

The Problem of Demarcation Isn't Going Away: On the Legitimation of the Social Sciences in Light of Popper, Cruickshank, and Reed

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The period between the two World Wars unsettled intellectuals as if they suffered an intellectual trauma. Their belief in reason and rationality, human dignity and tolerance, was shattered; instead, they found themselves in a world permeated by fear and irrationality, where romantic nostalgia vanished, and where Soviet communism deteriorated into totalitarian Statism unseen before. The human spirit—as envisioned by the Enlightenment Movement of the 18th century—was at a loss if not completely lost to the vagaries of an inhumane, cruel, and ugly political realities. European nation-states displayed an increasing thirst for hero-warship and charismatic leaders quenched by Benito Mussolini in Italy, Adolf Hitler in Germany, and Generalissimo Franco in Spain.

On the Demarcation Problem

As World War I had left millions dead, and as Stalin's regime was killing systematically a few more millions of its own countrymen with an ideological zeal unimagined during the Bolshevik Revolution, any faith in a civilized Utopia must have diminished out of existence. Who could be trusted anymore? Whose ideals could warrant adherence? What ideology will not spin out of control? These political realities turned the intellectual elites away from the idle promises of the social sciences—political economics, psychology, and sociology—with nowhere to turn. With this in mind, the natural sciences offered a somewhat better appeal: their study was undertaken by the smartest, their language was truly universal, and their findings were beyond the reach of corrupt politicians.

It seems that the generation of thinkers and intellectuals that came of age during the first quarter of the 20th century deliberately sought the solace of science, at once full of mysteries and new horizons to explore, and a safe haven for Truth and Meaning that this or that ideological influence couldn't sway. Science offered Reason and Rationality the refuge they needed and deserved from manipulation; it was the only hope for overcoming the loss of humanity and its political environments, and perhaps with its aid stability and peace could be restored to the European continent. As one disappointment followed another, the likes of the Viennese Karl Popper became philosophers of science rather than cultural critics or psychotherapists.

If Popper's insistence on resolving the demarcation problem (as originally set in the philosophical lexicon by David Hume) is historically traced to Europe's devastations, it may come as less of a surprise. Put differently, just as Popper's *The Open Society and Its Enemies* was explicitly a contribution to fighting the Fascism of World War II (as Popper himself claimed), then it stands to reason that the obsession with the Problem of Demarcation was a response to the European trauma of the first quarter of the 20th century.¹ Here was a project that, if completed with clear-cut criteria and a "how-to" list, could provide the solid foundation with which to fight irrationalism. Claims of scientific legitimacy offered by Soviet ideologues under the banner of Communism, for example,

¹ Karl Popper [1944] 1966.

could be shown once and for all to be nothing more than ideological beliefs masquerading as science. Communism might appeal to the weak-minded (the bombastic, irrational, and delusional), but could be rejected with ease by rational citizens around Europe in the name of science.

Popper's rescue mission made sense: if one could distinguish science from non-science, one could distinguish between reason and unreason. And if one could distinguish between reason and unreason, then one was immune to being fooled by demagogues. On this reading, the issue at hand wasn't primarily the rescue of reality from the nonsense of the romantics, but the rescue of the soul of humanity from an irrational abyss. When deceptions were exposed to be pseudo-scientific, there was something to ground the critique: Science and Reason, Common-Sense, and Rationality.

The demarcation problem was at once epistemological, practical, and ethical. The epistemological concerns are those covered by most commentators, so we can reframe them crudely: knowledge which is certain—science—can only be ascertained through the rigors of a methodology that explains phenomena (looking retrospectively at the data) and predicts what will happen in the future (under conditions of causal relations). As long as claims are formulated in a way that lends them to testing, as long as these tests are repeatable, and as long as they are refuted (rather than confirmed), they can be deemed worthy of the designation of science. Accuracy of measurement, careful setting of laboratory conditions, and an ethos of personal integrity within the scientific community, these are all limitations of science, but they can also safeguard against misleading or mistaken conclusions.

Practically speaking, once scientific claims are demarcated from all others, one can more readily rely on them for a variety of purposes, from building bridges to setting off atomic bombs. The history of technoscience—the conflation of science and technology—especially since the 20th century, unfolds as a series of innovations and developments whose reliance on the strictures of science is taken for granted. We no longer go to astrologers and shamans to diagnose a disease or ask for a prognosis, but instead ask for scientific data to inform our outlook and therapeutic protocols. Magic tricks are now considered entertainment rather than powerful tools in the hands of figures in positions of authority. And then the allure of Fascism may be dismissed as that of magic.

