginal movement of Central European refugees who began to seek an alternative to planning that also rectified the limitations of nineteenth-century *laissez faire* liberalism. They used the term “neoliberalism,” though we now know it in the United States as free market conservatism. This terminology leads to no end of confusion, especially for Americans, as the focus of neoliberalism is actually on embedding markets in strong states that support new kinds of property rights, while Americans often equate “liberal” with left-wing.<sup>4</sup> A half-century after it began, this movement found institutional support and finally political victory, as Margaret Thatcher and Ronald Reagan came to power (Phillips-Fein 2009, ch. 2).

Historians are only now digging into the intellectual and institutional roots of this movement, with a focus on the Mont Pèlerin Society, founded in 1947, whose members have won eight Nobel Prizes in Economics and served in positions of political power and academic influence. The original founders of the society reacted against dominant ideas of economic and scientific planning and developed new understandings of economics, philosophy of science, and political freedom. There was nothing automatic about this process and examining it helps us see the power of historical explanation to illuminate present realities, drawing upon intellectual history, institutional history, and political history (Mirowski and Plehwe 2015; Hull 2006; Plehwe, Slobodian, and Mirowski 2020).

If we were to give this new, critical history a long title like those common in the early history of book publishing, it would be: How Central European refugees from totalitarianism, steeped in the controversies over socialism and scientific positivism in their home countries, reacted negatively to British Marxist scientists’ embrace of Soviet externalism in the history of science, itself only briefly favored under Stalin before being liquidated, in developing a new kind of free market liberalism (“neoliberalism”) opposed to dominant ideas of planning by socialists and liberal Keynesians alike, as well as developing a new conception of freedom

---

<sup>3</sup> Chilvers (2004). In a period when monuments to the Confederacy are being torn down, it is curious that the Society for the Social Studies of Science (4S) continues to give out a Bernal prize. A better figure to memorialize would be Boris Hessen himself, whose externalism proved more sophisticated than critics had argued and who ended up a martyr for the independence of science from authoritarian political interference. On the sophistication of Hessen’s approach, see Schaffer (1984); Ienna and Rispoli (2019). See also the discussion of Otto Neurath below for a figure who combined an activist commitment to a conception of socialism opposed to Bolshevism with a thoroughly sociological conception of science. See Lynch (2021), ch. 5; Uebel (1992).

<sup>4</sup> See Slobodian (2018); Mirowski (2013), available also in Mirowski (2014), 50-67. While the Republican party is the home party of neoliberalism, Jimmy Carter anticipated many neoliberal policies implemented by Reagan, while Bill Clinton implemented neoliberal policies as part of the effort by the Democratic Leadership Council to support welfare reform, free trade treaties, and incorporate market-based approaches to social inequality and environmental problems, including enterprise zones, charter schools, and cap and trade climate and pollution policies. See Jones (2012), ch. 6; Blyth (2002), 161-72; Geisner (2019).

and autonomy in science that anticipated modern social studies of science and served as the basis for Cold War propaganda, developing their movement of ideas over a half century before emerging as the new scientific and ideological basis for the global economy with the rise of Margaret Thatcher and Ronald Reagan.<sup>5</sup>

The critical history of neoliberalism led by Mirowski demonstrates that neoliberalism cannot just be seen as the latest stage of capitalism, a superstructure of ideas reflecting an underlying economic base. Rather, markets, like science, are human constructions that behave as they do because of how we have built them as institutions. Markets are not pre-existing entities or a proxy for human nature.<sup>6</sup> Mirowski brings institutionalist economics together with constructivist STS to show the contingent roots of our current predicaments. Part of building an alternative to today's neoliberal regime requires showing the long and active effort by neoliberals to bring their model to the fore, one that depended upon support from businessmen and politicians to be sure, but that crucially depended upon the active construction of a different kind of knowledge than that available already. In effect, the history of neoliberalism is the paradigm example of the long march through the institutions to build a counterhegemony that Antonio Gramsci had urged Marxists to carry out. Mirowski does not lay out a specific ten-point or five-year plan, but does urge the left to know their enemy so that their actions do not respond to an absent and romanticized context and so that their "resistance" does not become coopted in ever-more subtle neoliberal forms.<sup>7</sup>

