

***Problem-Solving and the Social Production of Knowledge: A Reply to Isaac Reed***  
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**The Idealisation of Science**

I would like to thank Isaac Reed for his careful consideration of the issues that stemmed from my discussion of Popper and Rorty. Here I hope to address those issues and to discuss my view of Popper's approach to science that was left mostly unaddressed in the original article.

Reed noted that I am developing a new form of pragmatism for social science that was focused less on action and communication than the original pragmatists and more on the development of scientific knowledge and its relation to critical social theory and democracy (40-41). This new approach to pragmatism was then criticised by Reed for prioritising normative concerns in a way that idealised and privileged science, with this being blind to the social production of knowledge and institutional power relations. Reed notes how the distinction between the natural and social sciences was both challenged by those seeking to assimilate the social sciences into the natural sciences, as well as by those challenging the idealised conception of natural science knowledge production as privileged above other domains of knowledge.

Rather than accept either of these positions, Reed notes that differences remain and argued that Popper's notions of 'experiment' and 'problem-solving' were insufficient to grasp the different substantive ways knowledge was produced and the social processes affecting the construction of what is deemed a 'problem' and a legitimate 'solution' (42-43). On the relation of science to critical social theory and democracy Reed held that the Popper-Rorty critique of the 'Platonic left' misconstrues the influence of this left and ended up truncating criticism to (putatively) material issues which ignored the discursive production of problems. Having noted how this approach to science sought to remove a metaphysical elitism that followed in the footsteps of pseudo-scientific forms of critical social theory, Reed turns to the attempt to model democracy on an idealised account of science. He argues that this failed to understand the way that institutions and their discursive logics would shape the production of knowledge and action. Finally, Reed argued that critical social theory should be open to some form of utopian thinking in place of the attempt to expunge any speculative utopian thought as illiberal Left Platonism and replace it with an idealised account of science that served to occlude the social production of knowledge and its institutional mediation.

**The Problem of Tradition**

I'd like to start by noting that my attempt to rescue Popper and Rorty from posterity was an implicit engagement with the social production of knowledge, because it recognised the power of traditions to shape how ideas are received and problem-situations discursively configured. Further, Popper and Rorty were, ironically, aware of the power of traditions to influence the reception of their normative claims about the extreme openness of belief change, but failed to analyse the power of traditions and their constitutive role in all belief formation and the reception of ideas.

In his account of a rational approach to tradition, Popper (1972) held that tradition was important because we could not but approach the world via ‘prejudices’. Traditions were rational if prejudices were open not only to criticism and replacement but also subject to fairly rapid change. Rationally held prejudices were to have little ‘sticking power’. Thus Popper (1993) held that Kuhn was correct to hold that we are prisoners of the framework but incorrect to think that the framework constrained knowledge production over time, because we can break out of the framework at any moment via criticism. Despite this, Popper felt he had to work to debunk what he termed ‘the Popper Legend’, namely that he was, broadly speaking, a positivist who was conducting a debate within positivism, in contrast to his perception of his work as ‘the official opposition’ to positivism (1996, 2002a). At the very least this should have made Popper aware that ideas do not unfold according to a pure logic of problem-solving whereby intellectual problems — and their solutions — are abstracted from any social pressures, such as the ability of competing traditions, which do have ‘sticking power’, to shape the reception of ideas and perception of what constitutes a legitimate problem.

Similarly, Rorty (1992, 1999) celebrated the ironist and the poet who would embrace the contingency of meanings, norms and claims about the world. Such people would recognise that beliefs were not expressions of any sort of ‘natural order’ and were all open to re-fashioning and replacing. Given this, for Rorty, any serious commitment to meanings, norms or claims about the world would be dogmatic and a sign of epistemic and ethical immaturity, in the sense that instead of taking responsibility for recreating beliefs, existential security would be sought in false certainties. Despite this view that educated people would take an ironic and uncommitted view to beliefs, Rorty was aware of the power of traditions at least in the reception of his own work. Thus in *Philosophy and Social Hope* (1999) he tried to rebut those in the traditions of the political left, the political right and the analytic philosophy tradition, who all read his work as objectionable ‘relativism’.