Ethically speaking, the current dependence on science carries us not only towards more credible predictions and a sound basis for daily activities, but also certain emancipatory promise we lost a century ago. The Enlightenment Ideals of the 18th century have found a new venue through which to claim the faith we had in them. For Popper's cohorts, science could offer what the Nation-State failed to offer: freedom and equality, knowledge and certainty. It could also offer a rational policy to accomplish such ideals regardless of the realities surrounding Europe. In short, science was the new Utopia, the holy-grail we can all accept and worship. But that utopia, one may argue, would have to be rescued as well—the rescue mission being rescued itself—from the kind of Marxist disillusionments of an earlier age: "It is impossible to return to what Marx once called the 'roasted pigeons of absolute science,' that is, to some sort of utopian or transcendental

thinking.”² Indeed! The new utopia is rather a utopia-surrogate; it would be Popperian rather than the science of the 17th-century Gentlemen of Science; this revised scientific project offered demarcation criteria only as a first step towards a more nuanced method of conjectures and refutations that culminates at most with putative truths.³ The Platonic utopia or that of Aquinas, or the utopian thinking of the Vienna School and the Anglo-American Analytic School, can no longer hold in a postmodern world of turmoil. Modernity promised rationality and in its stead it delivered World Wars, nuclear weapons and gas chambers. The very notion of Utopia—applied to the polis or science—had to be reconfigured. The classical rationalism behind the classical utopia had to give way to limited rationalism in order to save the world from the irrationalism that led to two World Wars.

Thus, epistemological concerns became moral ones as well. The measure of doing good science, so to speak, has to be peaceful geopolitics. The universal appeal of science should transcend the limits of this or that religion, this or that culture. This transcendence isn't the old Kantian cosmopolitanism whose promise sounded hollow in the aftermath of two World Wars, but one with a renewed faith in understanding the universal language of Nature. And this nature by now was the one Spinoza and Einstein could share: *dea natura* as an Ordered Universe, the one that is not left to chance and chaos. The ordered universe and its laws could hereby be demarcated from the unordered human nature, its irrational politics, and the pain and suffering they bring about. If we think along these lines, Popper's obsession with the demarcation of science makes sense; it almost is a logical outcome of a series of intellectual and personal events that induced him and his fellow-travelers to hold onto something solid and real, namely, science.

Before turning to the next section where we plan to enumerate some of Popper's formulations of the problem and its resolutions, a quick note to carry us into the 21st century. The classical debate of Realism vs. Anti-Realism or between the real and unreal has been transformed into the debate between modernism and postmodernism. We should hasten to warn the reader that our interest in Popper's demarcation is neither historical nor epistemological, but instead a pragmatic one. Only if the Problem of Demarcation can contribute to Problem Solving, it's worth revisiting. And from a postmodern (non-relativistic) position, we believe that it is. For example, if science is demarcated from non-science so as to privilege its statements and the community of its practitioners, then instead of solving problems we are faced with an added set of problems (of policing and regulating a sanctioned part of society that claims, for example, to not be regulated at all because it promises to self-police and the rights of non-interference). Put differently, if our appreciation of the scientific enterprise (from Popper's perspective) lends itself to greater scrutiny of science and its formulations, we are better off than ignoring it; if, on the other hand, it makes claims of superiority and privileged status so as to shield it from public scrutiny, we are worse off.

We believe that the problem of demarcation sheds postmodern light on the sciences, perhaps not quite in the way originally intended by Popper: it highlights the slippery

² Andrew Feenberg 2014, 171.

³ Steve Shapin 1994.

slope wherein the natural sciences are set against the social sciences, and reminds us that all areas of study are beholden to implicit metaphysical commitments (about an ordered universe, for example, or a certain view of human nature). Popper's exposition was radical and informative, but for us it was neither strong nor radical enough: it could have demanded more from all practitioners when it comes to the modesty of their pronouncements.

Popper's Agenda and Its Limitations

Popper's concern with the methodology of science and the problem he is trying to solve begins with the myth of induction. Simply put, this means an inductive process that circumvents to a large degree falsifiability by decreasing prediction variables and/or outcomes that are entirely dependent on *apriorism* or fall victim to infinite regress because of "probability logic."⁴ Deductive reasoning, on the other hand, reduces a hypothesis to its closest working approximation if and only if certainty is understood in terms of probability and approximation. So, unpretentiously, scientific knowledge predicts what *should* happen under certain conditions while un-scientific knowledge predicts what *might* happen without specifying any conditions.⁵

Popper's central goal is to further the growth of knowledge: "For the most important way in which common-sense knowledge grows is, precisely, by turning into scientific knowledge."⁶ This is central to the discussion about demarcation; Popper is not being exclusionary in his ceaseless quest for epistemological lines drawn in the sand; rather his attitude vis-à-vis demarcation endeavors to facilitate the production/process of knowledge creation. To this end the question of whether or not a theory is scientific is of utmost importance, and demarcation is the process by which to ensure its success.