### Neoliberal Epistemology

Key to neoliberal epistemology is a conception of knowledge as something that cannot in principle be "planned," which is a fancy way of saying that directing societal resources towards collective needs is a self-defeating proposition. There is no alternative (TINA) short of tyranny. This view was worked out by Friedrich Hayek and Michael Polanyi, with crucial support as well from Karl Popper (Hayek 1944; Polanyi 1962; Popper 1971). Of most relevance to STS researchers is the role of Polanyi's "tacit knowledge" in blocking outside criticism of scientific findings or fields. The result is a "self-warranting" view of expertise, recently explicitly worked out by Harry Collins and Robert Evans, but arguably pervasive in STS as a whole.<sup>8</sup> Even left critics of science have tended to take on board this view as it was easy to see tacit knowledge as the kind of skilled labor valorized by the labor movement.<sup>9</sup> Arguably, Hessen's model of a more relational and dialectical approach has been obscured by the incoherent fusion of concepts from contradictory approaches facilitated by science studies' blindness to its own history. Thus, even in Mary Jo Nye's remarkable book on Michael Polanyi's role in the "origins of the social construction of science," there is a tendency to assimilate the camps of Bernal and Polanyi to the same "social" interpretation of science once she has shown the intensity of their conflicts over planning science in

---

<sup>5</sup> On CIA-funded, Cold War science studies, see Aronova (2012).

<sup>6</sup> Compare Harvey (2007) and Mirowski (2014), pp. 42-43. Mirowski generalizes the point to a critique of Marxism in Mirowski (2019). On markets as constructions that help shape human inequality, rather than flowing naturally from an innate tendency to barter, see Lynch (2019) and Graeber (2011).

<sup>7</sup> On this issue, see in particular the chapter on "The Red Guide to the Neoliberal Playbook" in his post-mortem of the 2008-2009 economic collapse: Mirowski (2014), ch. 6.

<sup>8</sup> Collins and Evans (2007); Collins (2014). For criticisms, see Lynch (2021).

<sup>9</sup> See, for example, the discussion of Jeremy Ravetz in Nye (2011), pp. 293-94.

particular.<sup>10</sup> One might almost hear echoes of police brutality victim Rodney King’s plea, asking “can we all get along?”

The answer for STS, as it was for critics of and apologists for police brutality, is a decisive no. We cannot get along so long as the conditions creating the problem continue to exist. Rather, we should answer Florence Reece’s lyrical query, made famous by Pete Seeger’s song: “Which side are you on?” (Maxwell 2011). Should we understand science as a set of autonomous and independent self-warranting communities or should we understand science as a complexly interacting dialectic emerging from contingent societal contexts that constrain our vision but point beyond it? On one view, you will just need to shut up and take your medicine when your doctor treats you rather than consult “Dr. Google.” On the other hand, you should accept expert advice tentatively, subject to criticism from other kinds of experts and from those sharing their experience with failures of medical treatment (Collins 2018; Epstein 1996; Lynch 2021, 143-61, 213-21).

As scholars, it goes against our instincts to urge political commitment, at least collectively as a field. And yet, the deleterious impact of neoliberalism is starting to erode the very picture of science as an open and intellectually diverse institution as knowledge has become commodified and subject to market forces. This is an ironic development considering that neoliberalism has arguably eroded academic freedom in a way that would have horrified Polanyi.<sup>11</sup> The emergence of a neoliberal funding regime for science has eroded the sharing of research materials among scientists and seen the emergence of corporate ghostwriting of medical journal articles on behalf of pharmaceutical companies, along with an increase in cases of fraud, misconduct, retractions, and predatory journals (Mirowski 2011; Ziman 2000, ch. 4; Sismondo 2018; Lynch 2021, ch. 7).

