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Does Post-truth Expand or Restrict Political Choice? Politics, Planning, and Expertise in a Post-truth Environment

Abstract: Steve Fuller has replied to my critique of his endorsement of a post-truth epistemology. I trace the divergence in our approach to social epistemology by examining our distinct responses to the principle of symmetry in the sociology of scientific knowledge. Fuller has extended the concept of symmetry and challenged the field to embrace a post-truth condition that flattens the difference between experts and the public. By contrast, I have criticized the concept of symmetry for policing the field to rule ideology critique out of court. I argue that a focus on post-truth populism obscures the role of counter-elites and ideologies that restrict political choice. A better way to promote democracy would be to support minority positions within science that promise to open up suppressed political possibilities and to seek the coordinated use of different disciplines to address significant public problems.

Keywords: post-truth, symmetry principle, Science and Technology Studies, fascism, democracy, social epistemology, social media, ideology, material practice, neoliberal science

1 Introduction

I appreciate Fuller's (2021) response to my criticism of his post-truth epistemology because it helps clarify certain theoretical choices Fuller has made in articulating the project of social epistemology. Social epistemology can be understood as a spinoff project from the high water mark of epistemologically radical sociology of scientific knowledge (SSK). The idea that symmetrical SSK was 'epistemologically' radical was taken to be more radical and brave than merely political radicalism, which always took refuge in the idea that truth will set you free.

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Fuller's reply offers me the opportunity to clarify my own position and how it has evolved in relationship to Fuller's approach to social epistemology. SSK became the basis for STS (*Science and Technology Studies*), morphing into a dogmatic (inter)discipline that has tried to finesse its way into the halls of power as a kind of epistemological aesthete, ready to advise at any moment that strong claims to truth are misguided and crude and would be more effective if first passed through its sophisticated, symmetrical parsing.

Unlike the main thrust of this 'engaged' STS, Fuller does not wish to make nice with the powerful, turning epistemological absolutism into fuzzy pragmatism. Rather, he wants, in effect, to burn the mission down by eliminating any differentiation between experts and non-experts as a violation of democratic principles. The assumption is that scientific experts are actually running things – that they have converted a claim to know into direct political power.[1] Experts need to establish sufficient social support to reproduce themselves and to be credited within particular policy or legal forums – this is one of the key areas of research within STS. Moreover, all scientific activities that are not self-funding require sponsorship from society, whether through royal patrons, wealthy gentlemen practitioners, corporations, foundations, or the state. There is a political economy to knowledge and it shapes what we know and of what we remain ignorant.

But technocratic fantasies aside, those in power *use* experts in ways that the experts may accommodate or resist. The powerful usually benefit from expert missions, from particular models of the relationship between experts and non-experts that serve the interests of the powerful. This is not equivalent to support of experts, as the powerful do not always share their beliefs and rarely share their goals. If the goal is to support dominant political and economic interests, this can involve appealing cynically to truth, post-truth, or no-truth as the need arises.

So the first question to ask about the emergence of a post-truth epistemic regime would be who benefits from the conversion of truth to post-truth? Once we understand that, we can question whether post-truth actually opens up knowledge to a greater pluralism. In the realm of political possibility, do we have more or less possibility for meaningful and effective political action if we transition to a post-truth regime?

My main concern is that Fuller is often philosophically astute but politically tone deaf. I already indicated in my original article that his comfort with

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1 As Söderberg 2022 points out, Fuller also rejects the idea that experts know things in the first place, reducing knowledge claims to government-granted, guild monopolies. This is of a piece with Fuller's evolution from a neo-socialist to a neoliberal thinker, as discussed below.

post-truth may reflect a less worrisome threat to democracy that Brexit posed in the U.K., where Fuller lives, than the coup attempt in the United States. A key difference is that Brexit was initiated by referendum, notwithstanding how misleading the leave campaign may have been, while the coup attempt on January 6, 2021, was consciously plotted in the halls of power as well as on social media, and included violent plans and actions and attempted manipulation of the constitutional safeguards put in place to prevent such these kinds of things from succeeding.

Fuller equivocates on what it means to support *democracy* by referring in his reply to differences in interpretation of the U.S. constitution in the context of a plot to prevent the certification of the election by Congress and the Vice-President. For him, there are just two different interpretations of the Constitution in play and post-truth fairness means we need to hear them both out. So a coup attempt is democracy in action, and its failure implies that "American democracy is very healthy," pivoting by electing Biden instead (Fuller 2021, 406).

This is simultaneously to devalue the actual institutions of democracy intended to provide the kind of political changeability Fuller values and to make a fetish of democracy, exaggerating its openness and resilience and neglecting the narrowness of the options presented by the two-party system.[2] A very minimal Marxian perspective would not equate a change of party at the top of government with a 'reversal' of the underlying social contradictions that continue.

A serious understanding of the post-truth moment would have to reckon with the parallels between post-truth populism now and historical fascism, something that Fuller does not address in his reply. The actions of the January 6 coup participants show that democracy was to be suspended if voters chose the wrong candidate, scapegoating a majority of voters as enemies within and refusing any evidence that could falsify their conspiratorial account of a stolen election.