Popper is quick to dismiss all the scientific-constructivists as merely "engaged in the construction of intricate working models in miniature—of vast systems of minute gadgets."⁷ Conversely, "those who do not pledge themselves in advance to any philosophical method, and who make use, in epistemology, of the analysis of scientific problems, theories, and procedures, and, most important, of scientific discussions [will discover] that scientific knowledge can be more easily studied than common-sense knowledge. For it is common-sense knowledge writ large."⁸ While it may seem self-defeating to Popper's repudiation of scientific-constructivism that he demands certain criteria as necessary for a theory to be scientific, it is not; both are sentiments which reflect a desire for accuracy and falsifiability. By not committing to any model, *language* or *-ism a priori*, Popper is free to engage problem-solving and criticism from a neutral perspective bereft of vested interests and the shackles of *foundational* assumptions. And all of this, as we saw, in the name of extending common-sense to the level of scientific credibility. This is in stark contrast to Thomas Kuhn who believed in sticking with

⁴ Karl Popper 1959, 27-30.

⁵ Popper 1959, 315-17.

⁶ Popper 1959, 19.

⁷ Popper 1959, 20.

⁸ Popper 1959, 22.

foundational or acceptable paradigms until they become functionally inoperative.⁹ Coarsely put, Popper was attempting to unshackle science from “superstar” theories and their authors; instead, Popper places his faith in criteria available to all.

Popper is not making any claims about the usefulness or value of non-science vs. science.¹⁰ Neither is he making any claims to the truthfulness of non-scientific claims. At heart, Popper is only interested in whether or not a statement can be falsified. From here, the interpretations of the severity of Popper’s further stipulations inform his critics and proponents. We would readily admit that as time passes and our understanding of the sciences (natural as well as social) progresses within an ever changing cultural environment, no definitive interpretation of his own criteria is possible. Instead, the consequences of these criteria remain open to further exploration (as we are doing here and now).

Empiricism as such is not enough; most *basic statements* are based on *perpetual experience* (observations), and are thus empirical but not scientific.¹¹ Inferring that the sun will rise tomorrow because it has done so all the previous days is not a scientific hypothesis. The fact that this hypothesis has to date been proven true without exception has no bearing on its scientific value. On the contrary, in Popper’s eyes such a hypothesis is rendered less scientific precisely because of its high degree of probability; the vaguer the hypothesis, the easier it is confirmed which is anathema to Popper’s method.¹² The hypothesis also fails to stipulate any outcomes that would falsify the hypothesis: “certain possible results of observation” that are “incompatible” with the hypothesis even though there might be more pressing issues at hand if the sun should fail to rise.¹³ Einstein’s Theory of Relativity is Popper’s case study precisely because it is so beholden to these two principles; an outlandish theory predicated on clearly defined and specific prediction with clearly defined criterion for falsification. Without attempting to put words in Popper’s mouth, we find it safe to assume that he did not mean for all scientific theories to be cut of the same Einsteinian cloth.

The stressor here is the advancement of the scientific process. Popper is not concerned with the exclusion of non-scientific disciplines; (he speaks in defense of non-scientific kinds of knowledge),¹⁴ but rather the acceptance and inclusion of “bold ideas, unjustified anticipations, and speculative thought” because they can reach past our limited senses in the human quest of “interpreting nature.”¹⁵ Popper opposes confirmation and *ad-hoc* hypothetical additions not because he does not see the value in them, but because such addendums are unscientific in temperament; any attempt to “escape refutation” is antithetical to the entire point of any “bold” theory because it protects rather than exposes hypotheses to the greatest potential scrutiny. Popper takes care to give *ad-hocness* the benefit of the doubt though: “Changes in these definitions are permissible if useful; but

⁹ Kuhn [1962] 1970.

¹⁰ Popper 1963, 341-42.

¹¹ Popper 1959, 43.

¹² Popper 1963, 48-49.

¹³ Popper 1963, 47.

¹⁴ Popper 1963, 341-42.