While no Marxist, Robert Merton’s early work on the normative structure of science borrowed from the British Marxists’ concern with the “frustration of science” and shared their concern with commercial corruption of science, an element of his argument often forgotten as his criticisms of totalitarian distortion of science via Nazi eugenics and Soviet Lysenkoism came to the fore in Cold War readings of his work (Merton 1973; Mendelsohn 2008, 278; Turner 2007, 173). In his own extended discussion of the social implications of expertise-for-hire in media sociology, growing out of his collaboration with Paul Lazarsfeld on mass media manipulation of radio listeners, Merton decried the rise of “technicians in sentiment,” who would manipulate listeners in line with the needs of their funders. While Merton’s structural-functionalism has been left behind for good reasons in sociology, the current dogma that scientific behavior is (or could or should be) unconstrained by norms fails to let us see how science as a liberatory and open institution may be under renewed

---

<sup>10</sup> Turner (2012), pp. 945-53. Turner distinguishes left and liberal theories of science and rejects Nye’s assimilation of the two: “Her claim is that Polanyi had more in common with his enemies than he realized, and was simply mistaken in his rejection of Bernalism and the Left view of science. The history, for Nye, was a history of misunderstanding, and the misunderstanding was on Polanyi’s part” (p. 946).

<sup>11</sup> Polanyi modeled science on the market but understood it as embedded within institutions relying upon trust and authority. As such, his neoliberalism incorporated a form of neoconservatism that fits poorly with contemporary neoliberalism, although it has been part of the legacy of Thatcher and Reagan as well. See Thorpe (2009).

threat as the latest non-profit institution subject to the neoliberal wrecking ball, after health care and education.<sup>12</sup>

### **Socialism and Logical Positivism**

Ironically, a better model for a politically engaged, sociologically-informed approach to science comes from the heart of the movement of logical positivism, long rejected within STS as authoritarian, anti-sociological, and apolitical. Recent critical historiography of logical positivism has brought to the fore both its largely socialist political ambitions and its compatibility with a sociological or conventional account of science. Otto Neurath, in particular, can be seen as developing a thorough-going sociological account of science based upon socio-material practices that define fields of inquiry in distinct, and initially incommensurable, ways. As Uebel put it, Neurath argued that “the justification of scientific knowledge should not, indeed could not, proceed by means of heavily idealized reconstruction which neglected the distinctive characteristics of what he deemed the real object of concern, historically developed theories” (Uebel 1992, 74).

The point of the “unity of science,” in his mind, was not the reduction of all science to physics or to a foundation of theory-free observation. Instead, he argued that one should begin with concrete scientific practices as they exist—borrowing Marx’s early historical materialist emphasis on praxis, applied to scientific fields—and then work to integrate them in the solution of concrete problems requiring the input of many fields (Uebel 1992; Cartwright, Cat, Fleck, and Uebell 1996; Reisch 1994; Cuha 2013). In this sense, the scientific planning Neurath endorsed was bottom-up, rather than top-down, and required scientific pluralism, excluding only theological, magical, or metaphysical language that could not be translated into everyday, practical language accessible to all that could inform common action (Lynch 2021, 188-89). Neurath rejected a technocratic approach he termed “pseudorationalism,” arguing for popular participation in the application of science to public policy. Reisch argues that Neurath’s approach “assumed just as much freedom as Popper’s. It demanded an unrestricted production of ideas about how terms and statements of different sciences could be coordinated and made consistent.”<sup>13</sup>

It would be a useful exercise to apply this model to contemporary challenges like climate change, environmental pollution, the depletion of natural resources, the rise of political authoritarianism, and the continued growth of wealth inequality. Managing the COVID-19 pandemic would be another good example, as epidemiologists, lab-based virologists, contributors to behavioral medicine, and those who study the global economy would need to coordinate their competing metaphysical, methodological, and value assumptions in the effort to work out a scientifically integrated approach that could inform effective, democratically-informed policy. Experts would not be deferred to and their metaphysical commitments treated as sacrosanct but would be asked to craft answers that fit the demands of a common problem and recognize the contributions of other experts.

---

<sup>12</sup> Lynch (2021), ch. 7; Radder (2010). On the limitations and strengths of Merton’s flexible alternative to Parsons’ more holistic and unitary functional approach, see Emmet (1966); Turner (2014), pp. 820-24, 827, 833.