In Michigan, the trial of those who plotted to kidnap and kill Governor Gretchen Whitmer has revealed that the plot pivoted on vaccine refusal, with a plan to destroy vaccine factories and execute lawyers, doctors, and 'Zionist bankers' (Baldas 2022). False and politicized claims about public health measures, whether sincerely believed or used as a pretext for mobilization (Rosenfeld 2021), make it easier to challenge the legitimacy and good faith of professionals and public health authorities, while bringing classic antisemitism (or formally

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2 Snyder's (2021) second lesson on avoiding tyranny requires that the institutions of democracy be consciously defended instead of assuming that safeguards work automatically to prevent authoritarian rule.

similar ideologies targeting other groups) to bear to describe alleged conspiracies requiring a violent response. Post-truth is intimately connected to fascist mobilization, not democratic engagement over differences in policy.

As I read Fuller, he doesn't respond to my argument about post-truth links to historical fascism directly because he sees the label 'fascism,' like 'populism,' as just another liberal swear word, designed to invoke fear among the public to facilitate the interests of one side of an intra-elite struggle for hegemony. On this point, he is not completely wrong, but he misses the point that there is a wider range of political possibility than that developed within formal politics and the various cultural wars that continue to campaign every season on cable TV and social media.

In his reply, Fuller works to associate my argument with other scholars concerned about disciplining post-truth on behalf of a left/liberal establishment consensus with clear-cut, pre-given rules of argumentation. On this view, truth may be complicated but we must abide by the rules and trust the experts. In doing so, he tries to provide context for my argument for the reader, while at the same time warning me for having abandoned a true social epistemological approach.

Have I not aligned myself with the very elite that looks down with condescension on the rabble for daring to disrupt liberal consensus, thereby eliciting the populist moment in response? And in doing so, have I not followed Harry Collins and Bruno Latour in watering down the symmetry principle's bold move against technocracy by insisting that some positions are just beyond the pale and we should compromise with epistemological fundamentalists to preserve the republic or save the planet? In responding to this (implied) argument, I will further develop my own past criticisms of symmetrical STS and of the political limitations of the elite theory of democracy.

2 Marx, Darwin, and Modal Power

Fuller hints at this issue by referring to my approach as incorporating a (presumably incoherent) mix of Marx and Darwin. While I reject the viability or desirability of reviving any kind of orthodox Marxism at either the party or state level, I do accept the lesson from the 'middle Marx' that social contradictions create opportunities for popular political practice. In other words, a participatory and emancipatory politics is possible that does not simply take sides on behalf of, or serve as proxies for, intra-elite conflict.

So Fuller's argument misses the mark when he associates my view with proposals to pack the Supreme Court on behalf of the U.S. Democratic party. The Democratic party has little to do with participatory and emancipatory

politics, as indicated by its concerted efforts during the primary to hold off a rare left-populist challenge led by Bernie Sanders.[3] The idea that 'actually existing democracy' has been shaped in the interests of the wealthy and powerful should hardly be controversial in the years since the U.S. Supreme Court removed all limitations on corporate funding of elections in 2010, arguably a significant contributing cause to the disenchantment with democracy on both the right and the left (Lau 2019). One could add that the failure of the worldwide protests in 2003 to prevent the Iraq war contributed to the sense among the public that their ability to have any influence on policy was drastically diminished (Ghosh 2016, 129–30; Rommetveit 2021, 9–10).

It is important to understand that political cynicism and post-truth are the result of specific ideological changes that emerged as an inchoate expression of a political unconscious looking to articulate real grievances and work through historical traumas (Jameson 1983; LaCapra 1998; Noëlle 2008; van der Kolk 2014). When conditions change, the perception and articulation of the situation can change rapidly, confounding assumptions of the persisting inertia of existing political positions. The ruling class may act to secure conditions for their continued rule, but may fail at control in the future, not least because the continuance of their rule requires thwarting the interests of the majority.

It is significant in this context to note that one of the first moves taken to reinforce and extend symmetry—and not coincidentally eliminate residual Marxist explanatory schemes within the influential strong programme of the sociology of scientific knowledge—was to reject the real existence of social interests (Woolgar 1981). Bruno Latour (1988, 1993, 1996) has built a career at dismantling explanatory social science of this kind by his extended symmetry principle that essentially flattens social science knowledge in exactly the way that Fuller's post-truth does. Actors' and analysts' accounts are treated as equally (in)credible and only the successful extension of a claim after agonistic conflicts over the social attribution of interests allows any given social description to cohere or not. Interests are the outcome of a social process, not an explanation for it.