For both Popper and Rorty, then, beliefs are taken to develop in a thoroughly open process with no thinker having a strong commitment to an idea or theory lest that lead to dogmatism. Underpinning this emphasis on the open process of belief change is the liberal tradition that is wary of strong commitments, taking this ultimately to entail authoritarianism, irrationalism and Fundamentalism. This sets up the liberal binary between openness and dogmatism which created a problem when it came to analysing the social production of knowledge, which included the power of intellectual traditions, which were not necessarily dogmatic, to play a strong constitutive role in belief formation and the reception of ideas. This is despite the fact that Popper’s work did contain the intellectual resources for such an analysis, which could include an analysis of the traditions shaping the way Popper constructed his normative philosophy in relation to positivism and liberalism. In Popperian terms, traditions will always to some extent be ‘closed societies’ whereby some ideas and problems intuitively ‘make sense’ and others seen alien, unfathomable, needlessly technical, only partially correct and so on. These semi-closed societies were drawn upon to produce normative philosophies of ideational open societies where ideas may have history but no real future, in the sense that they were recognised as prejudices, but prejudices that could be abandoned at any moment.

Popper could have analysed how tradition strongly shaped the production and reception of problems and theories but remained trapped in the liberal binary.

### **The Problem Of Exemplars**

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. Both these normative approaches to the sciences and their relation to critical social theory and democracy fail. Distinguishing the influence of these two traditions makes the critique of Popper subtler for it separates the different ways in which different aspects of his work were socially produced.

‘What’ questions were something Popper (1972, 2002b) was famously antithetical toward. This was most clearly stated in his critique of holism and historicism. The rejection of holism and historicism was part of Popper’s general rejection of what he termed ‘essentialism’, which was the view that meaning was as important as truth, with the correct definition of concepts in terms of their essential properties, acting as a vital prerequisite for knowledge to progress. An essentialist outlook on science would therefore seek to ask what science was and try to answer this in terms of a method being the defining essence of science. As Popper addressed the issue of demarcation there was the danger that he too may end up engaging with a ‘what’ question concerning the defining essence of science. The problem here for Popper would be that such an essentialist approach to science would result in arbitrariness or dogmatism in the attempt to create a definition of science that was abstracted from the practical matter of solving substantive problems using the best method possible. Popper was alert to this potential problem and argued that:

[M]y purpose is to show that my ‘problem of demarcation’ was from the beginning the practical problem of assessing theories, and of judging their claims. It certainly was not a problem of classifying or distinguishing some subject matters called ‘science’ and ‘metaphysics’ (1996, 174).

Despite this denial things were not quite so straightforward. Although Popper allowed for metaphysics to be meaningful he still, by addressing the issue of demarcation, remained trapped within the positivist problem-situation of demarcating two qualitatively different domains from each other. To be sure, his conception of those two domains of science and non-science was very different from logical positivism, but nonetheless the conception of two qualitatively different domains is set up by the very act of establishing a demarcation criterion. Engaging in the problem of demarcation requires a definition to say what the essential property of science is and why this essential property makes science qualitatively different from other domains. In his role as the ‘official opposition’ to logical positivism Popper felt the need to engage in this problem-situation and come up with an alternative way of demarcating science from non-science from that of logical positivism, rather than completely negate positivism by negating its problem-situation and avoiding this altogether.

The consequence of this was that, for Popper, *what* science is, its defining essence, was the ability potentially to falsify theories using the hypothetico-deductive method. If theories and positions cannot conform to this 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. Here then, problems in this approach to ‘problem-solving’ philosophy, are defined according to an answer to the ‘what’ question that operates within the ambit of positivism by demarcating what science is from what non-science is.

The framing of legitimate ‘scientific’ problems, and the legitimate ‘scientific’ solutions for those problems, would be cut to fit the definition that addressed the demarcation problem. Given this, it is likely that the production of most scientific knowledge is not scientific according to this approach to the ‘what’ question because scientists may fail to maintain that a whole theory is falsified if one falsified prediction is encountered. Conceptual violence would be done to the history and practice of substantive problem-solving in science by comparing it to a general definition that was constructed to compete with the logical positivists within their problem-situation of demarcating science from non-science.

Whilst Popper did not adhere to the view that non-science was nonsense he did retain (whilst engaging with the demarcation problem) the positivist conception that natural scientific knowledge was not only qualitatively different from non-science but superior to it. Thus Popper held that economics was the only social science that ‘appealed to him’ (2002a, 139) because its methods were the most closely aligned to those of the natural sciences. For the social sciences to be sciences they had to conform or at least approximate to ‘what’ defined the natural sciences. Such a view of economics as approximating to the empirical work in the natural sciences is at the very least moot. Hutchison (1938) famously questioned the *a priorism* in economics (from an empiricist perspective). More recently the Post-Crash Economics society set up by undergraduate students at the University of Manchester (UK) rejected the curriculum based neo-classical ‘scientific’ economics for being ideological and unable to explain the reality it purports to model. So, for Popper, the natural sciences were an epistemic exemplar, defined in terms of methodological protocols that acted as the essence of science and which made science not only qualitatively different from other domains but superior to them.