<sup>13</sup> Reisch (1994), p. 172. Compare Popper (1982), 31-38, 78-87, and Neurath (1983).

Central to Neurath's approach was the effort to educate the public so that they could act with better knowledge to improve social conditions on their own. He developed a visual language Isotype with his wife Marie Neurath (née Reidemeister) to make statistical and historical information readily available to the public without imposing a specific party platform or theoretical program that must be followed (Neurath 2010; Neurath and Kinross 2009). In this, he supported the self-emancipation of the working class that arguably fits better with Marx and Engels' initial motivations than the technocratic and top-down approach of Bernal or Stalin (Lynch 2021, ch. 5; Cat 2019; Blackledge 2019; Cleaver 1979). At the same time, he went beyond the social democratic policies of someone like Bernie Sanders by encouraging practical experiments in worker control at the municipal level and beyond. His participation in the short-lived Bavarian Soviet Republic in 1919, for which he was imprisoned and deported, showed him seeking to socialize the economy while resisting bureaucratization by incorporating the already existing workers' organizations in the planning process (Galison 1990, 714; Cartwright, Cat, Fleck, and Uebell 1996, 41-56).

Rather than revel in populist no-nothingism, endorsing post-truth, or treating all perspectives or funding regimes as equally valid, we should be looking to identify the elements of the social organization of knowledge that facilitate or thwart the solution to problems facing our civilization, without reducing scientific fields to a common mode of producing knowledge. Science can serve the public interest but only if we free it from neoliberal frustration and facilitate the incorporation of perspectives blocked by both the calcified dogmas of insular experts and the distortion brought on by newly-imposed market forces. Science and Technology Studies should be playing a role in articulating a non-technocratic approach to integrating distinct disciplines relevant to significant challenges faced by global society. At the same time, political movements challenging capitalism and its ever-increasing tendency to economic, political, societal, and environmental crisis is urgent.

## References

- Aronova, Elena. 2012. "The Congress for Cultural Freedom, *Minerva*, and the Quest for Instituting 'Science Studies' in the Age of Cold War." *Minerva* 50 (3): 307-37.
- Beddeleem, Martin. 2017. "Fighting for the Mantle of Science: The Epistemological Foundations of Neoliberalism, 1931-1951." PhD diss., University of Montreal.
- Blackett, P. M. S. 1935. "The Frustration of Science." In *The Frustration of Science*, edited by Sir Daniel Hall et al., 129-41. New York: W. W. Norton.
- Blackledge, Paul. 2019. *Friedrich Engels and Modern Social and Political Theory*. Albany, N.Y.: SUNY Press.
- Blyth, Mark. 2002. *Great Transformations: Economic Ideas and Institutional Change in the Twentieth Century*. Cambridge: Cambridge University Press.
- Bunch, Will. 2020. "Coronavirus Shows Bernie Sanders was Right. How Can We Change America to His Vision?" *The Philadelphia Inquirer*, April 12, 2020.  
<https://www.inquirer.com/opinion/commentary/bernie-sanders-2020-presidential-coronavirus-medicare-for-all-20200412.html>.
- Cartwright, Nancy, Jordi Cat, Lola Fleck, and Thomas E. Uebel. 1996. *Otto Neurath: Philosophy between Science and Politics*. Cambridge: Cambridge University Press.