Knowledge is power (of a distributed, networked kind) and social scientists are just those who claim an unwarranted epistemic access to how the social world

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3 To be clear, this does not mean that the Democratic primary was illegally 'rigged,' any more than the general election. But the use of superdelegates and campaign financing to limit or counter certain candidates is a pretty clear legal limitation on genuine democracy. In effect, big campaign donors decide modern primaries well before party conventions or even input from most primary voters, a change in U.S. politics in recent decades (Gautney 2018; Lerera and Epstein 2020; Miller and McLaughlin 2020).

works and need to be drawn down to size—literally, as just another node in the network (Latour 1983). Söderberg (2022, 101–4) traces this approach to the equation of knowledge and power by Michel Foucault and the 'anti-humanist' structuralist Marxism of his teacher, Louis Althusser. Althusser's approach rejected normative ideology critique of the traditional humanist Marxist kind, as part of a general rejection of inherent social identities for the construction of identities by a process of hailing or interpellation at the hands of an impersonal signifying process. The equation of knowledge and power function together with the symmetry principle to provide a crypto-normative perspective that valorizes the underdog.

In Foucault's version, the target was the Communist Party intellectual speaking on behalf of the industrial proletariat, a target of opprobrium shared by Latour. The alternative political perspective endorsed by Foucault was a valorization of the inherent wisdom of the people over intellectuals borrowed from Mao Zedong's cultural revolution. Note that in keeping with my argument, Maoist populism was a front for Mao and the People's Liberation Army's intra-elite struggle with Deng Xiaoping, who would eventually come to power as Mao's health deteriorated. After Mao's death, Deng reversed the focus on the countryside for a new urban elite integrated with global capitalism, with the economy and science managed by Communist Party elites using J. D. Bernal's writings as a guide (Spellman 2020, 110–8; Zhao, Du, and Wu 2020).

Latour transferred this approach to science, though he later sought to dissimulate his post-structuralist heritage, clearly evident in *Laboratory Life*, with its references to Althusser, Barthes, Derrida, Foucault, Greimas, and Lacan (Latour and Woolgar 1986). For the party apparatchik, substitute the scientist, and for the people, substitute all the non-scientist 'laborers' in the laboratory, and, later, people outside the laboratory walls that resisted the extension of its knowledge claims. Fuller was enthusiastic about Latour's approach early on, but increasingly targeted him for a failure of nerve, especially after he 'capitulated' to the authority of the climate scientists in the face of growing climate skepticism.

Fuller takes the crypto-normative populism of Latour and symmetrical STS to its logical conclusion, denying that either natural or social scientists have any 'privilege' over the lay public, with social media allowing them to be heard in a way that the exclusionary power of credentials and peer review did not allow. Fuller compares this transition to the Protestant Reformation, 'democratizing' access to the divine that had been unfairly monopolized by the Catholic Church. Notice the role of those pesky counter-elites in this case, notably Martin Luther and John Calvin.

If we return to consideration of a pre-structuralist Marxian approach, we can see the importance that changing social contradictions have for opening up the possibility for new kinds of politics that include a process of learning

about one's role in the reproduction of society (Marx 2001). The emphasis on historically constrained political *agency*, mediated through consciousness and embedded within relationships with others from different classes and social groups potentially disrupts elite politics. The constraints and limitations of our current political economy, reinforced by ideological movements like neoliberalism, provide limitations on the present that are likely to disappear in the future.

In this sense, Marx and Darwin are the original 'modal' theorists in Fuller's sense, articulating bases for how new kinds can emerge—how the impossible can become possible (Fuller 2020; Rider 2019). Marx articulated a politics oriented toward the future rather than reacting to the present, something that would depend upon an emerging collective political praxis that he did not (always) wish to control and direct, though his followers often did.[4] Darwin outlined a process by which the most dominant organisms could go extinct because they were hyper-adapted to an environment that changed, which is why Marx admired his work. But all this is to say that modal power has little to do with rhetorical deconstructions of claims to truth in the present.

3 The Normative and the Symmetrical

Fuller's early work caught my attention because it combined a fully sociological approach to knowledge with a robust normative perspective that sought to direct knowledge by shaping its institutional form. At that time, sociologists of science and philosophers of science were in competing camps. Sociologists urged a symmetrical approach that refused traditional philosophical judgments about rational theory assessment as misguided. Philosophers of science engaged in normative evaluation only by distinguishing between rational and irrational theory appraisal by the participants in any scientific controversy (see especially the work of Larry Laudan, who Fuller replaced at Virginia Tech's Science and Technology Studies program) (Laudan 1977; Laudan et al. 1986).

Understood in this way, normativity was something distinct from the social conditions facilitating scientific inquiry – appropriate social conditions could provide a setting for autonomous epistemic judgments to be made or interfere with this assessment, roughly corresponding to the difference between free societies

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4 For the dissenting 'autonomist' tradition of Marxism that rejects the authority of a party or vanguard, see James, Dunayevskaya, and Boggs (1947), Cleaver (1979), Vishmidt (2013), and Wright (2002).

and totalitarian ones. The role of society in promoting science was to get out of the way.

By contrast, Fuller looked to make epistemology more like a kind of political philosophy of science in that the issue was to debate publicly the values that would direct the scientific enterprise, designing institutions to shape desired outcomes. The ironic thing is that Fuller won this debate, as it is now taken for granted that values shape science and can legitimately do so in ways that shape the knowledge produced (Kitcher 1985, 2001, 2002; Longino 1990, 2002). The values to be encoded in the social organization of knowledge were never made clear in Fuller's early work, since the idea was to show that democratic debate about the aims of science was missing in the first place. In articulating his early program, two somewhat contradictory values emerged: efficiency and pluralism (Lynch 2003).