If this essentialist approach created problems with the conceptualisation of the history and practice of natural science, the use of this essentialist approach as an epistemic exemplar for the social sciences only further served to highlight Popper’s concerns about essentialism. For the imposition of the general definition of ‘what’ science was on the social sciences would not only radically truncate the construction and solution of acceptable problems far more than in the natural sciences. It would also radically truncate the scope for engaging in socio-political problems too. On the former point there is an irony to note. In his construal of science as an ethical exemplar (discussed below) the influence of the liberal tradition leads Popper to juxtapose an (idealised) open-minded

approach to criticism with strong emotional and / or epistemic commitments. The latter would be taken to be illiberal because such commitments were taken to be dogmatic and thus potentially irrational and authoritarian. So, if a whole series of methods which do not fit with the epistemic exemplar are to be excluded from social science research, in order to make science conform to ‘what’ science is, then as the definition is used to define the problem, dogmatism replaces open mindedness and any ‘practical problem’ of using a range of methods to address a range of problems. This was the exact opposite of Popper’s argument about science practicing ‘methodological nominalism’ where definitions are reworked as new problems are encountered, with problems driving definitions in place of the range of problems being delimited by a prior commitment to a definition.

As regards the issue of socio-political problem-solving the use of science as an exemplar may lead to a technocratic approach to piecemeal social engineering. This would be because policy experts using a scientific approach would ‘know best’. Just as Lippmann (2009) rejected the notion of the ‘omni-competent citizen’ in favour of rule by technocrat experts, so too would the notion of science as an exemplar demand the framing and solving of socio-political problems by scientific / technical experts. Such a technocratic approach is, it can be argued, embodied in ‘evidence based policy-making’ (as well as evidence-based practice in, for example, medicine). However, as Pawson (2009) argues, EBP fails because its conception of science is simplistic. Basically, putting Pawson’s critique in Popperian terminology, the argument is made that EBP relies on a specious attempt to be atheoretical and makes generalisations based on an inductive method. However, a reliance on technocrat experts clashes with Popper’s view on democracy. He argued that:

A good political model would be a democracy which, in the end, does not see its task as being to establish cultural leadership. It must be for peace and [welfare reforms], but the aim is that people are culturally free and not led by the top. Of course, this means a lot of education (1997, 37).

With this approach to democracy the ‘horrible party system’ where MPs serve their party’s self-interest first ought ideally to be replaced by a system where MPs belong to no party so as to best serve an engaged and educated public (1997, 36-37). A dialogic approach to democracy here then would see electors holding the political elite to account. All of which runs counter to a technocratic approach to policy making — especially as Popper is aware of institutional self-interest developing.

So, scientific knowledge was qualitatively different from other domains of knowledge and superior to them with economics being regarded as the closest approximation to the epistemic exemplar. Yet when it came to problem-solving in the socio-political domain Popper’s emphasis on lay agency and thus lay knowledge ran counter to this use of science as an epistemic exemplar — even though the social sciences were meant to be modelled on this exemplar. This would create the odd situation whereby an educated and active public would be disengaged from professional social science even though both sought to address socio-political problems.

However, despite arguing against top-down elitist-expert engineering, Popper did see a need for an ethical elite to practice censorship. He believed television to be a great corrupting force which without restriction will ‘go on leading us down a slope away from civilisation, making teachers powerless to do anything about it’ (1997, 60). Whilst television may undermine civil society and politics, science as an ethical exemplar had no analogous corrupting forces. Here we encounter the utopian-liberal strain in Popper’s work. With this conception of science, scientists were idealised liberals operating in the free market of ideas that had no distorting influences and where the best ideas could be immediately recognised as such. This approach is compatible with the notion of science being an epistemic exemplar but it does not depend on it because with this approach science is defined in terms not of a commitment to a method that defines what the essence of science is but to a strong commitment to have no strong substantive ideational, normative and / or emotional commitments.