- Cat, Jordi. 2019. "Political Economy." Supplement to "Otto Neurath." *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. Fall 2019. <https://plato.stanford.edu/archives/fall2019/entries/neurath>.
- Chilvers, C. A. J. 2004. "The Dilemmas of Seditious Men: The Crowther–Hessen Correspondence in the 1930s." *The British Journal for the History of Science* 36 (4): 417–435.
- Cleaver, Harry. 1979. *Reading Capital Politically*. Austin: University of Texas Press.
- Collins, Harry. 2014. *Are We All Scientific Experts Now?* Cambridge, Eng.: Polity.
- Collins, Harry. M., and Robert Evans. 2007. *Rethinking Expertise*. Chicago: University of Chicago Press.
- "Coronavirus Proved Bernie Sanders Right. But Only Partly." 2020. *Los Angeles Times*, April 8, 2020. <https://www.latimes.com/opinion/story/2020-04-08/sanders-medicare-for-all-coronavirus>.
- "Coronavirus Proves Sanders was Right about Medicare for All — and Wrong." *Miami Herald*, April 10, 2020. <https://www.miamiherald.com/opinion/oped/article241923361.html>.
- Cuha, Ivan Ferreira da. 2013. "The Utopia of Unified Science: The Political Struggle of Otto Neurath and the Vienna Circle." *Principia: An International Journal of Epistemology* 17 (2): 319–29.
- Emmet, Dorothy. 1966. *Rules, Roles, and Relations*. London: Macmillan.
- Epstein, Steven. 1996. *Impure Science: Aids, Activism, and the Politics of Pure Knowledge*. Berkeley: University of California Press.
- Galison, Peter. 1990. "Aufbau/Bauhaus: Logical Positivism and Architectural Modernism." *Critical Inquiry* 16: 709–52.
- Geismer, Lily. 2019. "Democrats and Neoliberalism." *Vox*, June 11, 2019. <https://www.vox.com/polyarchy/2019/6/11/18660240/democrats-neoliberalism>.
- Graeber, David. 2011. *Debt: The First 5,000 Years*. New York: Melville House.
- Graham, Loren R. 1985. "The Socio-Political Roots of Boris Hessen: Soviet Marxism and the History of Science." *Social Studies of Science* 15 (4): 705–722.
- Gramsci, Antonio. 1992. *Prison Notebooks*, 2 vols. New York: Columbia University Press.
- Harvey, David. 2007. *A Brief History of Neoliberalism*. Oxford: Oxford University Press.
- Hayek, F. A. 1944. *Road to Serfdom*. Chicago: University of Chicago Press.
- Hessen, B. 1931. "The Social and Economic Roots of Newton's *Principia*." In *Science at the Crossroads*, edited by N. Bukharin. London: Kniga.
- Hull, Richard. 2006. "The Great Lie: Markets, Freedom and Knowledge." In *Neoliberal Hegemony: A Global Critique*, edited by Dieter Pichwe, Bernhard Walpen, and Gisela Neunhöffer, 141–55. London: Routledge.
- Ienna, Gerardo, and Giulia Rispoli. 2019. "Boris Hessen at the Crossroads of Science and Ideology: From International Circulation to the Soviet Context." *Societate si politica* 13 (1): 37–63.
- Jones, Daniel Stedman. 2012. *Masters of the Universe: Hayek, Friedman, and the Birth of Neoliberal Politics*. Princeton: Princeton University Press, 2012.
- Jones, Shannon. 2002. "It Didn't Happen Here: Why Socialism Failed in the United States." *World Socialist Web Site*, March 6, 2002. <http://intsse.com/wswspdf/en/articles/2002/03/book-m06.pdf>.
- Lipset, Seymour Martin, and Gary Marks. 2001. "How FDR Saved Capitalism." *Hoover Digest* 1, <https://www.hoover.org/research/how-fdr-saved-capitalism>.