When Fuller wrote about the need to subject autonomous scientists to a common plan, the emphasis was on efficient generation of epistemic value for cost, bang for buck. Initially sounding like Marxist efforts to plan science (Bernal 1939; Böhme et al. 1983), this has morphed into Fuller's growing engagement with neoliberal thinking, with a post-truth 'market of ideas' breaking down the artificial monopolies of entrenched experts. Tenure and autonomy can be dismantled and the savings passed on to you, dear taxpayer.

Fuller's emphasis on pluralism grew out of a focus on the rhetorical dimensions of inquiry, mediated by arbitrary disciplinary differences that limited productive engagement across their boundaries and foreclosed consideration of some possibilities altogether (Fuller and Collier 2004). This led to Fuller's attempt to deploy SSK's symmetry principle to rehabilitate intelligent design as a viable scientific contender. Here, an epistemological 'affirmative action' proposal was introduced that sought to maximize pluralism by explicit policy directive, now generalized into endorsement of a post-truth model that breaks with peer-reviewed journals for a social media-based knowledge ecosystem.

What is clear now that was less so three decades ago is that Fuller developed a normative approach not by rejecting SSK's symmetry principle, as I did, but by adapting it, by extending it beyond the boundaries of scientific core sets to society at large. The difficulties with his recent proposals stem in part from this effort to extend the focus on already-existing scientific disputes within more-or-less established, trained scientific communities to society as a whole. Methodological relativism became ontological relativism, an emphasis on the inherent pliability of knowledge itself that could be shaped by any player, trained or not.

Normative judgment could survive this acid bath of extending symmetry only by inverting the tacit normative judgments of the symmetrical sociologists. For Harry Collins, since there are no epistemic reasons that can provide closure in

place of the social reasons uncovered by the sociologists, there are no options left for an outsider to challenge expert consensus when the scientists have finally decided the issue (Collins 2014; Collins and Evans 2007). We can watch and describe what they do, but cannot act in their place.

For Fuller, since there are no epistemic reasons by which one group can constrain a conclusion by another group, there are no options left but to challenge all expert knowledge claims as an infringement on the epistemic rights of everyone outside scientifically trained communities. On a strictly symmetrical approach, either experts are always right or experts are always wrong.

If one starts from a rejection of a symmetrical perspective even while accepting that all knowledge is rooted in social practice, as the prehistory of the field allowed (Nye 2011), then other options are possible. Ellsworth Fuhrman and I made this argument by appealing to the sociology of knowledge worked out in the early writings of Marx and Engels (Lynch and Fuhrman 1991). Similar approaches were developed in the early debates about the strong programme and in discussion of strong objectivity and standpoint theory in feminist epistemology (Chubin and Restivo 1983; Harding 1991; Martin 1993). In short, SSK developed a professional aversion to ideology critique that eliminated explicitly political approaches from the field, the actual function of the symmetry principle for the field's own boundary maintenance (Söderberg 2022).

In opposing this depoliticization of the field, I argued for distinguishing the effects that knowledge claims could have based on the observed power effects of different claims. Ideology critique should be part of the mission of science studies. I did not argue that the perceived negative political implications of scientific claims should lead to scientific self-censorship, as Kitcher (2001) later claimed, for example, with respect to the harmful effects of sociobiological claims in underwriting or extending gender or racial oppression, for instance.[5] Rather, the entire socio-material network could be examined to determine how epistemic claims are granted political effects, including the 'translation' of these claims in questionable ways that open up further sites of intervention (Lynch 1994). Consider this an early attempt to get the academic left to avoid cancel culture while engaging in robust, but fallible, ideology critique.

Fuller's (1988) initial call for a focus on both the production and distribution of knowledge supported my approach. The afterlife of sociobiological claims within

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5 Division within the philosophy of science over the epistemological-cum-political acceptability of sociobiology and racialized IQ research can be traced back to the efforts by Hilary Putnam to have the American Philosophical Association condemn Arthur Jensen's IQ research, an approach rejected by Imre Lakatos, who convinced his student, Peter Urbach, to defend the research as a progressive research program (Lakatos and Feyerabend 1999, 348–49; Lynch 2021, 97).

the racism of the alt-right is a clear case in point, a key player in the contemporary rise to prominence of post-truth. Contemporary biological research on human behavior is not free from ideology, but the alt-right is not taking their marching orders directly from the academics whose work initiated lines of inquiry they scavenge from opportunistically. Scientists may have responsibility to address the deleterious effects of their work but we should be under no illusion that they can control it directly. It is an open question how post-truth claims, once they have spread, can be controlled or countered with more accurate information.

4 Who Designed the New Rules of the Game?

Does the censorship of false claims on social media actually work to stop the spread of disinformation, as measured by vaccination and infection rates, for example (Leonhardt 2021)? I have my doubts, not least since the censoring actions would tend to reinforce the conspiracy theory that elites are conspiring to keep the truth from emerging for nefarious reasons (Heath 2021, 303). Moreover, the need to suppress the more extreme forms of disinformation can also impact the public discussion of more plausible alternative theories and democratic debate about the best policies to address the crisis (Flam 2022).