¹⁵ Popper 1959, 280.

they must be regarded as modifications of the system, which thereafter has to be re-examined as if it were new.”¹⁶ Popper does not care how a hypothesis came to be, provided it is *scientific* in the sense of being testable. Neither is he separating the “good from the bad,” as he is laying down a few ground rules and inviting everyone to “take part in the scientific game.”¹⁷ This, of course, is perfectly in line with a man who regarded himself an “Enlightenment thinker” who “seeks not to convince but to arouse—to challenge others to form free opinions.”¹⁸

For Popper, the intention was not to set the bar so high so as to dismiss other forms of knowledge, but rather pursue a solution to the “key to most of the fundamental problems in the philosophy of science.”¹⁹ His concerns regard the sciences, which despite what claims may be made about his affection for science, carry no ill will and, as we pointed out at the outset of this paper, attempt to ameliorate the disasters of early 20th century Europe. As such, in his own spirit of criticism for the sake of improvement, there is no contradiction in suggesting that his own claim is “empirical-scientific if and only if it is falsifiable,” and to Popper’s credit, he does concede that his statement “only has to do with the logical structure of sentences and classes of sentences” rather than their content.²⁰ It follows, then, that despite some critics claiming that Popper himself falls trap to dogmatism, he himself would agree that for the sake of progress, criticisms of his own maxims are always welcome. In this case, progress may not be strictly within the bounds of scientific discourse, but rather of the philosophical discourse on science.

Which is ultimately what is at stake for Popper: improvement. We have but to apply this sentiment to his writings to reach a considerably more radical and potentially effective thesis which increases the burden, metaphysically as well as empirically, on both the social and natural sciences. This is the risk and gain for those discussing which model to apply and how best to merge it with *liberal democracy*. Society is increasingly beholden to all the sciences; healthcare, for instance, is an exercise in how the social sciences permeate a domain of knowledge claims which is seemingly natural. The central point is not to get so fixated on the demarcation problem of science, but instead focus more of the discussion on the *how* and *why* we apply “science” in certain domains of public discourse.

The practical implications of demarcation are so ingrained that we have become habituated to them: astrologers and psychics are not permitted as expert witnesses in courtrooms exactly because, on some level at least, society is aware of the importance of demarcations. Exactly because it is evident that the problem of demarcation is such a pertinent part of society, it follows that the stakes are raised in regards to the future of society: what knowledge claims do we pass on, what do we propose to ingrain in generations yet unborn? Should Intelligent Design be taught in classrooms? Should creationist Ken Ham’s Ark Encounter receive public subsidies? These are questions that

¹⁶ Popper 1959, 83.

¹⁷ Popper 1959, 280.

¹⁸ Popper 1999, 85.

¹⁹ Popper 1963, 54.

²⁰ Popper 1999, 82.

have measurable impacts, and reflect how members of a society choose to think ontologically and epistemologically about cosmology.²¹ And it is perhaps when Popper's commentary touches on these metaphysical moorings that he invokes most antagonism: he is concerned with the philosophy of how people *think* and as such he does not make any concrete scientific claims. As mentioned, Popper is not claiming the universality of the usefulness of science and hence his seeming zealotry is an illusion. What is at stake both for Popper and for society, metaphysically and practically, is *how* and *why* people think about the world around them epistemologically and scientifically. He is well aware that *what* people think about is subject to change; hence his commitment to falsifiability.

On the broadest of scales, the need for falsifiability, at least in theory, is a necessity for intellectual and practical/technical progress; reasonable consciousness accepts only concepts that have not been falsified—human confidence in gravity comes from the predictability of it, not the theory explaining it. Attaching this criterion to all of the sciences only strengthens their claim of legitimacy. Granted, the sciences are unique with their own intricacies, but in the spirit of the proposed thesis, the purpose here is not to find the perfect model which is universally operational—as in Kuhn's notion of a paradigm—but rather a model which is applicable universally so long as it is mutable enough to suit the given discipline better than any competitor. The modern automobile offers a good analogy: consider the variety offered wherein the original paradigm is merely an engine and four wheels. But whereas Kuhn would not abandon the automobile until it ceased to function entirely, at root Popper would suggest that while cars are great, they could be better and it would be unscientific to say nothing could ever replace them as a mode of transportation.

Popper consistently demonstrates this *attitude* towards our reception and proliferation of scientific knowledge claims in his 1988 *apologia* of a democratic two-party system; his “Day of Judgement” essentially amounts to a falsifiable test. Democracy ought to be testable, in theory as well as in practice. Solving this problem (of the conditions under which democracy works most effectively) for Popper means changing the “old problem of “who should rule?”—which is unscientific because it cannot be falsified—to the one that approximates the criterion of scientific falsifiability as closely as possible within the political-scientific sphere. While we concede that Popper does set an absolute standard by declaring “that [...] a rule of law that enables us to get rid of the government. No majority, however large, ought to be qualified to abandon this rule of law.”²² Setting aside this absolutist thinking which we attribute to the aforementioned trauma of the Great Wars, Popper merely points out that a two-party model has yet to be falsified under certain conditions, whilst the others, according to popper, have. Crucially, this must not be interpreted as a defense of a two-party system, but as an enticement to falsify it so that some alternative comes forth (and this process would be considered progress). This is evident in the way Popper regards a two-party system: merely two competing ideologies wherein one is falsified, adapts, and is then retested at given intervals. Popper admits that

²¹ Steve Fuller, 2007.