- Lynch, William T. 2019. "Between Kin Selection and Cultural Relativism: Cultural Evolution and the Origin of Inequality." *Perspectives on Science* 27 (2): 278-315.
- Lynch, William T. 2021. *Minority Report: Dissent and Diversity in Science*. Lanham, Md.: Rowman and Littlefield.
- Maxwell, Tom. 2018. "A History of American Protest Music: Which Side are You On?" *Longreads*, August, 2018. <https://longreads.com/2018/08/29/history-of-american-protest-music-which-side-are-you-on/>.
- Mayer, Anna-K. 2004. "Setting up a Discipline, II: British History of Science and 'the End of Ideology', 1931-1948." *Studies in History and Philosophy of Science Part A* 35 (1): 41-72.
- Mendelsohn, Everett. 2008. "Robert K. Merton: The Celebration and Defense of Science." *Science in Context* 3 (1): 269-89.
- Merton, Robert K. 1973. "The Normative Structure of Science." In idem, *The Sociology of Science: Theoretical and Empirical Investigations*, 267-78. Chicago: University of Chicago Press.
- Mirowski, Philip. 2011. *Science-Mart: Privatizing American Science*. Cambridge: Harvard University Press.
- Mirowski, Philip. 2013. "The Thirteen Commandments of Neoliberalism." *The Utopian*, June 19, 2013. <https://www.the-utopian.org/post/53360513384/the-thirteen-commandments-of-neoliberalism>.
- Mirowski, Philip. *Never Let a Serious Crisis Go to Waste: How Neoliberalism Survived the Financial Meltdown*. London: Verso, 2014.
- Mirowski, Philip. 2019. "Hell Is Truth Seen Too Late." *boundary 2* 46 (1): 1-53.
- Mirowski, Philip, and Dieter Plehwe, eds. 2015. *The Road From Mont Pèlerin: The Making of the Neoliberal Thought Collective*. Cambridge, Mass.: Harvard University Press.
- Neurath, Marie, and Robin Kinross. 2009. *The Transformer: Principles of Making Isotype Charts*. London: Hyphen Press.
- Neurath, Otto. 1983. "Pseudorationalism of Falsification." In *Philosophical Papers, 1913-1946*, edited by Robert S. Cohen and Marie Neurath, 121-31. Dordrecht, Holland: D. Reidel.
- Neurath, Otto. 2010. *From Hieroglyphics to Isotype: A Visual Autobiography*. London: Hyphen Press, 2010.
- Nye, Mary Jo. 2011. *Michael Polanyi and His Generation: Origins of the Social Construction of Science*. Chicago: University of Chicago Press.
- Phillips-Fein, Kim. 2009. *Invisible Hands: The Making of the Conservative Movement from the New Deal to Reagan*. New York: W.W. Norton.
- Plehwe, Dieter, Quinn Slobodian, and Philip Mirowski, eds. 2020. *Nine Lives of Neoliberalism*. London: Verso.
- Polanyi, Michael. 1962. "The Republic of Science: Its Political and Economic Theory." *Minerva* 1 (1): 54-73.
- Popper, Karl. 1971. *The Open Society and Its Enemies*, 2 vols. Princeton: Princeton University Press.
- Popper, Karl. 1982. *Unended Quest: An Intellectual Autobiography*. La Salle, Ill.: Open Court.
- Radder, Hans. 2010. "Mertonian Values, Scientific Norms, and the Commodification of Academic Research." In *The Commodification of Academic Research: Science and the Modern University*, edited by Hans Radder, 231-58. Pittsburgh, Penn.: University of Pittsburgh Press.

- Reisch, George A. 1994. "Planning Science: Otto Neurath and the 'International Encyclopedia of Unified Science'." *The British Journal for the History of Science* 27 (93): 153-75.
- Schaffer, Simon. 1984. "Newton at the Crossroads." *Radical Philosophy* 37: 23-28.
- Sismondo, Sergio. 2018. *Ghost-Managed Medicine*. Manchester, Eng.: Mattering Press.
- Slobodian, Quinn. 2018. *Globalists: The End of Empire and the Birth of Neoliberalism*. Cambridge, Mass.: Harvard University Press.
- Turner, Stephen. 2007. "Merton's 'Norms' in Political and Intellectual Context." *Journal of Classical Sociology* 7 (2): 161-78.
- Turner, Stephen. 2012. "Polanyi Defanged." *Social Studies of Science* 42 (6): 945-53.
- Turner, Stephen. 2014. "Robert Merton and Dorothy Emmet: Deflated Functionalism and Structuralism." *Philosophy of the Social Sciences* 44 (6): 817-36.
- Uebel, Thomas E. 1992. *Overcoming Logical Positivism from Within: The Emergence of Neurath's Naturalism in the Vienna Circle's Protocol Sentences Debate*. Amsterdam: Rodopi.
- Werskey, Gary. 1988. *The Visible College: A Collective Biography of British Scientists and Socialists of the 1930s*. London: Free Association Books.
- Ziman, John. 2000. *Real Science: What It Is, What It Means*. Cambridge: Cambridge University Press.