But that is all the more reason to pay attention to the mechanisms behind the 'translation' process whereby a particular dissenting scientist or doctor comes to be seen as exposing perfidious elites within an all-encompassing bubble chamber. The answer is not going to lie in whether or not social media decides to censor certain claims at the end of the pipe, but by understanding and changing the basic architecture constructing and regulating social media itself. Privately owned social media with proprietary algorithms shaping the ecology of social media that Fuller valorizes endangers democracy.

That is why I drew a comparison with the rise of mass media in the age of radio and TV as a point of reference, and the social theorists who worked to understand its connections to mass democracy and its pathologies. The key point is that the 'rules of the game' that Fuller believes should be up for dispute are already decided. A few massive oligopolistic media companies have written the rules into the computer code structuring their platforms, the details of which are protected as intellectual property. Who is *behind* the screens narrowing the possibilities for political expression and shaping the public's dopaminergic system while we are all entranced by the rhetorical pyrotechnics online (Haidt and Rose-Stockwell 2019)?

Notice also that a key issue here is not the existence of false beliefs but imputing dishonesty and bias to (better established) beliefs as a means to buttress the

false belief. The claim is not just that the CDC or the WHO is wrong about the virus because they happened to adopt the wrong methodology or interpretation of an open scientific controversy, but because they have a larger agenda to undermine the United States. They are not just wrong but malicious, usually in reference to a proto-fascist conspiracy theory whereby some members of the public, the enemy within, wish to see their nation destroyed and are allied with the enemies without.

In this sense, Fuller's reduction of all expertise to monopolies ('academic rentiership') is a meta-version of the same problem. His account is not connected directly to fantasies of nationhood, but it does scapegoat experts as enemies of democracy. So the implication is that in his role as director of the National Institute of Allergy and Infectious Diseases (NIAID), Dr Anthony Fauci is not just presenting an incomplete or partially false view of the epidemic—about which one could have a debate—but is squatting in the public square. He is falsely claiming expertise to undermine the democratic right to reject his view. The only function of his training and degrees is to have something to point to about why he should be listened to and not the uncredentialed. Knowledge is nothing more than power, illegitimate power at that (Söderberg 2022).

Almost every conspiracy theory in the post-truth regime has this reflexive, self-grounding character. It harkens back to the original 'growth of suspicion' associated with early discussions of the sociology of knowledge, connected to the debunking character of fascist (or Stalinist or the like) claims. This criticism was based on the assumption that their opponents allegedly were interlopers conspiring to undermine the nation at issue.

5 Material Practice in Science and Politics

A key aspect of STS research that drops out of Fuller's approach altogether is the focus on material practice. The truth claims that are produced within any scientific field come out of specific socio-material practices that simultaneously enable and constrain the kinds of claims that are possible within that framework. This is why different material practices incorporating specific instruments and equipment within laboratory practice can build up quite incommensurable approaches and require their own kinds of practices of coordination and mediation to reconcile. The 'practice turn' within STS replaced abstract treatment of beliefs or forms of life with close attention to the possibilities for change opened up by specific laboratory practices and their extension beyond laboratory walls (Soler et al. 2014).

Randall Collins drew the line between the old and new approaches by distinguishing between idealist constructivism that focused on "the imposition of ideas

upon the world" and materialist constructivism that focused on "the dominance of physical practices, embodied in material equipment" (Collins 1998, 537–8). The important thing to notice about this distinction is that for the former, it is enough to have different ideas to successfully impose them upon the world. By contrast, successful constructions of the latter type require that laboratory equipment or other material infrastructure get built up together over time such that it is difficult to change it at will (Hacking 1992).

It is not enough for scientists to be bilingual, moving back and forth between incommensurable perspectives, nor can critics succeed in challenging entrenched perspectives without essentially developing a laboratory of one's own. While much STS research has focused on the occasional contributions of 'lay expertise' to shifting the debate within science, it has at the same time shown the limitations of this kind of activism. Activists typically rely upon already existing minority positions within science and often run up against problems enacting their preferred alternative in practice.

In the case of AIDS activists, the ethical and epistemological critique of 'fastidious' protocols for testing AIDS drugs did lead to renewed debate and altered protocols, but AIDS activists themselves moved away from this position when their 'pragmatic' protocols failed to uncover effective AIDS treatments in a timely manner (Epstein 1996). Low carb advocate Gary Taubes had to raise money for a research institute to direct research towards experimental testing of low-carb and low-fat diets, an endeavor that was only partially successful. Patient activists could challenge standard treatments of adrenal and thyroid disease based on shared modifications to their treatment, but could only go so far without directed research by scientists who could take up their ideas as hypotheses capable of challenging the significance of standard diagnostic biomarkers (Brown et al. 2006; Lynch 2021, chs. 4–5).