²² Popper 1988.

the people may be wrong, and accounts for it naively by saying that people will correct any mistake when experience comes to bear.²³

And while Popper does not mention it, we find it reasonable to opine that the falsifiability factor of the two-party system lies in sociology, a social science. While on the surface a two-party system seems like one wherein one theory is always *confirmed*, the opposite may be the case: if we say *certain circumstances (a lab)* is the scientific terminology, then we may say *mutable circumstances* (the people) are definitely unscientific. In this manner, Popper transforms the problem of making “who should rule?” a scientific (testable) proposition by incorporating a social science; changing circumstances assure that neither ideology is static nor that any previous confirmation or falsification is indicative of future prediction. Popper’s putative solution rests largely on his presumed respect and awareness of the, strictly-speaking, non-scientific elements in human behavior.

On Democratizing the Social Sciences

There are four ways in which Popper has critically dealt with and contributed to the social sciences: self-fulfilling prophecies, open vs. closed societies, situational logic, and piecemeal engineering. In deploying these principles and ideas, Popper drew on his studies in the methodology of the natural sciences and his overall concern with human fallibility, especially as it was expressed during the two World Wars. We think that Reed is correct in summarizing Cruickshank’s view of the linkage between “nominalism and democracy” in the following way:

What is the link? It appears to be a certain elective affinity between the scientist’s agnosticism towards his theories and the definition of terms—a willingness to attempt to falsify all conjectures via experiment and thus choose the theory that best explains the problems and puzzles he confronts, and a willingness to design and redesign concepts and definitions depending on the scientific problem at hand—and the agnosticism and irony of the liberal reformist—who, when confronted with social problems, and suffering in particular, will opt for the best solution to the problems, no matter that solution’s ideological origins or valences. Both of these operations require critical rationalism, both of them embody antiauthoritarian goals, and both are, in Cruickshank’s view, progressive and democratic projects.²⁴

Those who have followed the torturous reception of Popper’s views as conservative (in the British sense) or even neoconservative (in the American sense) in the past two decades will readily agree with Reed’s assessment of Cruickshank’s view of Popper. Moreover, if Popper’s methodology is recalibrated for contemporary usage, and if his more inflammatory comments against fascism are historically contextualized (as we have in the first section), it stands to reason that a level of *rational skepticism* and an overall

²³ Popper 1988.

²⁴ Isaac Ariail Reed 2013.

critical agnosticism is the medicine he prescribes to all working social scientists—less sure-footed ideological trappings and more experimental modesty of trial-and-error or conjectures and refutations. Submitting one’s own views to critical scrutiny is the best prescription to avoid the disease of dogmatism of any sort.

Cruickshank himself agrees that “Popper set the natural sciences up as both an epistemic exemplar and an ethical exemplar. In dealing with the former his work was shaped by the tradition of positivism and in dealing with the latter it was shaped by the tradition of liberal political thought.” In linking the epistemological with the ethical, and in conceiving of them as “exemplars” for all other ways of thinking and researching (or even proposing public policies), Cruickshank continues to argue that “for Popper, what science is, its defining essence, was the ability potentially to falsify theories using the hypothetico-deductive method.” But with this in mind, there is also a critical twist in the summary:

If theories and positions cannot conform to this [method] they become non-science and metaphysical. Saying that this is a ‘practical problem’ rather than a problem concerning essentialism would be tenable if it were the case that Popper had been open to alternative ways of science being conducted. However, this was not the case, and Popper held that his normative philosophy was congruent with the history of science.²⁵

Popper is not as open-minded to his own proposals as he claims to be; in other words, once his exemplars are in place, argues Cruickshank, the liberal-minded Popper becomes more dogmatic or closed-minded. But instead of making this a general judgment of Popper’s life-work, Cruickshank limits this to the question of problem-solving: “a problem-solving activity is deemed scientific or liberal to the extent to which it conforms to the exemplar. If the framing of a problem and its proposed solution have their source in an exemplar the framing is deemed legitimate and conversely.”²⁶ This issue is central to Cruickshank because unlike many other students and critics of Popper, his concern is neither historical nor methodological but instead practical. What’s at stake for the social sciences (perhaps even more than the natural sciences) is solving social and economic and political problems and setting in place policies that intend to improve the human condition or at least the material conditions under which people operate in nation-states.

And here Cruickshank moves to connect Popper’s tradition with pragmatism. He continues:

The construction and reception of ideas, problems and what are deemed legitimate solutions are shaped by traditions or, in Popperian terminology, intersubjective norms. To be sure, intersubjective norms are poorly explained and presumed to change quickly in the pure logic of problem-solving for Popper, but intersubjective norms can be conceptualised as having far more power over agents than Popper allowed.