Thus, scientists would not only freely recognise and embrace the ‘best idea’ but freely drop their commitment to another theory. The natural sciences were to be the perfect open society where a pure logic of problem-solving moved knowledge forever toward an ultimately unattainable absolute truth. The utopia of perfect knowledge may never be arrived at, but the utopia of perfect striving uncorrupted by distorting influences was embodied in the open society of science-as-liberalism. With improvements in education and a decreased influence of television, a greater democratic accountability in liberalism may occur, where problem-solving in socio-political matters became increasing similar to that in the ethical exemplar of science.

Popper’s antipathy towards sources meant he would accept a sociology of error but not a sociology of truth. So, he not only rejected the foundationalist emphasis on the ‘authority of the intellect’ and ‘authority of the senses’ but also any emphasis on the social source of ideas being important (Popper 1972). With the pure logic of problem-solving the source of ideas was deemed irrelevant and only likely to lead to relativism or reductionism with ideas just being expressions of interests. Thus the only role for a social account would be to explain how scientists erred by being influenced by ideology etc. However, there are a broad range of sociological positions which give accounts of how scientific knowledge is socially mediated. Such accounts can focus on institutional and funding (and by implication, political) pressures and the role of social relations and prevailing attitudes in the scientific community. Whereas Popper would regard such factors as external to science and distortions of the free market of ideas, convincing cases have been made that such factors are intrinsic to science and the construction of problems and their legitimate solutions.

Obviously when it came for liberal democracies to approximate to the ethical exemplar of science based on a pure logic of problem-solving the social production of problems became a more acute difficulty because there could be no escaping the social sources of beliefs and their role in constructing problems and solutions. The perception of any social, economic or political issue will always come from some form of normative and / or theoretical or ideological starting point and will be enmeshed in power relations of some sort or another. The only way to avoid this would be to have a purely technocratic attempt to base socio-political problem-solving on putatively non-normative / technical

issues. Popper though would be against such a top-down technocratic approach because it would be open to bureaucratic self-interest and go against a ‘culturally free’ public forming. However, the socially produced liberal binary created problems here. This is because rejecting any emphasis on the source of ideas and rejecting strong normative commitments, especially to claims about normative ends being good in themselves, would help facilitate the domination of instrumental rationality. This in turn could facilitate a form of corrupt technocracy.

This is because if debate about normative ends was taken to be problematic, legitimate dialogue about problems and their solutions would have to be framed in terms of seeking the most efficient means for ends that were left unquestioned, such as the need for capitalist economies to pursue constant growth. In such a situation it is easy for disenchantment to undermine the development of ‘culturally free’ publically engaged citizens, with public life being unmotivated by grand visions of the good society and instead becoming a matter of advanced bean-counting. Given this, socio-political problems may end up being defined not only in terms of the most efficient means for existing goals but also in terms of institutional self-interest by government departments and the plutocratic sections of the capitalist class who exert a massive influence over politics and the discursive construction of problems.

### **Problem-Solving**

So, given the liberal binary Popper cannot study the strong mediating and constitutive role of social factors in the production of knowledge, the reception of ideas, the framing of problems and the delimiting of acceptable solutions etc. This meant that the generation of his own work as a critique of positivism that operates partly within a positivist problem-situation, and which is inspired by liberalism, is ignored by him. Consequently, the problems that stem from Popper’s work are not just problems of Popper’s own making but problems which have sources in traditions. In the critique of Popper as the normative philosopher presenting idealised accounts of problem-solving and science the difficulties in his work are often presented as solely of Popper’s making. This can be ironic when those criticisms are motivated by a concern to replace such an idealised normative vision with an emphasis on the social production of knowledge.

It is not just the case that Popper’s work needs to be understood in relation to its source in traditions. Rather it is also the case that Popper’s treatment of science as an epistemic and ethical exemplar shows that contrary to Popper’s official antipathy to any reference to sources, the basis of his normative philosophy is the reference to sources. This is because 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.

Whilst Popper’s use of exemplars may be criticised this is not sufficient to reject his whole philosophy. Popper’s discussion of exemplars draws on the notion of knowledge being a problem-solving activity but this does not mean that a problem-solving approach is necessarily tied to the use of exemplars. An alternative use of Popper’s philosophy can be outlined as follows.

Popper was correct to raise concerns with the emphasis on the source of knowledge with foundationalism defining the objects of knowledge to fit the postulated inner epistemic authority and the hermeneutics of suspicion reducing all ideas down to expressions of power. However, as there can be no pure logic of problem-solving, nor any normative philosophy of science as an epistemic or ethical exemplar, based on such a pure logic, there needs to be some reference to the source of knowledge. 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.