The material embeddedness of modern science puts distinct limits on the democratization of science by fiat. Nonetheless, there is no reason to believe that the current social organization of inquiry reflects a hidden hand guaranteeing optimal outcomes. Determining how scientific disciplines could be mobilized to effectively consider questions like these is an important task that STS can help facilitate. As Feyerabend put it, what is needed are "*scientific* institutions which are capable of dealing with polarizations that may arise in the scientific community and which prevent these polarizations to become 'incompatible modes of community life'" (Hoyningen-Huene 1995, 375, emphasis in original; Lynch 2021, 161).

Unknown to many of SSK practitioners, the focus on 'practice' recapitulated the early history of the sociology of knowledge associated with Marx and the Young Hegelians. August von Cieszkowski coined the term "praxis" in rejecting

Hegel's claim to subordinate history to his dialectical philosophy, instead giving primacy to practical changes in social organization driving historical change. Ludwig Feuerbach showed that Hegel's own philosophy reflected social reality in distorted form, making it an ideology.

The "transformative method" of the Young Hegelians saw abstract, philosophical accounts as ideologies that distorted and disguised the actual bases for historical change in concrete practice. Marx extended this approach beyond religion and philosophy to include science itself emerging out of "sensuous practice" (Lynch 2021, 165–71; Lynch and Fuhrman 1991). It is this sensuous practice connecting a scientist's engagement with manipulated material reality in socially organized settings within science that animates the focus on practice and materialist semiotics in STS.

In contrast to Fuller's focus on Marx's 'atomism', Marx incorporated a (historical) materialist approach in *The German Ideology* by finally breaking with Hegel's focus on anticipating human history philosophically, instead emphasizing the role of *activity* among workers transforming their received material and political context.[6] His dissertation foreshadowed this focus on transformative activity by favoring Epicurus' declination of atoms from a straight line over Democritus' passive atomism (Browning 2000, 131–3; Livergood 1967; Mins 1948). Self-moved matter rather than passive matter moved by impersonal, outside forces proved a better model for human action.

Fuller's own view of the democratic state reflects the kind of abstract view of the state as the neutral arbiter of different social interests that Marx criticized in Hegel. Instead, private interests took control of government to exclude those with less power, as he observed when forest owners excluded peasants from their traditional access to the woods, thereby going beyond mere petty theft "to purloin the state itself" (Mah 1987, 184–5).

While Marx and Engels' *Communist Manifesto* seemed to lay out a teleological account of a necessary future, when it failed to materialize and the Communist League was split between different factions, Marx and Engels adjusted their account to reflect these realities and attacked those who sought to subordinate the working class movement to their opportunistic and delusional leadership, making Marx and Engels the 'first revisionists' (Hollander 2011, 21–22; Marx and Engels 1971).

In short, we need to pay attention to more than visible political expression and consider the transformation of political possibility by those excluded from

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6 Marx's initial account of historical materialism bears little relationship to Popper's historicism or Fuller's 'historical realism,' and is much closer to the kind of social constructivism growing out of laboratory studies in STS (Lynch 2021, ch. 5).

representation in the state or its ideological organs, but engaged in the ongoing material and social reproduction of life. Political mobilization through the Internet will play a role in that reproduction but the emergence of post-truth discourse on the web is neither spontaneous nor unmediated by technical forms put in place by powerful actors. And practice continues at multiple levels of production, exchange, and reproduction.

6 Political Expression and Social Media

A significant difference between the kind of politics available to the working class at the time Marx wrote and that available now has to do with the changing context of the central technologies at play and the way they orient – or disorient – now. Marxism and the labor movement more generally came to power during a period in which workers were brought into association together physically on the factory floor or at the site of mineral extraction. Mining and Fordist manufacture concentrated workers together, thereby facilitating the development of their own political mobilization.

The rising organic composition of capital diminished the labor requirements for the classic, industrial proletariat, contributing to a shift from a politics centered on production to one centered on consumption. The ultimate result is the emergence of an 'expressive' politics, oriented to symbolic protests and identity politics, facilitated by new communications technologies. Waged labor continued, and indeed rising wages were reversed for a renewed iron law of economic polarization. However, political expression takes place online and remains quarantined and deadlocked, while the real work of political control takes place through offline, intertwined corporate and government structures (Ghosh 2016, 131–2).

If one wishes to preserve or rehabilitate democracy of a robust sort, popular politics would need to engage power where it operates and not remain confined to digital Bantustans designed and owned by giant, oligopolistic corporations. Fuller's neoliberal approach looks to promote a proliferation of viewpoints, with politics reduced to an aggregation of individual preferences. Instead, we should be asking what kinds of democratic practices would have promise to aggregate real grievances into altered political forms. Fuller's alternative is a kind of 'end of history' view in denying that there are any fundamental political differences to unravel, even while allowing unfettered rhetorical expression online.[7]

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7 Ironically, Fuller and Latour share this end-of-history mentality despite their long-running hostility to each other's projects (Berreby 1994; Söderberg 2022, 96).

To see this, consider Fuller's views about the underlying political philosophies that are considered "serious" contenders, unlike "nostalgic," socialist, or environmental political philosophies whose time has passed. Fuller treats social democracy and neoliberalism as exhausting the political space that is possible. Indeed, in his view they actually reduce to the same point of view, which is a particularly extreme version of the doctrine that there is no alternative (TINA) (Fuller 2018; Söderberg 2018). There remains a real content to politics, not always evident by focus on chatter either in the Beltway, political assemblies, or on the Internet.