²⁵ Justin Cruickshank 2014.

²⁶ Cruickshank 2014.

This reworking of problem-solving has affinities with old pragmatism concerning the normative and emotive nature of dialogue and problem-solving. As Putnam (1990) argued, Dewey modelled his conception of democracy on science and, as Hook (2008) argued, Dewey's approach to science was not based on methodological procedures. Dewey, in other words, did not set science up as an epistemic exemplar. He did though set it up as an ethical exemplar. Although he gave a role to normative and emotional commitments in science unlike Popper he did still nonetheless retain the notion that the scientific community was far more open by its very nature to ideational change than other domains.²⁷

It is true that the ideals of science were held as a model for research integrity and the power of self-policing, whether one dates it back to the "Gentlemen of Science" in the 17th century or to more contemporary norms outlined so eloquently by Robert Merton in the 20th century.²⁸ Some have argued that the scientific quest for knowledge and order was inspired by a belief and desire to reconcile divine design with its human comprehension,²⁹ while others have claimed that there remains a divide between the divine and the mundane (from Bacon to Dawkins). Regardless of the overall goal for the study of science, once it was removed from the authority of God and King, it was deemed a radically different mode of thinking and behaving. Science, unlike politics or the market, earned a privileged position in the epistemic and normative worlds of contemporary society, as Cruickshank agrees, and therefore became an exemplar, a model, an ideal-type (in the Weberian sense), of how humanity should conduct itself. But if Science has been understood by the 20th century to be the Scientific Community and by the 21st century the Scientific Enterprise, then a few changes must be accounted for.

To begin with, the idealized version of Science breaks down quite quickly once the community of scientists is engaged in its own internal politics or power-plays, as Kuhn reminds us in regards to the internal workings of "normal science."³⁰ Likewise, once the scientific community is exposed to the industrial-military-academic axis of funding and research agendas (big and small), as illustrated by Philip Mirowski, for example, the "exemplar" or model or ideal-type of Science is not only undermined but becomes thoroughly tainted by greed and deceit, fraud and theft.³¹ This picture of science, then, is neither epistemologically as robust as Popper would have us believe it to be nor as morally refined as Dewey would like it to be. Instead, the scientific community behaves as well or badly as any other community, and its enterprise, like all other postmodern enterprises, suffers from all the compromises it must make to survive or potentially thrive.

And here Reed's critique of Cruickshank (and by extension of Popper) becomes more clearly defined:

²⁷ Cruickshank 2014.

²⁸ Raphael Sassower 2015.

²⁹ Fuller 2007.

³⁰ Kuhn [1962] 1970.

³¹ Philip Mirowski 2011.

What is this link between critical discussion, rationality, science, and democracy? Can we really say that something called critical rationalism is simultaneously the basis of good science and good democratic practice? Steve Fuller (2004) has argued something similar, in attempting to salvage Popper's reputation at the expense of Thomas Kuhn's. However, particularly when developed in connection with Rorty's own liberal politics, I find that this view again papers over some key distinctions.³²

For Reed, the first set of problems associated with this epistemological-moral linkage has to do with his own Weberian understanding of the different institutional setting of natural science and the practices of politics, parliamentary or others. The second set of problems is related to a "contradiction" between "the epistemic privilege which science ultimately tries to achieve" and "the norms of critical rationality that serve as the means to the end of epistemic privilege." This alleged contradiction leads Reed to argue about the "important differences between the natural and the human sciences in how epistemic privilege is achieved" and the "transfer of democracy from scholarship to society in a compelling sociological way."³³

To begin with, it's quite old-fashioned by now to argue about any clear demarcation between the natural and social sciences and between the sciences and the humanities. If Michel Foucault (who is mentioned by Reed) and other postmodernists (e.g., Jean-Francois Lyotard) have taught us anything with their deconstruction and reconstruction of discursive "games" and the genealogy of discourses themselves it is that all disciplines share discursive moves that in turn make claims for privilege and status among the various canons of the academy. This is not to say, as some postmodern critics would gladly do, that all discourses are simply on par or equally important; but instead, to argue that the discursive element of all research projects lends itself to a critical investigation of their authority: these are claims about status and not about validity. And even if validity and credibility are put forth among the criteria of demarcation, their own contexts and their own prejudices must be exposed before they are duly deployed to offer a hierarchy of sort, where one set of disciplines or models are considered more "important" or "valuable" than others, in the way Auguste Comte was able to do.