Intersubjective norms provide the source for knowledge in the sense that they shape how scientists, social scientists, lay agents and elite agents, perceive the world and because they take a lot longer to change that Popper allowed for. This is because what could count as a legitimate refutation of a solution to a legitimate problem is heavily shaped by those norms. One cannot discount the source of a solution or the source of the framing of a problem to focus only on testing because problems, solutions and the results of tests are all perceived in a heavily mediated way that does not allow for a pure logic of problem-solving. Furthermore, it is not the case that intellectual traditions will be purely intellectual but that intellectual intersubjective norms will be suffused with normative and emotional commitments which are not the sole preserve of social and political traditions. Here an account of the social production of knowledge would not reduce knowledge claims to the origin in a relativist fashion but instead empirically explore how traditions, or intersubjective norms, functioned to help shape the production and reception of ideas and problems.

I say help to shape the production and reception of ideas and problems because other factors would impinge on this too. Any empirical exploration of how ideas and problems were developed would also have to draw on Popper's concept of situational logics. Such logics would need to be conceptualised in a multifaceted way as being constituted by traditions (acting as the source of knowledge), institutional dynamics, vested interests, the intellectual, material and publicity etc. resources available to different groups and so on. With such an approach there would be no separation of discursive factors from material factors. Problems would be framed within particular situational logics with traditions and power relations impacting on their discursive production and dissemination. With this approach there could be no answer to the normative and essentialist 'what' question about what distinguished different types of scientific activity. Instead there could be the exploration of how the social production of knowledge occurred in different domains and how those domains themselves were constructed.

In my original article Rorty's critique of post-Nietzschean theories was upheld. Nonetheless this does not rule out the study of discursive factors because rejecting the pure logic of problem-solving does not mean reducing ideas to expressions of material interests but exploring the interacting dynamics of traditions and institutional relations. Thus Popper was criticised in my article for taking as given a sort of quasi-post-

ideological social democratic ‘tamed capitalism’. Popper, in other words, failed to appreciate how the tradition he took for granted was a tradition and not a neutral state of affairs and how, to use Rortian terminology, this tradition was ‘contingent’, and how it was enmeshed in power relations.

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.

Whereas science was based on dialogic problem-solving, with normative commitments, democracy as an ethical way of life, where lay agents held elites to account, had yet to come into being. Instead, at the moment, the power of liberal individualism was such that it limited people’s understanding of the technical and institutional forces around them. Dewey (1954) hoped that education and a natural tendency to sociability may overcome this. However, some passages in Dewey (1954) sounded as pessimistic as Horkheimer (2004), with Dewey taking people to be unquestioning ‘interchangeable’ conformers to an exploitative consumer-capitalist system.

A new pragmatism would thus have to avoid the normative use of science and instead focus on the social production of knowledge which would mean recognising that some problems stemming from Popper’s work are socially produced by the liberal binary and separating those aspects from other aspects. In terms of relating this to critical social theory and democratic reforms, general references to the need to improve general education would have to be complemented by critical studies of how educated lay agents may best engage in the prevailing situational logics. This would mean understanding how what are currently presented as socio-political problems by the political and economic elites are not ‘natural’ or ‘technically neutral’ but socially-discursively produced constructs that can be challenged by drawing on alternative traditions of thought.

In place of pure logics or approximations to pure logics of problem-solving there would be an understanding of situational logics and an ability to use some traditions *qua* sources of knowledge to challenge prevailing traditions and their discursive renderings of problems. This would also need to abandon the liberal binary’s prohibition of strong commitments to normative ends. The reason for this is that critical traditions with strong normative commitments to change society would need to be drawn upon to motivate people to break free from the iron cage of societies dominated by instrumental rationality and the discursive construction of problems by political and economic elites. Whereas liberals like Popper and Rorty would fear this leading to irrationalism, authoritarianism and Fundamentalism, it is possible for strong commitments to normative ends to be held rationally and to be amenable to dialogic development. A strong commitment to a tradition is not, contra Popper and Rorty, a rejection of fallibilism.

So, problem-solving does not have to be tied to a normative philosophy that seeks to define what science is and why it is superior in a way that is problematic. Rather, problem-solving can explore the social production of knowledge occurring in different situational logics with intersubjective norms / traditions having more power than Popper allowed for in the production and reception of ideas. A rational tradition is one where ideas do have futures and futures which can be empirically explained. This is contrary to any notion of a pure logic of problem-solving where ideas have virtually no future in the state of permanent revolution within the liberal utopia of perfect striving in the free market of ideas.

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