What has changed since the end of the Cold War is the willingness of elites associated with either side of the political spectrum to represent these issues, with both major parties in the U.S. pursuing neoliberal policies and constructing a distinctive neoliberal state (Blyth 2002, 161–72; Jones 2012, ch. 6; Mudge 2008, 718–22). Liberalized international trade and outsourced production, not technology-driven productivity gains, led to a precipitous decline in U.S. manufacturing after 2000, a key cause for the growing disaffection with this bipartisan consensus that led to the political rise of both Trump and Sanders in 2016 (Houseman 2018).[8] In the election of Trump in 2016, an analysis of his margin of victory in key districts in the Midwest showed that economically depressed white voters switched from supporting Obama in 2012 to Trump in 2016, while increased turnout in 2020 made the difference for Biden (Davis 2020).

The pandemic has only exacerbated these issues, particularly in the U.S., with its deficit of socialistic rescue policies and surfeit of desperate people suffering from underemployment, opioid dependence, and lack of health care (Lynch 2020; San Juan 2020). Moreover, the issues that animate the new authoritarian right include issues arguably caused by U.S. neoliberal economic policies and neoconservative military intervention, contributing to immigration crises, displacement of agricultural laborers, and stripping of social welfare policies in the Global South. Capitalism is not doing too well under any honest assessment of its impact on people's lives.

7 Opening Up Suppressed Political Possibilities

Rather than counting on a populism that acts to restrict political possibility, how can we support an approach to scientific expertise that opens up political possibilities? The key thing to notice here is that post-truth has been driven in

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8 Houseman (2018, 29) also notes that the decline in manufacturing was accompanied by a decline in R&D, with negative consequences for innovation. See also Vinsel and Russell (2020).

large measure by collaborating scientists—mostly physicists—looking to challenge expert consensus outside their fields in a way that is allied with corporate opposition to regulation (Oreskes 2021). Behind every bit of populist post-truth, you can find a counter-expert looking to disrupt scientific consensus as part of an intra-elite political struggle for control.

Heath (2021, 287) argues that post-truth is a situation where strategic gaming of democratic norms degrades the functioning of democracy, requiring construction of a "post-deliberative democracy as open public deliberation on matters of general concern has become impossible." Arguably, the same applies to neoliberal or post-truth science, as scientist-trolls seek to disrupt the functioning of Mertonian norms of science for strategic ends, power over knowledge.

The true theorists of this post-truth moment are neoliberal economists, who have altered the practical ethos of science through the imposition of intellectual property law onto the processes and products of science, often by becoming university presidents (Mirowski 2011). Fuller's post-truth philosophy seems designed to bring the postmodernist humanities and social science scholars along for the ride, but the real theorists here are the economists.

STS can offer a different approach by considering alternatives to ascendent neoliberal or 'post-academic' science (Lynch 2021, ch. 7; Ziman 2000). Moreover, it can extend the consideration of dissenting positions within science, examining the extent to which potentially progressive research programs are thwarted by the reigning political and funding structures within science. The case I considered in my initial critique of Fuller's post-truth view is the emergence of *Modern Monetary Theory* (MMT) as an alternative to orthodox macroeconomics.

This is a case where the possibility exists to open up alternatives and actual political choice otherwise shut down by an expert consensus, in this case, that of neoliberal economics and politics. MMT proponent Stephanie Kelton served as an advisor to both Bernie Sanders' Presidential campaigns, advocating significant infrastructure spending. MMT challenges the analogy between the debt of a household, which must be limited to the ability to repay, and that of a sovereign state that issues its own currency.

For MMT advocates, government debt is a net asset for the economy, creating income for non-governmental entities, limited only by the productive capacities of the economy as a whole (Connors and Mitchell 2017). MMT itself is not a policy choice, but does suggest that most austerity measures imposed under the threat of economic necessity are not accurate. Instead, the public would be free to set policy priorities, checked only by a certain kind of planning, involving expert (MMT) analysis of whether proposals exceed the real productive capacities of the economy, which would lead to inflation (Malter 2019).

The approach grows out of post-Keynesian economics, but with historical support for the role of early states in establishing demand for fiat currency through taxation from the heterodox Marxist Michael Hudson (2018, 2020) and the anarchist Graeber (2011). The experience of twentieth-century wartime economic planning, which amounted to running a national economy like a firm, was carried over to peacetime economies during the Cold War. In this sense, planning is common to liberal, communist, and fascist governments, borrowed from new organizational forms of private capital, though in ways that varied quite dramatically (McNeill 1982, chs. 9–10).[9]

Understood in this context, there is little difference in kind between Otto Neurath's socialist planning and Karl Popper's piecemeal social engineering, except perhaps a rhetorical discouragement of any larger ambitions in the first place by Popper (Reisch 1994, 172–5).[10] Popper articulated an early version of TINA (there is no alternative), which aligned him with Hayek and Polanyi. If we are to follow Feyerabend as an inspiration, above all else we should be looking to challenge entrenched ideas that tie our hand and limit our choices. It is here that greater effective pluralism may be possible, not by rhetorical gamesmanship online, but by looking for potentially progressive research programs that may suggest unexpected possibilities for action, but that have been held back by hegemonic disciplines and political structures.