Second, what is at stake in this argument is neither simply the epistemological-moral axis of intellectual exploration nor the demarcation problem as such (between the natural sciences and all others), but more specifically the ways in which one method or process can be helpful in problem-solving. This, Cruickshank keeps demanding, is to be found in Popper more so than in many others, even when he brings Rorty back to the pragmatics of political contingencies and the openness of tolerance and solidarity. The point here is an appreciation that even when one focuses on the so-called privileged natural sciences (as Popper does), there is a level of humility that goes a long way in solving scientific puzzles (overcoming dogmatism); and it is this mindset, ethos if you wish, that is definitely "translatable" to policy making: even if you have an agenda, and even if the

³² Reed 2013.

³³ Reed 2013.

agenda is considered credible, this does not mean that it a) cannot and will not fail, and b) that when it fails it cannot be changed or revised in ways that would allow a second attempt to be worthy of public acceptance. To see Science “in flux,” as Popper’s greatest student Joseph Agassi has declared, is also to argue that Society is in flux, so much so that it deserves to be reassessed continuously.³⁴

The allergy Popper has continued to have towards “holism” wasn’t limited to methodological matters but extended to socio-political matters (critiques of Marxism, socialism, and communism) as well as to psychological affairs (the critique of Freud and psychoanalysis). Without entering into the details of the concerns with “methodological individualism” and the logic of constructing social categories, concepts, and institutions, we find a sympathetic echo of these concerns in the postmodernist concerns over “Grand” or “Meta”-narratives, the overarching views and statements, conceptual and empirical, that are supposed to tell a singular story or give an “absolutely” correct explanation of this or that state of affairs.³⁵ The complexities found in the social world must humble the student of politics and economics, that is, of human behavior. And perhaps it is this humility and self-critical scrutiny that Cruickshank finds so attractive about both Popper and Rorty in their respective ways. Perhaps it’s an intellectual mannerism rather than a hard-core method of inquiry, a mindset rather than a set of criteria that is attractive to the postmodern student of culture. But, Reed keeps asking, is it the same as being democratic?

Now democracy is itself a problematic concept and its genealogy is fraught with numerous cases of abuse and failure, where neither the rule of law nor the will of the majority has always pertained. But the classical ideals whereby individuals are equally endowed with rights and duties, and these are translatable into voting rights and the delegating of authority directly to a representative government, are still being invoked when we ask our own political institutions to be “democratic.” Is the scientific community democratic? It is insofar as everyone implicitly is allowed to participate in the affairs of scientific inquiry, and everyone ostensibly has the same rights as everyone else (to be right or wrong, to challenge any orthodoxy). But it isn’t democratic at all, if we consider all the machinations of power relations that are found in any social organization.

So, the question isn’t simply, Is the scientific community democratic? but rather, under what conditions can we bring about a more democratic institutional setting for the practice of science? This question retains the ideals of democracy alive, but allows for the particular conditions under which scientific research is conducted. For example, you don’t get an equal say when you are wrong (that is, the results of your experiment have failed), nor is it a “majority rule” when it comes to choosing between two incommensurable theories: the correct one can be the one envisioned by a lone crank no one likes...rather than the majority consensus about which Kuhn speaks so endearingly (and thereby endorses a sort of indoctrination and default-like consensus that should be anathema to anything scientific and/or democratic).

³⁴ Joseph Agassi 1975.

³⁵ Jean-Francois Lyotard [1979] 1984.

So, the very settings of the scientific community and the ways in which the scientific enterprise is undertaken in the 21st century may give us pause before we wish to emulate it to public policies or the ways we decide collectively and democratically what policies to implement and in what manner. The guide of science, if that is what Cruickshank means by “exemplar,” is idealized, of course; it’s not a plea for didactic emulation or copying. Instead, it’s more of a spirit and mindset that is recalled, one of modest proposals that are tried and discarded if need be. Popper’s exemplars are a starting point and not Weberian Ideal Types against which one must measure everything; neither are they construed as a Hegelian Telos that ought to be reached (eventually and with World Spirit, if at all). If demarcations are useful tools for problem-solving, no matter how they violate some idealized notion of Reed’s, then the pragmatics Popper and Rorty share are useful means by which to democratize decision-making processes and their results (since said results are themselves only stepping stones towards an ongoing process of problem-solving with its own internal dynamics and the external forces that shape it over time).

The Postmodern Turn

Despite its bad press over the past fifty years, there is something alluringly similar between the postmodern spirit and Popper’s mind-set that is dedicated to solving problems rather than simply play the “games” of philosophy. What they have in common is an open-mindedness that encourages explorations and experimentations, that allows for the crossing of traditional boundaries and the challenging of classical and dogmatic views and models. Though Popper’s focus has been on the sciences and politics and the postmodern focus has been on art, architecture, and literature, both sets of views and practices insist on the practical elements of their ideas in ways that are not regularly found in other approaches to epistemological questions. And yes, we are aware that both orthodox Popperians and bohemian postmodernists would never want to be associated with each other; yet for us there is something tantalizing in this juxtaposition: how much practical mileage can we get with this conflation of ideas and practices? Would this be an opening of the borders, so to speak, that would allow for the free migration from one set of practices to another?