Moreover, a kind of 'unity of science' is possible in practice when distinct and disunified fields are brought together consciously to cooperate in shaping concrete action for modern, complex, practical problems with dimensions requiring input from different fields (Cartwright et al. 1996). Post-truth during the pandemic included a lot of accusations hurled at opposing views based upon maximizing conflicting values or preferred outcomes. Rather than maintaining a rhetorical conflict between policies favoring quarantine to control a pandemic and policies favoring opening up to preserve the economy, a unified approach would require that both epidemiological and economic considerations, among others, be incorporated into modeling and planning, including consideration of other options and policies that could attenuate the all-or-nothing conflict between different values.

Some disciplines seem tailor-made to block this kind of cooperation and interchange, however, as well as to monitor and control what democracy is allowed to

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9 MMT's focus on government fiat money must be supplemented by the (interrelated) increased role of bank money and the financial system since the eighteenth century (Bradford 2012; Brewer 1989).

10 In this sense, it is Popper who follows a precautionary approach, in contrast to Neurath's proactionary one.

choose to do, under the guise of a narrow, disciplinary definition of necessity. This is the kind of ideology or 'metaphysics' that Neurath targeted. Indeed, it is precisely neoliberal economics that Fuller has increasingly aligned himself with that plays this role in the academy and in politics, which is not surprising because it is a purpose-built approach designed to undermine democratic economic planning (Mirowski and Plehwe 2015).

As such, it functions as an ideology by *restricting* any semblance of the free flow of ideas and should not be treated 'symmetrically' as just another viewpoint in the marketplace of ideas (Söderberg 2022). While treating their own knowledge claims dogmatically, and having whittled down Keynesian and non-orthodox economic research programs in the field, neoliberals allow post-truth for everyone else. Their conception of knowledge, of what a free market of ideas consists of, dismantles recognition of the expertise of other fields based upon their own preferred science policy: experts are monopolies, non-experts are virtuous, and truth is up to the market of ideas (Mirowski 2014, ch. 6; Oreskes 2021). As such, it is economists who have articulated the abstract epistemology of post-truth that underwrites the actions of the 'counter-expert' scientists promoting agnotology to derail corporate regulation. Again, the much despised word 'ideology' fits, not a flat symmetry that pays no attention to the differential role that power plays in constituting some claims to knowledge.

Finally, behind all this, a neoliberal science funding system and organizational demands of Big Science have altered practices that better approximated to Mertonian norms and inhibited the development of minority positions in the first place. Fuller's solution to the latter point is ingenious but ultimately doomed: let anyone develop their own minority positions from scratch and be given full bona fides to put them on a par rhetorically with any other position. What's actually needed is the development of real research programs that functionally work like science that develop interests and approaches that are currently neglected. In other words, the 'people' need real science addressed to their interests, to overcome the frustration of science by the existing system of political economy, not just rhetorical broadsides allegedly on their behalf. Which positions will expand political choice and opportunity and which ones will reinforce a false necessity with an illusion of liberty of thought?

8 Conclusion

The relevance of Darwin for this discussion has to do with whether or not democracy or contemporary societies will survive and thrive, particularly in light of significant potential threats such as climate change, pollution, depletion of

resources, future pandemics, nuclear war, or conflict between or within societies. All of these will test the ability of our institutions to continue to function. I am talking about cultural evolution, not biological evolution. We are not going to evolve different biological characteristics any time soon that will make post-truth less of a problem. An understanding that our evolved biological characteristics include certain cognitive limitations may contribute to an understanding about how post-truth latches on to current conditions (Fuller 1989). But it is those current conditions and the challenges they pose that set the environment for whether different cultural solutions will survive and propagate, either vertically by continuing on within a given society, or horizontally by societies imitating successful solutions from other societies (Lynch 2017).

This is where the argument of Oreskes and Conway (2014) about a potential Chinese solution to climate change becomes relevant. The issue is not a question of *endorsing* more authoritarian solutions than we would prefer in democratic societies. The issue is which institutions and cultural forms will be more successful in adapting to a changing landscape. So Oreskes and Conway should be read as warning that democratic societies need to find ways to adjust their behavior to successfully compete in solving new problems for which the authoritarian solution has an advantage. After all, this is how roughly egalitarian societies gave way to class-based and authoritarian societies in the first place (Lynch 2019).

If we prefer democratic solutions, then we must surely innovate new ways of checking the power of elites, counter-elites, and destructive populist movements. Post-truth is perhaps the main obstacle to successful cultural adaptations to complex problems such as these. Thankfully, cultural evolution allows intentional cultural change along with undirected 'natural selection' and cultural drift to generate variability among cultural forms (Henrich and Henrich 2007; Wilson et al. 2014). Ultimately, however, reality will do the selecting.

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