The stakes, as Cruickshank reminds us, are quite high in the contemporary socio-political scene, where under the pretext of democracy minority voices are silenced, where the poor have less of a say in their own destiny, and where any “other” is both suspect and undervalued, if not completely ignored. In a recent book, Judith Butler adds her voice of concern for how our democratic ideals are not limited to “free speech” but also to the right of assembly. The second right, she argues, is relevant and different from the first one insofar as it brings about an assembly of embodied concerns that eventually not only affirm the notion of “we, the people” but also of the contested boundaries that such a demarcation brings about.³⁶ A feminist political philosopher appreciates the problem of demarcation as well, though for the specific exploration of what democratic assembly means in the 21st century. She is worried, as we all are, that radical inequality of wealth and income has undermined the very foundations of democracy and the ways in which a plurality of bodies find a precarious situation in which to make claims and be noticed.

³⁶ Judith Butler 2015.

Though Cruickshank's and Butler's critiques are primarily socio-economic and moral-political, it seems reasonable to us to deploy Popperian and postmodern methods of inquiry. How?

If anyone is licensed to offer conjectures and if anyone is licensed to falsify them, then there is an implicit recognition of some fundamental human equality among all of us and an invitation of be free to challenge anyone and anything that is considered to have attained a privileged status. The postmodernists display the same sentiment when they undermine the solidity of all foundations and the appropriateness of any hierarchy. In a very Popperian sense, postmodern critics self-legitimate their own critique, not requiring the support or sanction of those already in power positions. Incidentally, this is also what Butler ascertains from radical and revolutionary movements around the globe, Students in Spain and Chile and the Occupy Wall Street in the US.

Though seemingly relativist, the postmodern is much more Popperian in demanding, as Lyotard does, that contexts be set in place for any meaningful assessment (quite like Popper's "logic of the situation" and the feminist "situational epistemology").³⁷ For both Popper and the postmodernist, the point is to solve problems, to offer solutions to puzzles and quandaries, whether the stakes are high or low, scientific or political. And for both, any solution or set of solutions is open to further investigation, further improvement and revision. There is no finality in both approaches, the kind of finality the Hegelians or the Fascists envision because of their own sense of self-righteousness, knowing as they claim they do, that they are right according to some absolute standard they have already always accepted (divine revelation?).

The postmodern turn, as we call it, is not an attempt to take away anything from Popper's importance and relevance, but rather to reclaim his vision and spirit in a more contemporary setting, one that refuses to rehash the liberal vs. fascist stance or the one that insists on the privilege of the natural sciences over all other forms of inquiry. In an era where there has been a fluidity between the natural and social sciences (not to mention identity politics and personal identity) and where the humanities have been proven to be part and parcel of anything technoscientific (e.g., video games), the holding on to the problem of demarcation for its own sake seems anachronistic. Instead, we should welcome the opportunity to apply one lesson we learned in one context into another context and see if it can be useful rather than valid in some esoteric sense. With this in mind, Popper's exemplars are to be used if and when they are useful, and the postmodern critical and at times playful stance should be likewise used if and when it is useful.

There are those who will object that Popper is more concerned with liberal democracy or politics in general than any postmodernist, and that indeed the postmodern ethos runs far behind any other school of thought in its concern for political justice and the organization of political institutions. But as we can see with Butler's concern for plurality and self-declaration of needs and wants, embodied as they are in different democratic contexts, the recognition of the self-legitimizing and open-ended political arena is epistemological

³⁷ Lyotard [1979] 1984.

and moral at the same time. Likewise, there it has been concern with Popper's alleged conservative bent and the postmodern anarchistic thrust. How could either of these ways of thinking be helpful to the kind of democratic discourse and dialogue advocated for in this book?

Our insistence on considering the valiant features of both Popperian philosophy and the postmodern mindset is predicated not on their press—how they are stereotyped—but on the principles that guide their thinking. In both cases there is a strong pragmatic commitment (in Dewey's sense or any other) as well as a strong tolerance for opposing views (in Rorty's sense or any other). This means, practically speaking, that we suggest a different way of viewing both so that the stereotypical façade can be discarded in order to distill useful tools and methods by which to solve problems. Since social and political problems are inherently prone to change over time and therefore defy a clear-cut approach to their solution, both Popper's piecemeal engineering and situational logic come in handy, just as the postmodern contextual plurality lends itself to a modest process of investigation. With both in mind, our politicians and leaders may be more effective, and when proposing their solutions, they might display some humility and thereby open to ongoing revisions and changes.

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